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Lean Manufacturing Planning and Control (LMPC)

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1 Lean Manufacturing Planning and Control

This documentation describes the application of the consulting solution Lean Manufacturing Planning and Control (LMPC).

LMPC is a consulting solution for the detailed scheduling of orders.

For rough-cut planning, there is a separate consulting solution with the name LRP, which is delivered together with LMPC. Lean Rough Cut Capacity Planning

The LMPC package consists of the following elements:

- The **heijunka detailed scheduling planning board** in ERP with over 130 functions, which is called using transaction */LMPC/HJPT*.LMPC HJPT Planning Table [page 16]
- **LMPC mass processing of orders**, which is called using transaction */LMPC/MP*. LMPC Order Mass Processing [page 529]
- **Delete and create planning data** using transaction /LMPC/DCPD. LMPC Delete and Create Planning Data [page 553]
- The **LMPC Order Report**. LMPC Order Report [page 560]

The detailed planning in SAP ERP or SAP S4/HANA with the LMPC HJPT planning table is described by means of simple sample scenarios. The use of the functionalities is shown as an example.

1.1 Concept of the Consulting Solution Lean Manufacturing Planning and Control

As the name of the consulting solution suggests, the SAP LMPC detailed scheduling planning board not only facilitates traditional detailed planning and order control in SAP ERP and S4/HANA, but also includes tools and methods, such as heijunka, from the area of lean manufacturing.

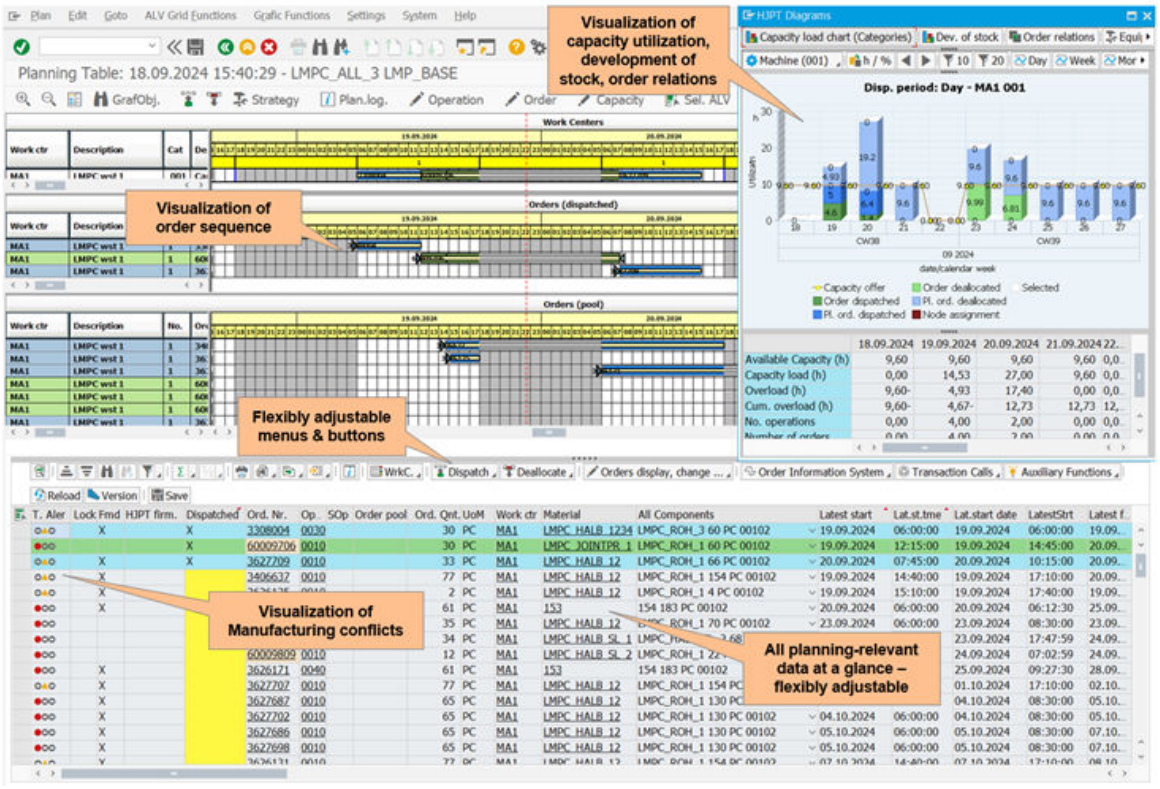
Both approaches – detailed planning and lean manufacturing – have their place in logistics and manufacturing. Detailed planning is capacity-related, or concerned with the finite planning of capacities based on requirements, from sales planning, for example. This is also referred to as a "push" approach.

Lean manufacturing, on the other hand, is based on a "pull" approach. Strictly speaking, manufacturing should take place only in response to an actual sales order or physical consumption.

Both approaches can be combined to great advantage in an SAP system, and this consulting solution can be used to expand and improve the existing possibilities that are available in the standard SAP system.

The consulting solution consists of the following transactions:

- LMPC HJPT Planning Table [page 16]: The planning table for detailed scheduling is the central user cockpit and contains a full range of production planning functions that create a variety of possibilities for visualizing data and achieving transparency. It gives users a highly comprehensive view of the current state of production and production planning, and enables them to influence and change these if required.



HJPT Planning Table

- S_FPL Dispatch by LMPC Timetable [page 223] : A template can be defined in advance in a weekly grid, into which the production orders can subsequently be entered and dispatched based on capacities. This facilitates shift planning or the depiction in the system of a heijunka board that is only filled with orders at a later stage. User-friendly sequence planning is also possible using the specifications from the timetable.
- LMPC Order Mass Processing [page 529]: Certain LMPC functions can be applied to a large number of orders at order header level. This is used to accelerate the processing of orders.
- LMPC Delete and Create Planning Data [page 553]: As soon as changes are made to planned orders, they receive a firming indicator and are no longer adjusted by the MRP run. You can use this transaction to delete firmed planned orders and generate new planned orders using an MRP run.
- LMPC Order Report [page 560]: Contains the data of transaction MD4C. Can be enhanced in the customer system.

1.2 Integration of LMPC HJPT Planning Table

The LMPC HJPT planning table is a consulting solution that enhances the standard SAP planning table.

The LMPC HJPT planning table is fully usable in both an SAP R/3 system and in an S/4HANA system, on-premise and in the private cloud.

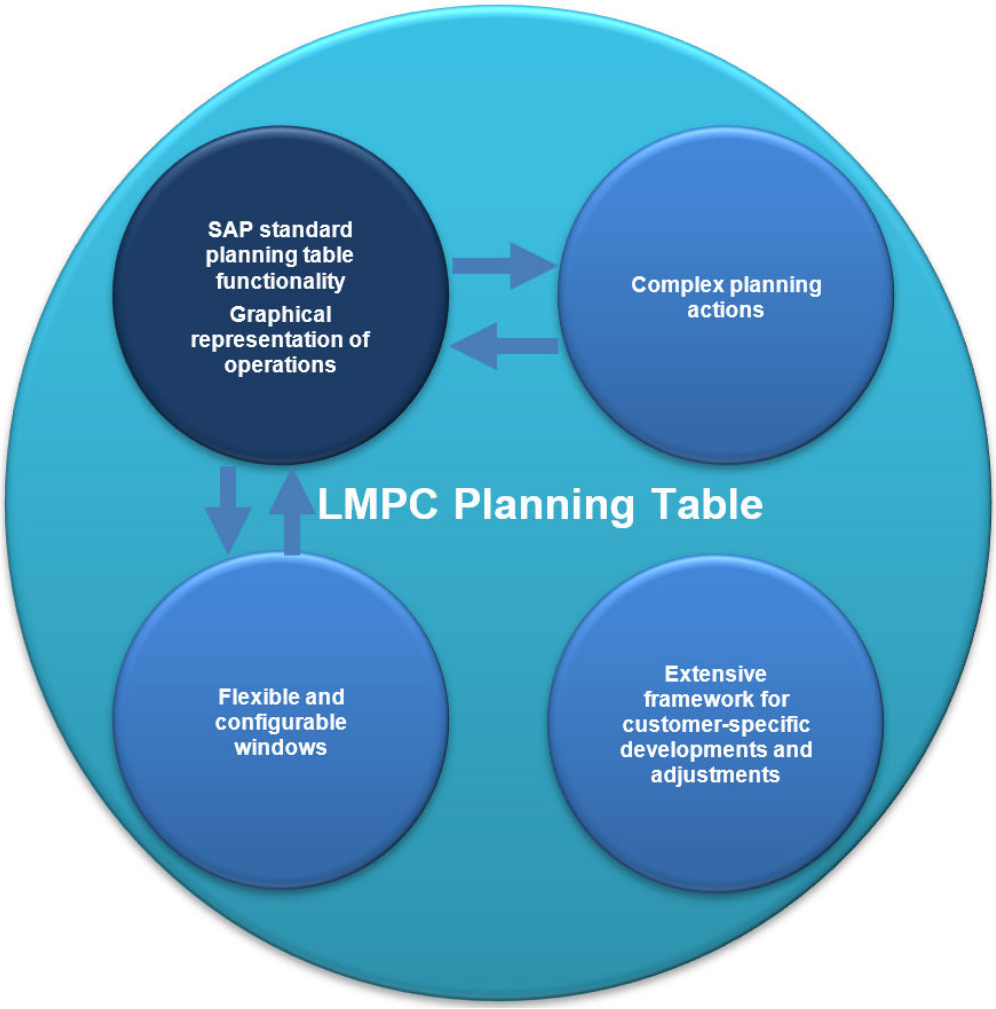
It is not available in SAP S/4HANA Cloud Public Edition

The LMPC HJPT planning table is a consulting solution that integrates the capacity planning table of the standard SAP system (PP-CRP, transactions CM21 and CM25).

> **Note**
>
> The capacity planning table can still be used within the consulting solution LMPC after 2025.
>
> The LMPC HJPT planning table can be used as a replacement for the SAP capacity planning tables CM21 and CM25, which are no longer available as of 2026. LMPC and SAP S/4Hana Compatibility Scope [page 9]

The functions of the HJPT planning table use the full scope of the standard SAP functions for dispatching, deallocation, and rescheduling.

The behavior of the HJPT planning table can be flexibly influenced “externally”. For example, you can create and use customer-specific function modules and classes. You can also develop and use your own functions by means of buttons in the grid.



LMPC Framework

1.3 LMPC and SAP S/4Hana Compatibility Scope

Transactions CM21, CM22, CM23, CM25 etc. with graphical planning board are part of the SAP S/4HANA compatibility scope. 2269324

The graphical planning table (transactions CM21, CM22, CM23, CM25) expires as part of the SAP S/4HANA compatibility scope for S/4HANA customers in certain areas at the end of 2025.

LMPC (Lean Manufacturing Planning & Control) is available as a fully-fledged alternative to the capacity planning table (CM21, CM22, CM23, CM25).

LMPC is available on-premise and in the private cloud. LMPC is compatible with ERP and S/4Hana systems. Integration of LMPC HJPT Planning Table [page 7]

The graphical planning functions of the above-mentioned CM functions can be used in LMPC and can still be used within the consulting solution LMPC after 2025.

LMPC provides the same functionality as the capacity planning table:

- Clear graphical display of the current capacitive utilization of work centers using a time stream.
- Graphical dispatching, deallocation and rescheduling using drag and drop.

The LMPC HJPT planning table also provides the following enhanced functional scope:

- Accelerated planning activities through automatic planning in the background. Program /LMPC/HJPT Background Processing [page 26]
- Large number of planning heuristics for a wide range of use cases:
  - Planning on the requirements date. S_EPRQD Dispatch on Requirement Date [page 205]
  - Block or campaign planning. S_FPL Dispatch by LMPC Timetable [page 223]
  - Insert operations into the production plan. S_EPSELX Dispatching Insert in Gaps with and Without Pool Orders [page 212]
  - Planning according to sort criteria. S_EPSRT Sorted Dispatching [page 217]
  - Optimal setup planning. Planning Taking Account of Setup Time [page 264]
  - Planning according to predefined rules. S_RBPL Rule-Based Dispatching [page 240]
  - Multilevel planning. Multilevel Planning via Order Relations [page 313]
  - Planning Functions [page 180]
- Enhanced evaluation options with additional charts. Additional Windows [page 78]
- Larger information depth with over 1500 data fields in the ALV Grid and configurable alerts.
  ALV Grid [page 65]
  Data Provider /LMPC/CL_DP_ALERT Alert Processing [page 435]

Migration to LMPC HJPT Planning Table

The LMPC HJPT planning table has preconfigured profiles that enable a quick and easy start with the planning table.

The HJPT planning table does not require an interface configuration. You work with the same data as the graphical planning table.

It is possible to transfer Customizing and personalization settings of the classic capacity planning table to the UI configuration of the LMPC HJPT capacity planning table.

To do this, contact LMPC consulting.

Required and Recommended Action(s)

If you have previously used the graphical planning tables (CM21, CM22, CM23, CM25), consider migrating to LMPC. It will be easy for users to familiarize themselves with planning with the HJPT planning table because it enhances the known planning functionality of the capacity planning table with many additional functions.

See also SAP Note 3671312.

1.4 Advantages of the LMPC HJPT Planning Table

LMPC Plus Points

The LMPC HJPT planning table offers a range of benefits that make it the ideal planning cockpit for detailed scheduling in business organizations:

- Extensive detailed scheduling solution
- Full integration with SAP R/3 and SAP S/4HANA. No interfaces. This also enables full integration with the SAP MES world and the SAP demand and supply world
- Immediate start of planning possible by delivering a preconfigured consulting solution
- Complete information and transparency for the planner. Almost 1100 data fields. All data for decisions in one place
- Flexible user-specific layouts can be set. Display on one, two, or three screens
- Creating an individual cockpit for each planner using navigation profiles and planning profiles
- Traffic lights and coloring of data allow a quick overview of the planning situation and therefore a short response time
- Display of capacity utilization using charts simplifies planning
- On-hand stock development at a glance
- Mass conversion of orders: ATP, missing parts determination, order release, cleaning orders, change of work center, production version change, printing shop floor papers
- Mass planning functions: Dispatch, move production plans, reschedule
- Variety of planning heuristics. Planning according to any criteria: Bottleneck resources, raw material availability, material groups, planner groups, customer requirement date, and so on.
- Automatic multi-level planning across all low-level codes
- Nightly planning run in the background for the automatic creation of finished production plans
- Various application options: As a planning cockpit for production planners, as an evaluation cockpit for management, as a monitor in production
- Consulting solution: Development of custom planning heuristics in collaboration with SAP is an option
- Comprehensive enhancement options by the customer. Integration of customer coding possible using simple Customizing settings
- Can be used in SAP PP, PP-PI, PP-REM, PM, PS

1.5 Prerequisites

Capacity planning is carried out in the HJPT planning table. This means that orders are dispatched to capacities of machines to create a production plan.

Capacity Requirements

The HJPT planning table processes different types of orders.

Examples: Planned orders in discrete manufacturing, planned orders in repetitive manufacturing, production orders, process orders, maintenance orders, orders for networks, orders from collective orders, and so on.

The orders are usually created via material requirements planning using the MRP run. However, they can also be created manually. This data must already exist in the system before it can be processed.

Orders can only be processed if they have capacity requirements. This means that lead time scheduling must be carried out in MRP planning.

Master Data

Certain master data settings are required to be able to create orders.

For example, the following master data is required for a standard PP scenario:

- Work centers with available capacity and scheduling formulas
- Materials with BOMs
- Routings
- If necessary, production versions for the materials

LMPC Customizing

The settings for the LMPC planning table have been delivered via a Customizing transport. These settings must be imported into the system before planning can begin.

LMPC Customizing consists of the following:

- Settings in LMPC-specific tables
- Example profiles for the capacity planning table

All elements of the delivered example profiles for the capacity planning table are delivered with “LMPC” or “LMP” as the key, so that a unique assignment to the LMPC package is possible.

The delivered settings are only example settings that enable a quick start with the consulting solution. They must be adapted to the situation in the system.

> → Tip
>
> If you need help adjusting the settings, an LMPC consultant can help you with this.

Examples in the Documentation

The following scenario is used in the test examples of the LMPC documentation:

- Finished products
- Routings for the finished products
- Bills of material for the finished products, each with a semifinished product

- Associated production versions
- Semifinished products with BOMs, each with one or two materials as well as associated with routings in production versions
- All the work centers have two individual capacities (capacity categories 001 machine and 002 Human Resources), of which capacity category 001 will be used for scheduling.
- Requirements plan for the materials with different daily quantities per material. The quantities have been selected in such a way that there is sufficient capacity for the production of the total quantity for each day.

Time Zones

The HJPT planning table reads the capacity requirements from the orders and the available capacities of the work centers. A graphical time stream is generated from this data, which displays the temporal position of the capacity requirements on the machines.

The graphic uses a vertical dashed line (time line) to display the current day and time of the user. The planning function refers to this time line to decide whether an operation is in the past or in the future. With the usual settings, it is not possible to schedule in the past.

The position of the time line is calculated using the time zone that is set in the user master data. In this way, the time line always matches the current time of the user.

The planning function itself calculates independently of the time zone of the user. The time zone of the user is taken into account only if it defines the area that cannot be planned. This is before the current time of the user.

If an incorrect time zone is set in the master data of the user, depending on the time shift, orders can either be scheduled in the past or only a certain number of hours in the future. Therefore, setting the time zone of the user correctly is an important prerequisite for planning in the capacity planning table.

There are no other setting options to influence the time line.

1.6 Constraints and Further Development

Restrictions

This documentation does not claim to be complete documentation in terms of all overall existing or personalizable options. A standard use case is described for each function.

The standard SAP functionality used is only documented if it is required for the process flow of the scenario. Additional standard SAP functionality is not part of this documentation.

> ⚠ Caution
>
> LMPC is a consulting solution for SAP GUI for Windows. LMPC can only be used in a Windows environment via the SAP GUI.
>
> The consulting solution cannot be used in a JAVA or HTML environment. The consulting solution cannot be used with SAP GUI for JAVA. See SAP Note 312606.
>
> Web Dynpro and SAP Fiori are not supported. The consulting solution cannot be called via a browser.
>
> LMPC cannot be used in the SAP public cloud.

LMPC is a consulting solution. Consulting solutions arise from project work in collaboration with customers. The consulting solutions are developed for specific customer scenarios. All the functions described in this documentation are available in the scope of functionality described.

Any scenarios that are not described in this documentation are not supported by LMPC. Therefore, if a use case, planning situation, or functionality available in the standard SAP system is not described, it is not supported by LMPC.

It is possible that an unspecified scenario may work with the LMPC HJPT planning table. If you want to try out such a scenario, LMPC consulting can support you after commissioning.

Linguistic inaccuracies in the documentation may give the impression that LMPC functions are supported that are not actually supported. In such cases, the actual implementation of a function in the consulting solution is always valid and not the description in the documentation.

Further Development

If you have a planning requirement that is not yet supported by LMPC, LMPC development can work with you to develop a new planning function for a scenario.

If you want to request a new function or enhancement, create a ticket under component XX-PROJ-CON-LMPC and describe your requirements there. We will then create an estimate of the effort required to implement this new requirement.

If you do not have budget for a new development, you can use “Idea Place” to submit proposals for functions.

The LMPC consulting team welcomes your proposals and will look into them. Suggestions directly from the user are very helpful. These suggestions can be implemented in future LMPC cycles. However, there is no guarantee that submitted proposals will be implemented.

> → Remember
>
> The LMPC delivery provides you with sample Customizing for the LMPC functions and for the settings of the capacity planning table. The sample Customizing makes it easier for you to start using the HJPT planning table.
>
> This sample Customizing must be adapted to meet individual customer requirements in the relevant system. The LMPC configuration guide helps you to make settings. Configuration of LMPC HJPT Planning Table
>
> If you require assistance with configuration, contact SAP consulting.
>
> The configurations for the LMPC functions and the settings of the capacity planning table for use in the HJPT planning table are consulting services and not troubleshooting. LMPC consulting support does not check the Customizing settings and does not answer any configuration questions. LMPC consulting support does not explain how the LMPC HJPT planning table works.

Recommendations for SAP GUI

In the settings for SAP GUI, the user can select various SAP themes. SAP themes determine the display of the content, such as the color, size, and shape of the screen elements.

LMPC with the HJPT planning table is a consulting solution that displays a very large amount of data in tight space.

The display with the various SAP Belize and Quartz themes is based on the display of SAP Fiori apps and uses larger screen elements. These themes were developed for applications that don't display much data. The use of SAP Belize and Quartz themes in connection with the HJPT planning table may cause the display to become unclear. The use of these themes is therefore not recommended.

For a compact and clear display, use one of the following SAP themes:

- Blue Chrystal Theme
- Corbu Theme
- SAP Signature Theme
- Classic Theme

> **Note**
>
> LMPC development cannot influence the display of the elements in the SAP themes. Test various settings and use the SAP theme that is most suitable for your needs.

Related Information

Idea Place

1.7 LMPC Cycles

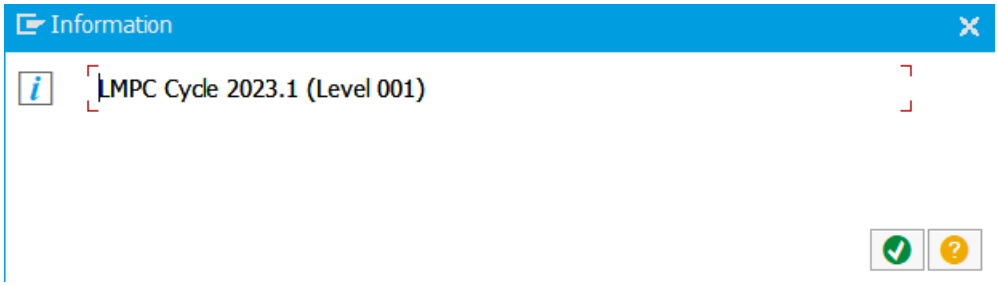
The LMPC consulting solution is being developed continuously. As a rule, a new cycle with enhanced functions appears once a year. During the year, levels for the respective cycle appear at regular intervals; these levels contain error corrections.

You can access the information about which cycle is available in your system by simply choosing the information button above the ALV Grid in the HJPT planning table.



Information Button

A popup window appears with information about the cycle and level.



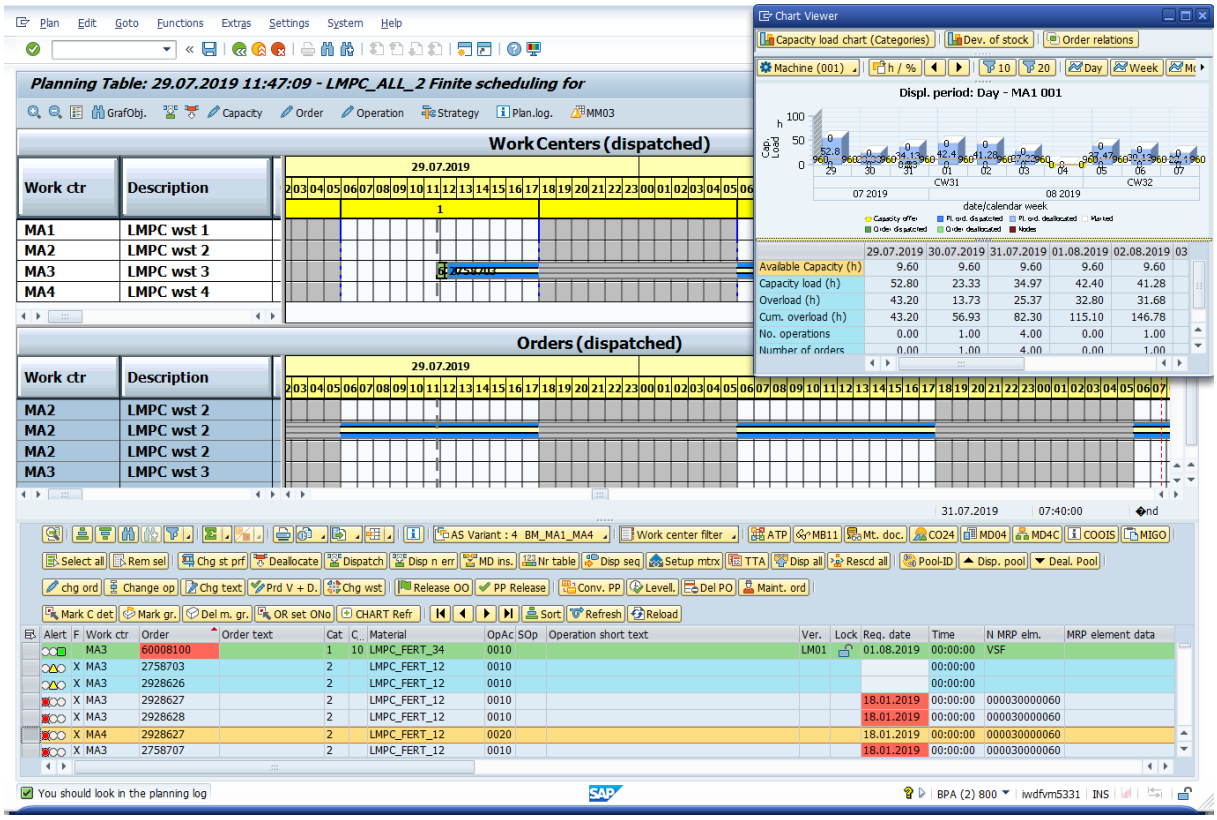
Example of Cycle and Level Information

The latest level with error corrections for a cycle can be downloaded via the SCM delivery platform. Only the last level is available to download since this transport contains all previous corrections.

> → Tip
>
> Check regularly to see whether a new level is available for your LMPC cycle, and if so, import this level into your system. In this way, you keep the consulting solution up to date.

2 LMPC HJPT Planning Table

Overview of HJPT Detailed Scheduling Planning Board



LMPC HJPT Planning Table

The LMPC HJPT planning table is a further development of the graphical capacity planning table for the enhanced capacity leveling of the standard SAP ERP system.

It consists of the following 3 main areas:

- Graphical planning board (usually at the top)
- ALV Grid with data on the orders (usually nearly 1100 possible fields)
- Charts for displaying the capacity utilization, the stocking situation, and the order relations (usually as a popup window)

Depending on the Customizing settings in your system, the individual elements may be arranged differently.

The SAP LMPC HJPT detailed scheduling planning board provides a large number of planning functions for a wide range of requirements. For example, HJPT standard dispatching can be used to dispatch orders individually. However, they can also be dispatched as a group in a predefined sequence in line with the timetable specifications, or grouped as order pools. A specific planning strategy can be assigned for each planning function. In contrast to the standard SAP system, in which only one planning strategy can be assigned and other planning strategies must be selected again each time.

→ Remember

Planning changes within the HJPT planning table only come into operational effect when you save. Therefore, executed actions that have not been saved can be voided by refreshing the planning table, without you having to exit the transaction. Planning takes place in simulation mode.

2.1 Call LMPC HJPT Detailed Scheduling Planning Table

Ways to Call the HJPT Detailed Scheduling Planning Table

There are four transactions with which you can call the LMPC planning table:

- **Transaction /LMPC/HJPT_AS LMPC HJPT Planning Table Autostart [page 21]**
- **Transaction /LMPC/HJPT LMPC Heijunka Planning Table [page 22]**
- **Transaction /LMPC/HJPT_2 LMPC HJPT Planning Table Without Popup Window [page 25]**
- **Transaction /LMPC/HJPT_3 LMPC HJPT Planning Table 1 Selection Screen [page 25]**

These transactions all start the LMPC HJPT planning table. However, they have different selection parameter entries.

There is also the /LMPC/HJPT program, which can be used to realize a nightly automatic planning run. Program /LMPC/HJPT Background Processing [page 26]

The individual call options are described briefly in the following chapters.

2.1.1 Notes on Runtime Behavior

The LMPC HJPT planning table is a detailed planning solution. The HJPT planning table is not intended to be used for rough-cut planning, long-term planning, or mass planning.

Standards for a Regular Planning Scenario:

- **The planning period stretches between a few weeks and a few months.**
- **The number of open work centers is below 20.**
- **The number of orders displayed is below 1000.**
- **The number of different materials in the orders is below 100.**

Data sets above these standard values can lead to long runtimes when you call the planning table.

It is important that you specify work centers for the data selection, to limit the number of orders that are loaded. It is possible to make a selection with only the plant specified, but this is not recommended. Long runtimes for a plant selection are not a runtime problem; this is normal runtime behavior for large volumes of data.

> → Remember
>
> Various buffers are set up the first time the HJPT planning table is called each day. These are, for example, buffers for field information of the ALV Grid, buffers for ABAP program code, or buffers for database queries. The first call per day therefore takes longer than all subsequent calls.

Runtime Improvement

If runtime problems occur when you call the planning table, this usually has the following causes:

- The volume of data loaded is too large.
- There are customer enhancements in the system that impair the runtime.

The HJPT planning table has been optimized for runtime by programming.

Long runtimes when calling the HJPT planning table can be reduced by changing the configuration:

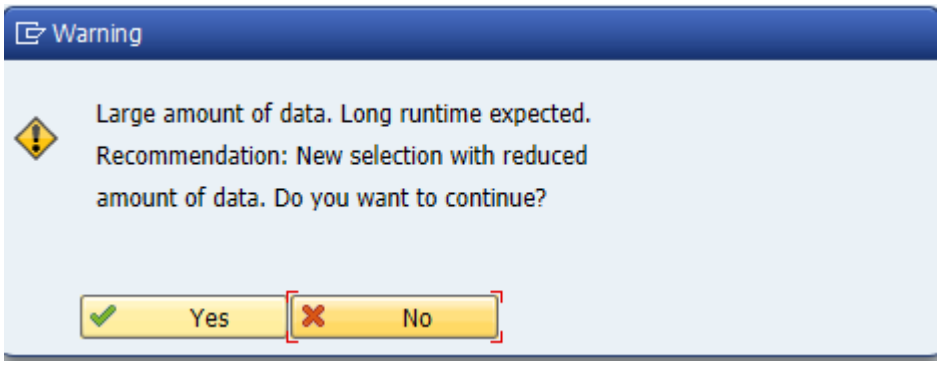
- Check whether the **parallelization** of the reading of data offers runtime advantages. This is deactivated in the standard delivery. If a large number of data records exist for each material in transaction MD04 (>1,000), parallel processing can bring a significant advantage. C16 Transaction /LMPC/STEU LMPC: Control Parameter
- Deactivate those HJPT **data providers** whose data is not required. The documentation describes in detail which data is provided by the individual data providers. LMPC HJPT Data Provider [page 432]
- Some data providers contain parameters to restrict the loaded data. Subareas of the data can be deactivated. C06 Transaction /LMPC/DPRO: HJPT Data Provider Configuration
- Check whether you want to use the **buffer for the MD04 data**. Buffer for MD04 Data [page 521]
- Keep additional **chart windows and evaluations** closed for the start of the planning table and open them only if necessary. Additional Windows [page 78]
- The **chart for the order relations** can cause very long loading times for large BOMs. Use the parameters to restrict the display of the data. C05 Transaction /LMPC/CUSTOREL: Settings for the List of Order Relations
- If the **graphic** is not required, it can be deactivated. This provides a small runtime advantage when loading and saving the data. HJPT Planning Table Without Graphic [page 26]
- **Coloring the bars** in the graphic and the **additional lines between the bars** costs runtime. Reduce the settings for this to a minimum.
  Coloring of Graphic Bars
  Connecting Lines Between Bars
  Instead of setting the coloring of the bars using HJPT Customizing, you can create your own profiles for the graphic and configure the coloring of the bars according to your requirements there. This eliminates the need for additional evaluation of rules for coloring the bars, which can be a runtime advantage. Guide Changing Bar Colors in the Graphic
- Reduce the **coloring of the ALV Grid**. Coloring fields and rows in the ALV Grid consumes a lot of runtime. Classic coloring consumes significantly less runtime than coloring with formulas. C07 and C08 Settings for Color Application in LMPC HJPT ALV Grid
- **Reducing the field catalog** for the ALV Grid can save runtime. Change ALV Grid Fields of HJPT Planning Table
- Define **groups of planners with the same planning requirements**. For each application scenario, create a separate HJPT overall profile that contains only the data that is required for the respective use case. A profile that covers all planning requirements may contain a planning period that is too large or a data selection that is too extensive. Configuration of HJPT Overall Profile

- Use the **work center filter** and the filter functions in the ALV Grid carefully. It is inefficient to first load all data of a plant and then use the work center filter to restrict the data records to a single work center S_WPFLT Work Center Filter [page 418]. Instead, create variants for the transaction and open the planning table with only a few selected work centers that are actually needed for the current planning session. Transaction /LMPC/HJPT LMPC Heijunka Planning Table [page 22]
- In the standard delivery, **saving** is configured in such a way that runtime is saved. Check whether this setting is set and, if not, whether you do not need to reload the data completely. Configuration of HJPT Overall Profile
- If you want to save the data during planning to save intermediate statuses, use the **temporary save** function. This can be configured in such a way that it requires less runtime. S_SAVEI Save Temporarily [page 413]
- Reading and saving the data for **production or process orders** require significantly more runtime than for planned orders. If possible, plan with planned orders and convert them into production orders as late as possible.
- Reduce the **number of operations** in the orders. Each operation of the order is read and processed in scheduling. Do not use operations to transfer additional information to the respective order. Even operations that are not relevant for scheduling have a negative effect on runtime.
- Check and optimize your own **enhancements in the customer namespace**. LMPC Enhancement Options

> **Note**
>
> In case of runtime problems, you can open a ticket and request an analysis for a runtime check (LMPC Troubleshooting [page 576]).
>
> LMPC Consulting Support will then check what causes the runtime problems and provide information about how to avoid runtime problems. Sometimes runtime issues can only be reduced if the settings or the planning processes are changed. However, the support for changing settings and planning processes is not a service provided by LMPC Consulting Support, but by consulting.

Maximum Data Volume

The HJPT planning table has a built-in check on the loaded data volume. If you call it with a data volume that is larger than the recommended maximum data volume of 4,000 data records, a warning is displayed.

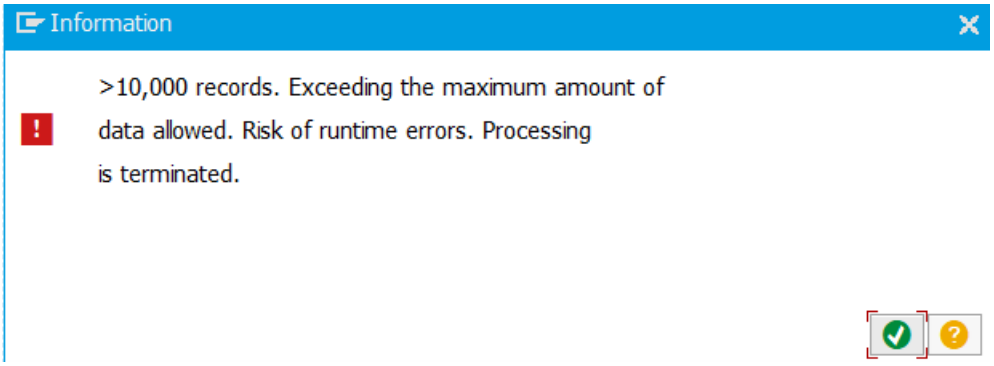


Warning Large Volume of Data

This warning informs the user that they are outside the maximum recommended volume of data for planning in the HJPT planning table. Long runtimes are expected with this volume of data.

If this message appears, a reduction in the volume of data is indicated by adjusting the selection. LMPC consulting can help you create an optimum planning scenario.

The maximum volume of data allowed for processing is 10,000 data records. If the maximum volume of data allowed is exceeded, runtime errors can occur. If the volume of data loaded exceeds this number, a message appears and processing is terminated.



Termination Message

You can use the Customizing settings for the control table to deactivate the warning message and the termination if the permitted maximum quantity is exceeded. However, this is not recommended. Rather, the planning scenario should be adjusted. C16 Transaction /LMPC/STEU LMPC: Control Parameter

> ⚠ Caution
>
> There is a strict restriction on data for production or process orders. A maximum of 4,000 data records for production or process orders can be loaded into the planning table. If more data is read, a runtime error occurs. For more information, see SAP Note 39248.
>
> There is also a strict restriction with regard to the total number of shifts loaded, that is, a maximum number of time windows with and without a capacity offer across all work centers. If the number 9999 is exceeded, a runtime error also occurs.
>
> If runtime errors occur, the loaded dataset must be reduced by adjusting the selection or by restricting the planning period.

Notes on Runtime Behavior of LMPC HJPT Action Codes

The LMPC HJPT planning table is a detailed scheduling planning board. It is not intended for orders to be mass processed.

If you use action codes to process one or a few operations, processing will be very quick. In the HJPT planning table, there is no restriction on the number of processed data records. In theory, you could put all open operations into one function.

If a very large number of operations are transferred to a function, long runtimes may occur.

This is not an error; it is due to the fact that a very large number of operations are being processed.

It is not possible to improve the runtime behavior of individual functions since it is always ensured that the functions are created in a way that optimizes runtime.

If you want to plan a large number of operations at once, we recommend that you execute this in the background using a program. Program /LMPC/HJPT Background Processing [page 26]

2.1.2 Transaction /LMPC/HJPT_AS LMPC HJPT Planning Table Autostart

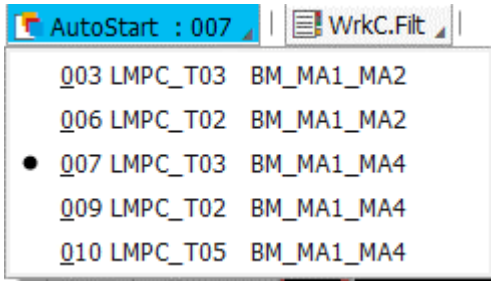
HJPT Planning Grid Start with One Click

This is the transaction for automatic starting the LMPC planning table. The planner can access the HJPT planning table without entering selection parameters.

You can only use this transaction if you have defined user variants for the autostart in Customizing. The planning table always opens with the variant that is stored as the autostart variant.

In the autostart variants, you can define the HJPT overall profile, the selection variant, the time profile, and the ALV Grid layout for the HJPT planning table.

When transaction /LMPC/HJPT_AS is called, an additional button appears in the menu bar of the ALV Grid; this button can be used to select the autostart variants.



Select Autostart Variants

The button displays an icon, the descriptive text AutoStart, and the number of the selected variant. The display can be adjusted using settings in Customizing. S_HJPTAS Configuration: Adjust Autostart Button

The dropdown menu for the button contains the available variants. The current variant is indicated by a black dot. The name of the variant consists of the sequence number of the entry, the HJPT overall profile used in the variant, and a short description. If no short description is defined in the settings for the autostart, the short description of the transaction variant of transaction /LMPC/HJPT is displayed in the logon language. If no short description is maintained for the relevant variant, the technical variant name is displayed. Since only a maximum of 40 characters can be displayed, the short description may be truncated. You can use settings to deactivate the output of the HJPT overall profile so that there is enough space for the output of the complete short description. S_HJPTAS Configuration: Adjust Autostart Button

> ⓘ Note
>
> When you switch to another variant, all data is reloaded. In the case of unsaved data, the system issues a warning to the user that changes have not been saved. The user then has the option of discarding or saving the unsaved changes. If the data is discarded, the system switches to the selected variant. If you choose Save, the system does not automatically switch to the selected variant. The data of the currently selected autostart variant is saved. After saving the data, the user can switch to another variant.

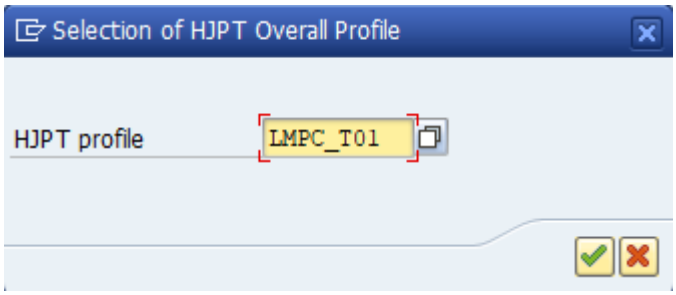
The settings for the auto start variants are described in the LMPC Configuration Guide.C02 Transaction /LMPC/AS_CUST, M04 Transaction /LMPC/AS_CUSTS: LMPC HJPT Planning Table Autostart

2.1.3 Transaction /LMPC/HJPT LMPC Heijunka Planning Table

Standard transaction for calling the HJPT planning table

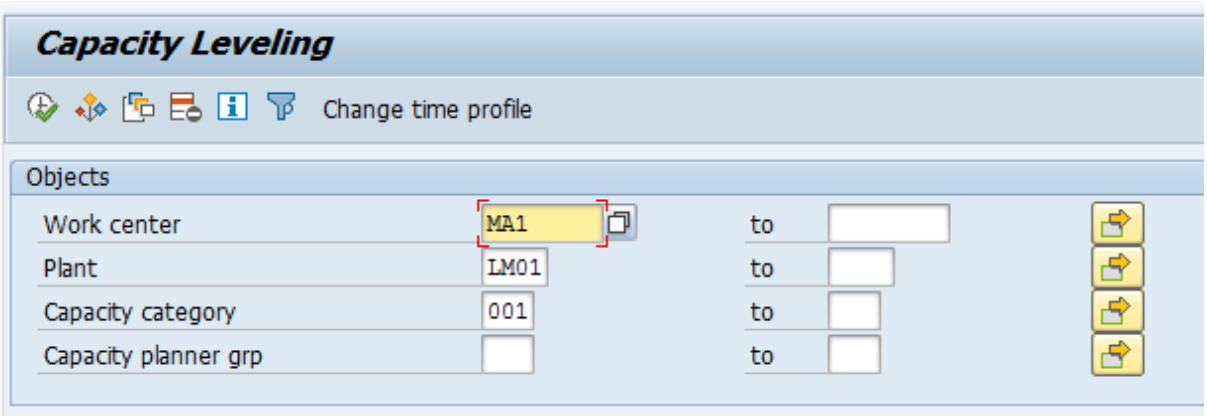
Transaction /LMPC/HJPT is the standard transaction for opening the LMPC HJPT planning table by entering selection parameters.

During the call, a popup appears for the selection of the overall HJPT profile.



Selection Overall HJPT Profile

You maintain the selection criteria on the following selection screen.



Selection Screen

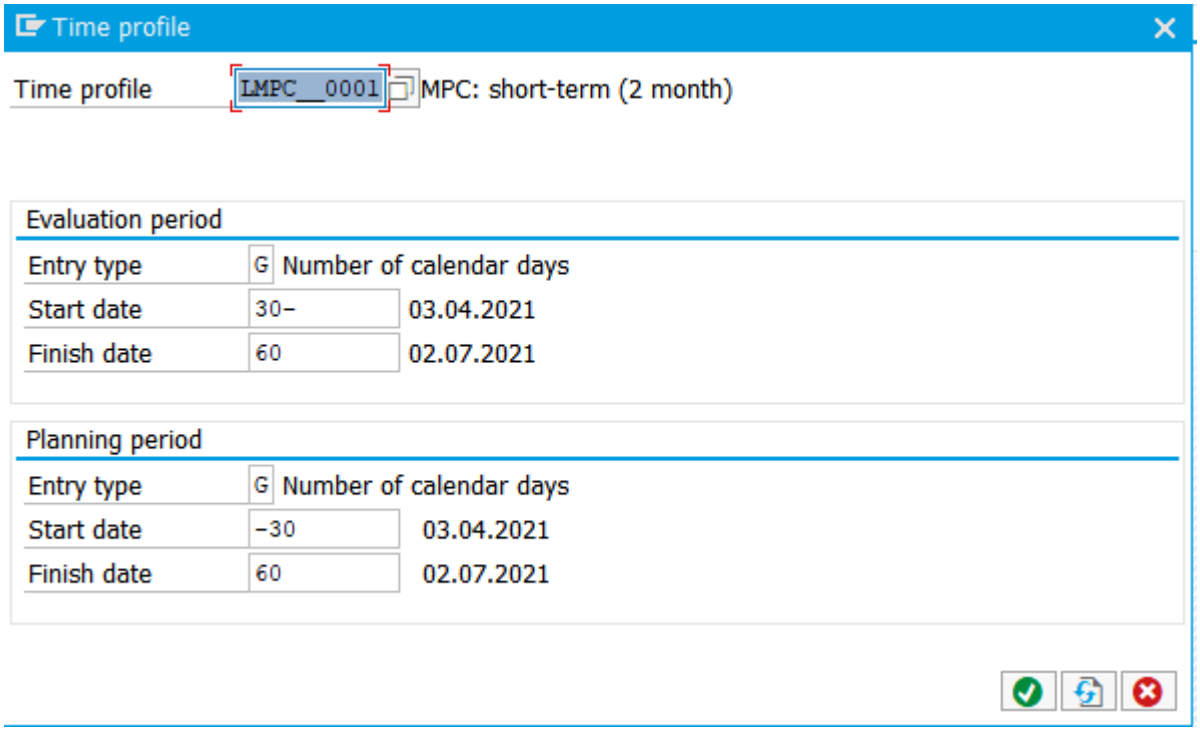
A work center and the plant should be specified. At least one of these two parameters must be specified. You can use the optional fields capacity category and planner group to further restrict the selection.

> ⚠ Restriction
>
> You can use the settings for the capacity planning table to change the fields of the selection screen. All functions of the HJPT planning table have been aligned with the selection screens that are delivered with the LMPC test profiles. If other selection fields are used, the consulting solution may not work correctly. Therefore, you should avoid changing the selection screen. Errors that occur due to a change to the selection screen are not within the remit of LMPC Consulting Support.

You can save variants for the selection screen. This allows you to predefine selection settings for the user. This makes it easier to select the data. Variants can also be used for background processing in the program /LMPC/HJPT. Program /LMPC/HJPT Background Processing [page 26]

Time Profile

From the selection screen, you can branch to the settings for the time profile. The time profile is assigned to the overall profile used for capacity evaluation and is prefilled automatically. It determines the evaluation period and the planning period for the data.



Select Time Profile and Change Settings

The **evaluation period** is the period for which the data is read.

The **planning period** is the period in which the data can be changed. Note that orders can never be dispatched in the past. However, it is possible to deallocate orders that are in the past and reschedule them into the future.

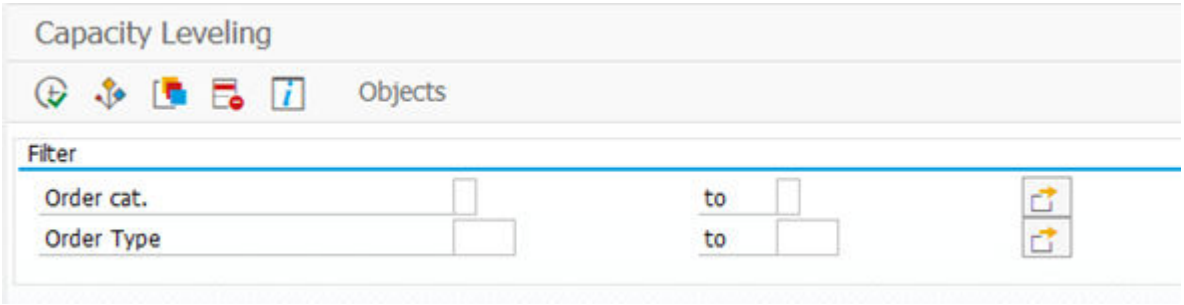
You can select a different time profile or change the evaluation or planning period manually. The manual changes to the periods are only valid for this one call of the planning table. They are not stored in the time profile. If you want to permanently change the settings for the time periods, you need to adjust the Customizing of the time profile.

→ Remember

- It is possible to define a period in which dispatching is not allowed. If, for example, you define the planning period so that it does not start until 14 days in the future, the earliest point at which you can dispatch is two weeks from today. This allows you to prevent replanning in a certain period. You cannot prevent deallocation in this period, only repeated dispatching.
- You can use a user parameter to store a separate time profile for each user. Also see the description of the user parameters in the LMPC Configuration Guide. Default Time Profile

Filters

The selection screen contains a button for filter settings. The data read can be restricted using two criteria: order category and order type.



Filter Criteria

The following filters are possible:

- If 1 is entered in the order category, all planned orders are filtered out. All capacity requirements for orders that are not planned orders remain.
- If 2 is entered in the order category, all production orders and process orders are filtered out. All capacity requirements for orders that are not production or process orders remain.
- If 1 is entered in the order category, all orders that are not planned orders remain. The orders can then also be filtered by the order type for production orders and process orders.
- If nothing is entered in the order category and an order type is specified, all planned orders are displayed plus the production orders or process orders that belong to the specified order type.

> ⚠ Restriction
>
> - It is possible to save the selected filter settings in the variant. However, when you call the variant from the selection screen, the saved filters only take effect if you navigate to the screen for the filter before you call the planning table.
> - It is possible to set fields other than these for the filters. However, it cannot be guaranteed that other fields will work. G02 Transaction /LMPC/OPD1: Selection Profile
> - You are not recommended to use filters because the capacity commitment may be displayed incorrectly. If you us filters, there is a risk that data records are incorrectly excluded even though they use capacity. For example, when filtering planned orders, dispatched planned orders could also be filtered out, which means that the assignment of the capacity by these planned orders is not displayed. As a result, production orders may be dispatched at times that are already occupied by planned orders, which can lead to multiple assignments. Instead of using filters on the selection screen, you should use the filter function of the ALV Grid. ALV Grid [page 65]

Calling the Planning Table

To go from the selection screen to the capacity planning table, choose *Execute* or F8 or the Enter key. This takes you to the enhanced graphical planning table.

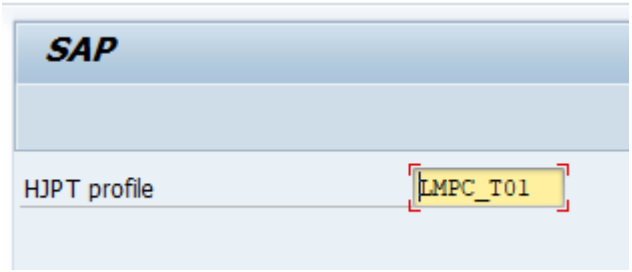
> → Tip
>
> If the work center entered is a node work center of a work center hierarchy, all work centers that are below this node in the hierarchy are opened. The prerequisite for this is that you have defined a work center hierarchy and have set the explosion of the work center hierarchy in the evaluation profile. For details on configuring the hierarchy explosion, see the LMPC Configuration Guide. Use of Work Center Hierarchies in the HJPT Planning Table

2.1.4 Transaction /LMPC/HJPT_2 LMPC HJPT Planning Table Without Popup Window

Call HJPT Planning Table - No Popup Window

Transaction /LMPC/HJPT_2 has the same input fields as transaction /LMPC/HJPT with the only difference that the HJPT overall profile is queried in a full window and not in a popup window.

The selection fields are queried on two separate screens. First the overall profile, then the other selection criteria.

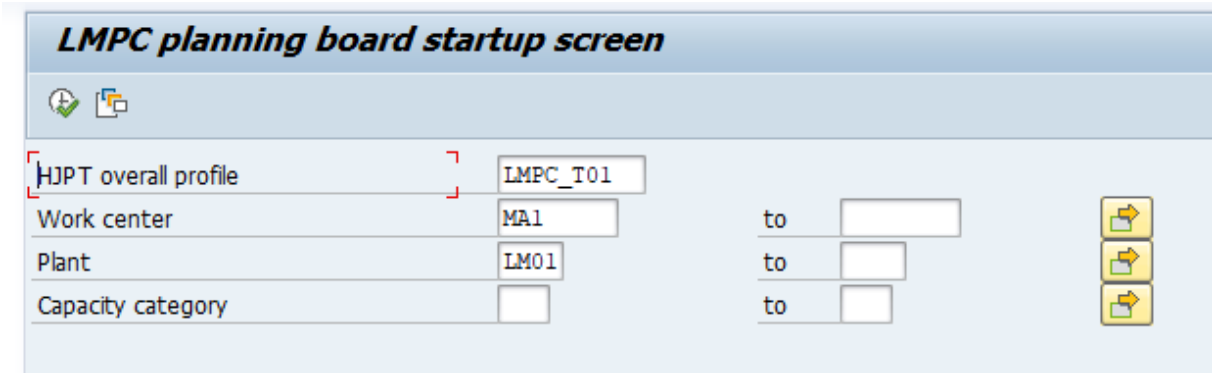


HJPT Overall Profile Selection in Transaction /LMPC/HJPT_2

2.1.5 Transaction /LMPC/HJPT_3 LMPC HJPT Planning Table 1 Selection Screen

Call HJPT Planning Table - All Input Fields on One Screen

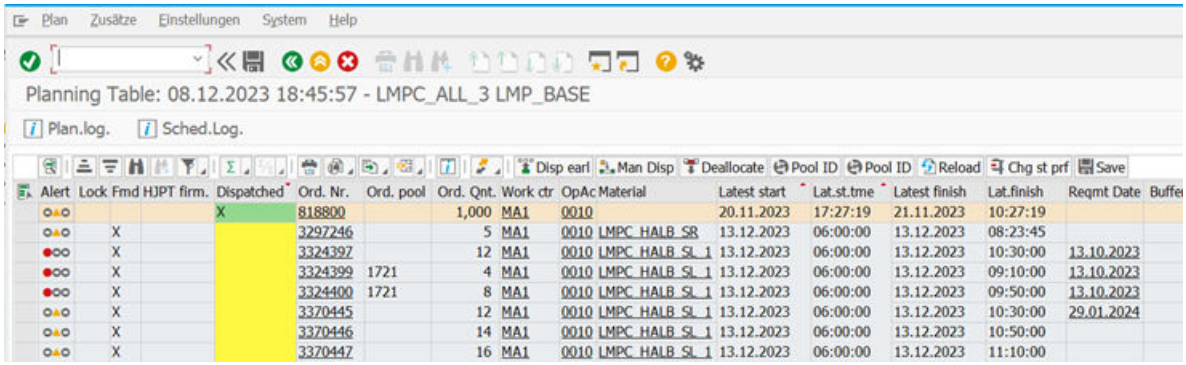
Transaction /LMPC/HJPT_3 has the same input fields as transaction /LMPC/HJPT with the only difference being that all input fields are displayed in a window.



Selection Screen /LMPC/HJPT_3

It is not possible to change the time profile or enter filter criteria.

2.1.6 HJPT Planning Table Without Graphic



Alert	Lock	Fmd	HJPT firm.	Dispatched	Ord. Nr.	Ord. pool	Ord. Qnt.	Work ctr	OpAc	Material	Latest start	Lat.st.tme	Latest finish	Lat.finish	Reqmt Date	Buffe
				X	818800		1,000	MA1	0010		20.11.2023	17:27:19	21.11.2023	10:27:19		
	X				3297246		5	MA1	0010	LMPC_HALB_SR	13.12.2023	06:00:00	13.12.2023	08:23:45		
	X				3324397		12	MA1	0010	LMPC_HALB_SL_1	13.12.2023	06:00:00	13.12.2023	10:30:00	13.10.2023	
	X				3324399	1721	4	MA1	0010	LMPC_HALB_SL_1	13.12.2023	06:00:00	13.12.2023	09:10:00	13.10.2023	
	X				3324400	1721	8	MA1	0010	LMPC_HALB_SL_1	13.12.2023	06:00:00	13.12.2023	09:50:00	13.10.2023	
	X				3370445		12	MA1	0010	LMPC_HALB_SL_1	13.12.2023	06:00:00	13.12.2023	10:30:00	29.01.2024	
	X				3370446		14	MA1	0010	LMPC_HALB_SL_1	13.12.2023	06:00:00	13.12.2023	10:50:00		
	X				3370447		16	MA1	0010	LMPC_HALB_SL_1	13.12.2023	06:00:00	13.12.2023	11:10:00		

HJPT Planning Table Without Graphic

When you call the HJPT planning table, you do not have to display the graphic. Then, only the data is displayed in the ALV Grid. The position of the orders on a time line is not visible. With this setting, the HJPT planning table can be used as a purely tabular planning table.

This type of call of the planning table can be used with each of the HJPT transactions:

- Transaction /LMPC/HJPT LMPC Heijunka Planning Table [page 22]
- Transaction /LMPC/HJPT_2 LMPC HJPT Planning Table Without Popup Window [page 25]
- Transaction /LMPC/HJPT_3 LMPC HJPT Planning Table 1 Selection Screen [page 25]
- Transaction /LMPC/HJPT_AS LMPC HJPT Planning Table Autostart [page 21]

> → Tip
>
> Omitting the graphic has a small runtime advantage, since the graphical objects do not have to be generated.

When called without the graphic, the functions of the graphic menu bar are not available.

The planning table log and the scheduling log can be accessed using additional buttons above the toolbar of the ALV Grid.

The graphic is hidden using the settings for the HJPT overall profile. Configuration of HJPT Overall Profile

2.1.7 Program /LMPC/HJPT Background Processing

Execute the HJPT Planning Table Using a Job in the Background

You can use the program /LMPC/HJPT to apply an action code to all data records of the selection.

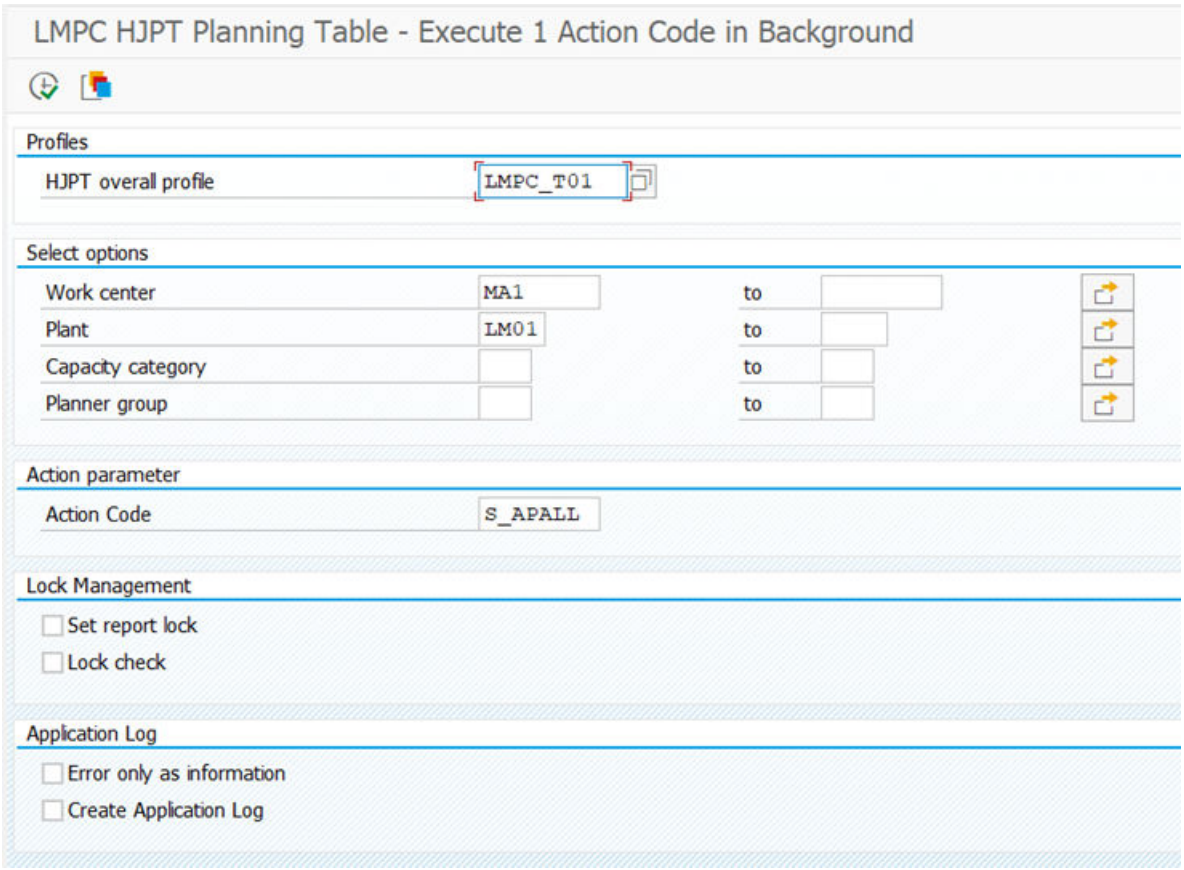
This enables mass processing of orders.

The program can be used, for example, to execute a nightly automatic planning run.

After the job for creating new orders has run with the MRP run, the newly generated orders can then be dispatched automatically, for example.

The next day, the planner has a finished production plan and can fine-tune the planning manually.

This helps to reduce planning effort.



Selection Screen Program /LMPC/HJPT

When the program is executed, all operations that are opened by the HJPT planning table are processed.

Before the transfer to the action code, the operations are sorted according to work center and start times of the capacity requirements.

In contrast to dialog processing, the data records in background processing are not sorted according to the sort settings of the ALV Grid layout. Therefore, if you want the operations to be processed in a specific sequence, use action codes that have their own sort routine for operations.

> → Tip
>
> For the action code S_EPSRT, you can use parameters to sort the data records before dispatching. S_EPSRT Sorted Dispatching [page 217]
>
> You can use the action code S_SETSEL to select and sort data records before they are transferred to other functions. This enables sequencing and restriction of the processed data records. However, this only works with functions that are prepared for concatenation with S_SETSEL. Concatenation with S_SETSEL [page 426]

The function for the limitation of action codes can be implemented to restrict the data records processed. Action Code Limits [page 104]

Chains of action codes can be used when calling the action codes in background processing. For details and limitations when using action code chains, see the section on chaining action codes. Concatenating Action Codes [page 422]

Only some of the HJPT action codes are suitable for background processing. The following action codes can be used in background processing.

- S_APALL Deallocate All Operations [page 181]
- S_APSC Deallocate via Status Change Without Scheduling [page 182]
- S_APSCG Deallocate Selected Operations and Close Gaps [page 183]
- S_APSEL Deallocate Selected Operations [page 185]
- S_APSELP Deallocate with Pool ID [page 295]
- S_BOMEXP Bill of Material Explosion and Component Quantity Update for Planned Orders [page 123]
- S_CHSDV Change Standard Values [page 128]
- S_CRCLOR Create LMPC Cleaning Orders [page 138]
- S_EPALL Dispatch All Operations [page 192]
- S_EPBKFG Two-Step Dispatching with Pool ID [page 300]
- S_EPFX Dispatching Across Firmed Operations [page 328]
- S_EPML Multilevel Planning [page 323]
- S_EPMSQ Dispatching According to Material Master Field [page 198]
- S_EPPRLL Parallel Planning with Parallel Sequences [page 287]
- S_EPRQD Dispatch on Requirement Date [page 205]
- S_EPRSIN Insert Setup Optimum Operation [page 266]
- S_EPRST Dispatching Using Setup Matrix [page 264]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_EPTBSQ Dispatch by Table [page 222]
- S_FIX, S_FIXE Firm and remove firming of orders [page 395]
- S_FPL Dispatch by LMPC Timetable [page 223]
- S_LOCK Temporarily Lock Orders [page 402]
- S_OPL Optimized Dispatching [page 268]
- S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]
- S_OSC Optimum Adjustment of Setup Times [page 115]
- S_PBLKFG Pool formation with BOM information [page 296]
- S_POOLA Automatically Create Order Pool [page 291]
- S_RBPL Rule-Based Dispatching [page 240]
- S_RESCD Reschedule All [page 252]
- S_RESCPF Reschedule: HJPT Firming Indicator and Parallel Planning with Pool ID [page 333]

> **Note**
>
> Refer to the notes on runtime behavior in the section on calling the HJPT planning table. They are also valid for background processing.
>
> Call LMPC HJPT Detailed Scheduling Planning Table [page 17]

It is possible to activate a lock check that removes or terminates locked orders from the selection, if there are locked orders in the selection. In addition, a log can be created for each run.

For details on creating a background job with the program /LMPC/HJPT, see the LMPC Configuration Guide.Configuration: Program /LMPC/HJPT LMPC HJPT Planning Table in the Background

> **Restriction**
>
> LMPC background processing was created to execute functions in a nightly planning run. During the day, no background jobs should be executed to schedule operations because this can lead to locking conflicts.
>
> Orders cannot be planned by a production planner and a planning program at the same time.
>
> Planning functions of the production planner can terminate if locks are set by a background program. Similarly, two or more production planners should not work with the same data at the same time to avoid obstructing each other.
>
> Planned orders have the special feature that they cannot be completely locked against changes. The planning table has its own lock management for planned orders, but other programs and transactions in the SAP software may not take this lock management into account. Therefore, automatic jobs that change the data should also not run in parallel. Locking Mechanism for Changed Data [page 100]
>
> The program for background processing has various setting options to prevent lock conflicts. Configuration: Program /LMPC/HJPT LMPC HJPT Planning Table in the Background
>
> Locking conflicts are not errors, but an indication that the planning processes in the company need to be checked and changed.

2.2 HJPT Test Profiles

The standard LMPC delivery contains six test profiles, which can be used as a template for HJPT overall profiles in planning.

- LMPC_T01 [page 30]
- LMPC_T02 [page 32]
- LMPC_T03 [page 33]
- LMPC_T04 [page 34]
- LMPC_T05 [page 35]
- LMPC_T06 [page 36]
- LMPC_T07 [page 40]
- LMPC_T08 [page 44]
- LMPC_T09 [page 48]

→ Remember

These test profiles contain sample profiles for the capacity planning table. These profiles are only examples that must be adjusted in the customer system to the specific requirements of the customer. It is recommended that you use these test profiles as templates for your own profiles.

LMPC consulting can support you in creating individual profiles.

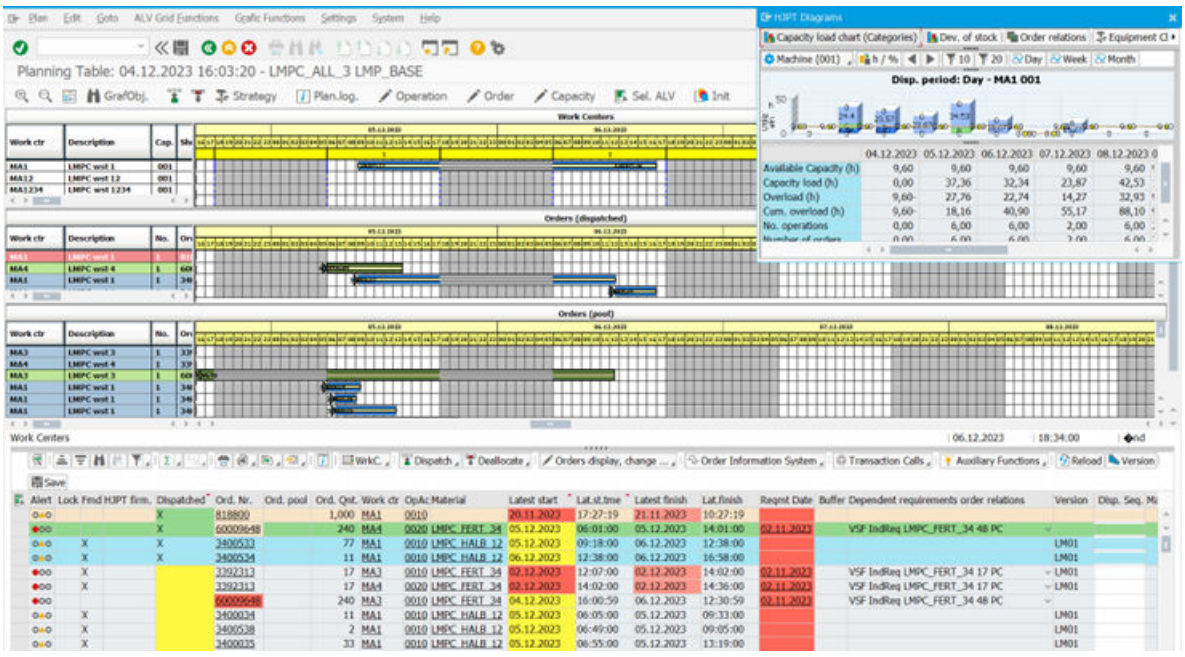
The sample profiles were created for planning with the latest point in time. The bars of the operations display the latest dates of the capacity requirements. For further information on the earliest and latest dates, see the following section: Layout Groups [page 68]

⚠ Restriction

- The test profiles of the capacity planning table for LMPC have been created for LMPC and the HJPT planning table. They have been aligned exactly with this consulting solution. These profiles must not be used in other consulting solutions or other SAP applications.
- Profiles of the capacity planning table are Customizing settings. LMPC Consulting Support does not check any settings in your system. If you want to change or check the profiles you use, this is a service provided by LMPC Consulting.

2.2.1 LMPC_T01

HJPT Test Profile LMPC_T01



Test Profile LMPC_T01

The HJPT overall profile LMPC_T01 is the standard template for planning.

HJPT profile LMPC T01 is divided into three areas. It has an area for the capacity planning table (above). An area for the ALV Grid (below) and a range for the window for charts (dialog box).

The heading of the graphic shows the following elements:

- The time when the data was last updated. Date and time. The data is updated when the application is called, saved, and reloaded.
- The technical name of the overall profile of the capacity planning table.
- The technical name of the strategy profile that is used in planning with drag and drop in the graphic.

The profile of the capacity planning table is set up such that there are three charts.

Chart 1 displays the open work centers. You can see at what time the operations at the work centers are dispatched.

Chart 2 displays a list of operations. It displays the dispatched operations in chronological order.

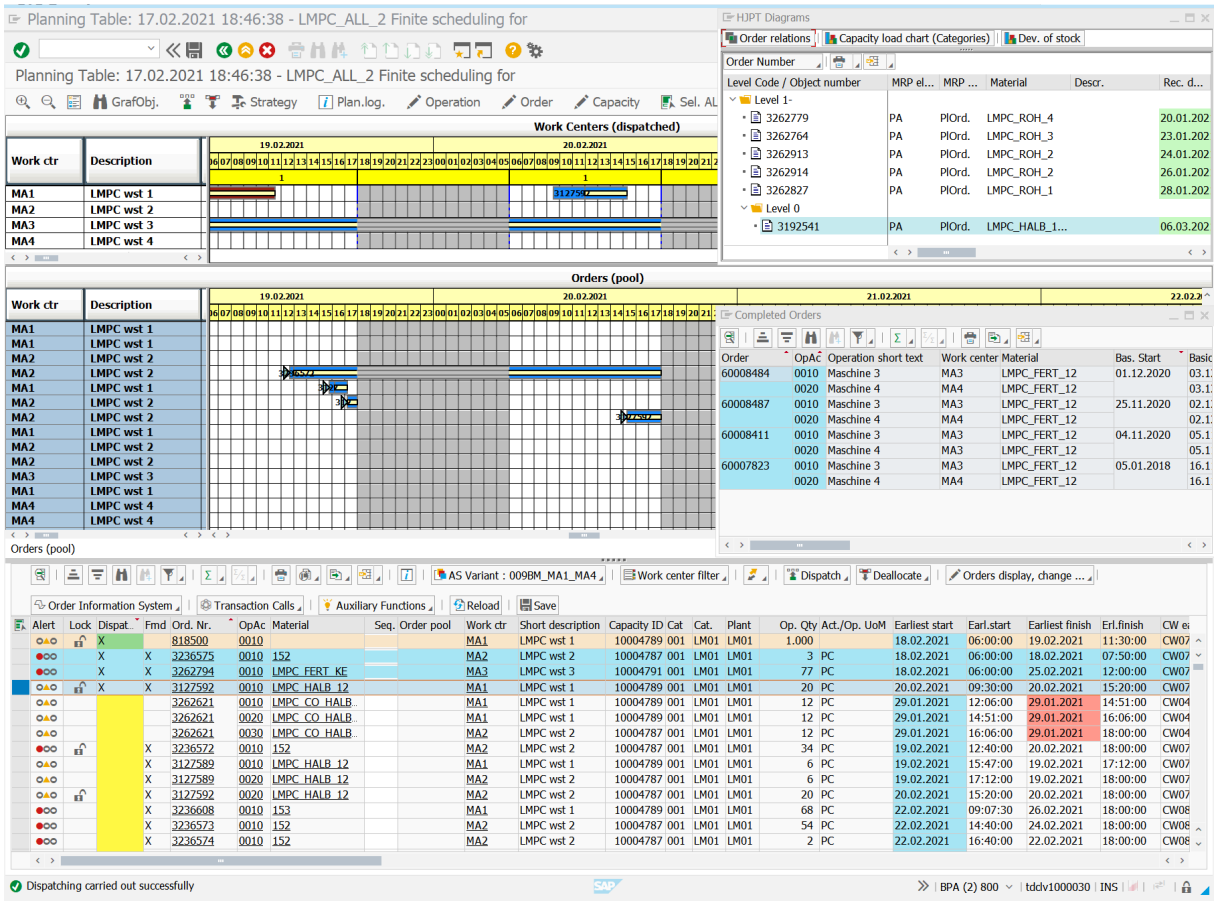
Chart 3 displays the order pool. The list of all open and not yet dispatched operations.

By dragging and dropping operations within the charts and across charts, orders can be dispatched, deallocated, and rescheduled. Bar Chart Menu Bar Functions [page 53]

When you open the window for charts it displays the capacity load graphically, supplemented with the ALV Grid of the capacity data. You can use the buttons to switch to the development of the stocking situation, the order relations, and the equipment check. Chart Window [page 79]

2.2.2 LMPC_T02

HJPT Test Profile LMPC_T02



Test Profile LMPC_T02

The HJPT overall profile LMPC T02 is divided into four parts. It has an area for the capacity planning table. An area for the ALV Grid, an area for the HJPT charts, and an area for the window for completed orders.

However, the profile of the capacity planning table is set up such that there are only two charts. The second chart from profile LMPC_T01 has been removed.

Chart 1 displays the open work centers. You can see at what time the operations at the work centers are dispatched.

Chart 2 displays the order pool. The list of all open and not yet dispatched operations.

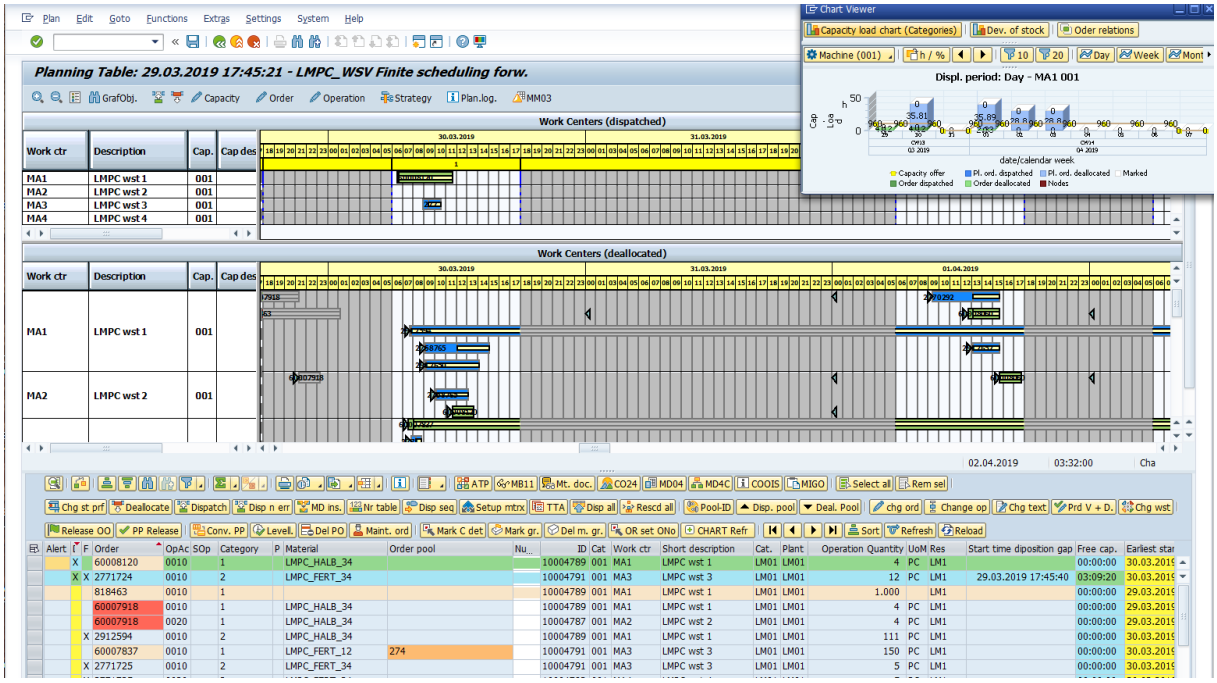
By dragging and dropping operations within the charts and across charts, orders can be dispatched, deallocated, and rescheduled. Bar Chart Menu Bar Functions [page 53]

The window for the charts displays the order relations when it is opened. You can use the buttons to switch to the capacity utilization or to the development of the stocking situation. Chart Window [page 79]

The window for completed orders displays information on orders that have been finally confirmed, completed, or technically completed. Window for Completed Production and Process Orders [page 97]

2.2.3 LMPC_T03

HJPT Test Profile LMPC_T03



Test Profile LMPC_T03

The HJPT overall profile LMPC_T03 is also a template for a planning profile.

The profile LMPC_T03 is also divided into three parts. It has an area for the capacity planning table. An area for the ALV Grid and an area for the window for the charts.

The capacity planning table is only divided into two charts here.

Chart 1 shows the work center view with all the operations that are dispatched to the respective work centers.

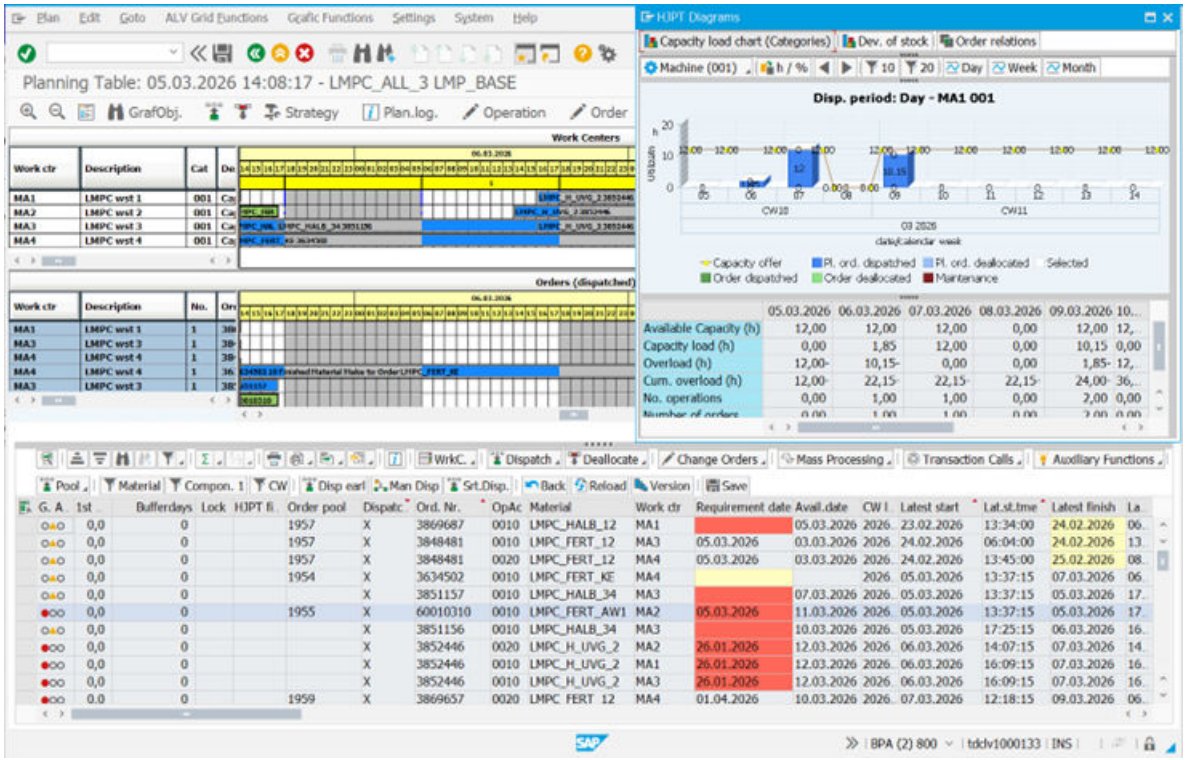
Chart 2 also shows the work center view, but with all operations that have been scheduled for the respective work centers but have not been dispatched. Two lines are displayed in chart 2 for each work center and capacity. The first line contains all operations that have been deallocated and that already have a status object. The second line contains all transactions that are new and do not have a status object. Once a planning activity has been executed with an operation, it is given a status.

Dispatching, deallocation, and rescheduling using drag and drop is also possible within the charts as well as across charts. It is only possible to reschedule an operation from one work center to another in the chart of the dispatched operations. It is possible to move operations in the pool of operations not yet dispatched, but only for the same work center. Then the operation in question is rescheduled. Bar Chart Menu Bar Functions [page 53]

The window for charts displays the development of the stocking situation when it is opened. You can use the buttons to switch to the capacity utilization or to the order relations. Chart Window [page 79]

2.2.4 LMPC_T04

HJPT Test Profile LMPC_T04



Test Profile LMPC_T04

The HJPT overall profile LMPC_T04 is a reduced test profile. It contains only selected HJPT functions. The configured functions can be used immediately without further adjustment.

This test profile enables an easy start with the HJPT planning board. Users can test LMPC functions without having to deal with customizing.

The profile LMPC_T04 is also divided into three parts. It has an area for the graphical planning board, an area for the ALV grid, and an area for the diagram window.

The graphical planning board is divided into three charts here, as in the test profile LMPC_T01 [page 30].

By dragging and dropping operations within the charts and across charts, orders can be dispatched, deallocated, and rescheduled. Bar Chart Menu Bar Functions [page 53]

Graphic Bars

The graphic bars are labeled.

In chart 1, the material number and the order number are displayed on the bars.

In charts 2 and 3, the order number, operation number, material short text, and material number are displayed on the bars. Bar Chart Bar Label [page 50]

An additional coloring of the graphic bars was defined for the profile, which overrides the standard coloring. Partially confirmed process orders are colored yellow. As in the other profiles, process orders are colored green, and planned orders are blue. Coloring of Bars of the Bar Chart [page 50]

Fields in the ALV Grid

The **ALV Grid layout /LMPC_T04** was created for the HJPT overall profile LMPC_T04.

The selected fields are typically used by customers in discrete manufacturing.

The layout was defined as the standard layout in the settings for the overall profile. As a result, the layout is used each time the HJPT planning table is called. If different layouts are to be used for the user, this fixed assignment of the profile must be removed. Parameter Settings for the HJPT ALV Grid

There is a coloring for the fields of the ALV Grid that is designed differently than the coloring in the test profiles LMPC_T01 to LMPC_T03. For details, see the sections on coloring the ALV Grid.

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

Action Codes

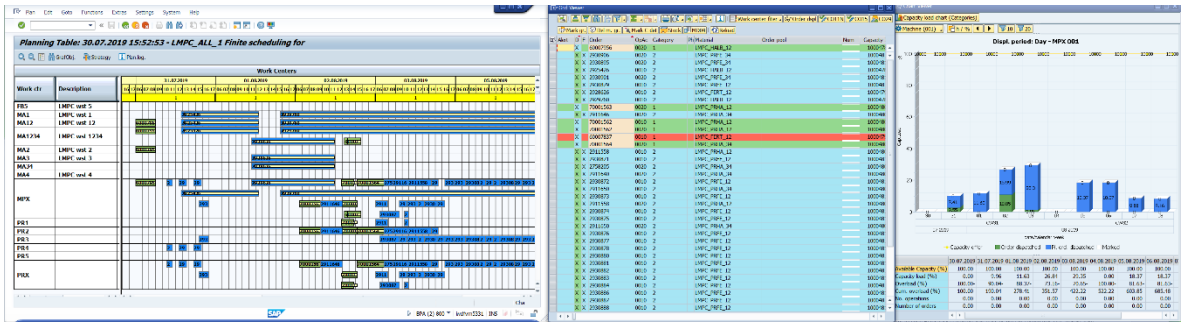
This profile contains a reduced selection of action codes. These are the most commonly used action codes at customers.

Window for diagrams

The window for diagrams displays the capacity utilization graphically when opened, supplemented by the ALV grid of capacity data. Using the buttons, you can switch to the inventory history, and to the order links. Chart Window [page 79]

2.2.5 LMPC_T05

HJPT Test Profile LMPC_T05



Test Profile LMPC_T05

The HJPT overall profile LMPC_T05 is a pure display profile.

You cannot use the settings for this profile to perform planning operations. Planning using drag and drop is not possible here. Otherwise, no changes can be made to the operations.

For example, the profile can be used as a template for a production monitor in manufacturing.

The HJPT profile LMPC_T05 is also divided into three parts. It has an area for the capacity planning table. An area for the ALV Grid and an area for the window for the charts. All three elements are displayed separately on separate screens. This setting is a view for a wide monitor or a view with 2 or 3 monitors.

The profile of the capacity planning table is set up such that there are only two charts. The work center view of the dispatched operations and operations that have not been dispatched.

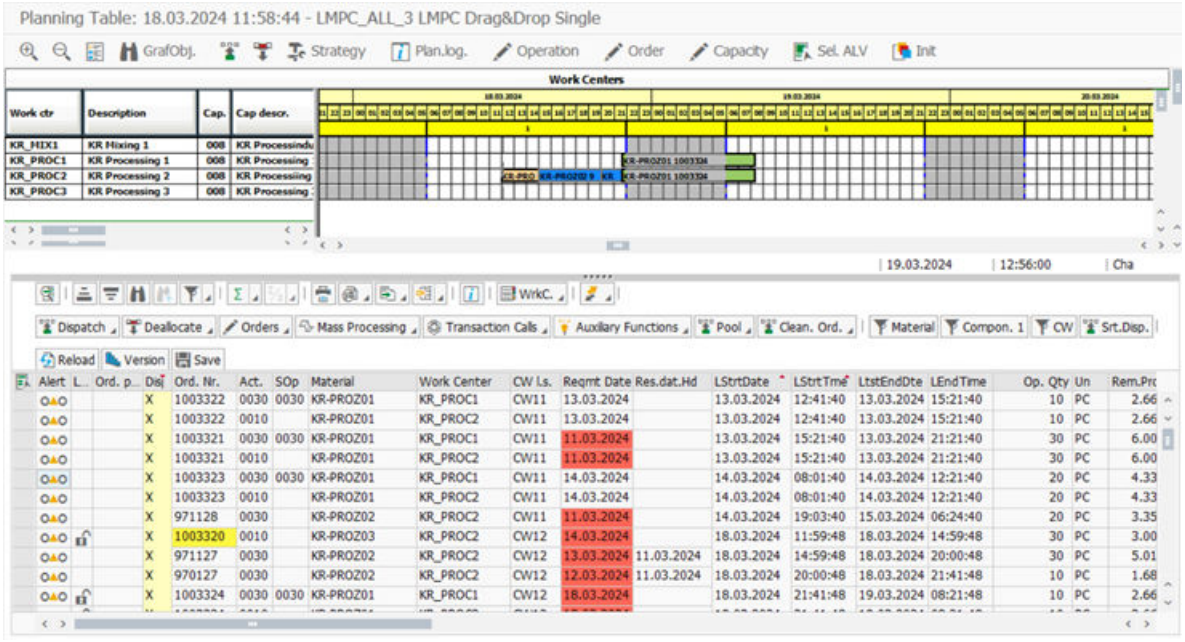
The window for charts displays only the capacity utilization. Capacity requirements from the past are added to the current day to be able to identify the backlogs in production. The other charts are hidden. Chart Window [page 79]

The data is refreshed automatically every 180 seconds.

> → Tip
>
> Above the ALV Grid there is a button for saving. This function is used to save the position of the windows, since when you save, the planning table remembers the size and position of the windows.

2.2.6 LMPC_T06

HJPT Test Profile LMPC_T06



Test Profile LMPC_T06

The HJPT overall profile LMPC_T06 is a test profile for the process industry (PI).

The HJPT overall profile LMPC T06 is based on the HJPT overall profile LMPC T01. The graphic also consists of three charts.

Graphic Bars

The graphic bars are labeled.

In chart 1, the material number and the order number are displayed on the bars.

In charts 2 and 3, the order number, operation number, material short text, and material number are displayed on the bars. Bar Chart Bar Label [page 50]

An additional coloring of the graphic bars was defined for the profile, which overrides the standard coloring. Partially confirmed process orders are colored yellow. As in the other profiles, process orders are colored green, and planned orders are blue. Coloring of Bars of the Bar Chart [page 50]

Fields in the ALV Grid

The **ALV Grid layout /LMPC_PI_1** was created for the HJPT overall profile LMPC_T06.

The selected fields are typically used in process planning.

The layout was defined as the standard layout in the settings for the overall profile. As a result, the layout is used each time the HJPT planning table is called. If different layouts are to be used for the user, this fixed assignment of the profile must be removed. Parameter Settings for the HJPT ALV Grid

There is a coloring for the fields of the ALV Grid that is designed differently than the coloring in the test profiles LMPC_T01 to LMPC_T05. For details, see the sections on coloring the ALV Grid.

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

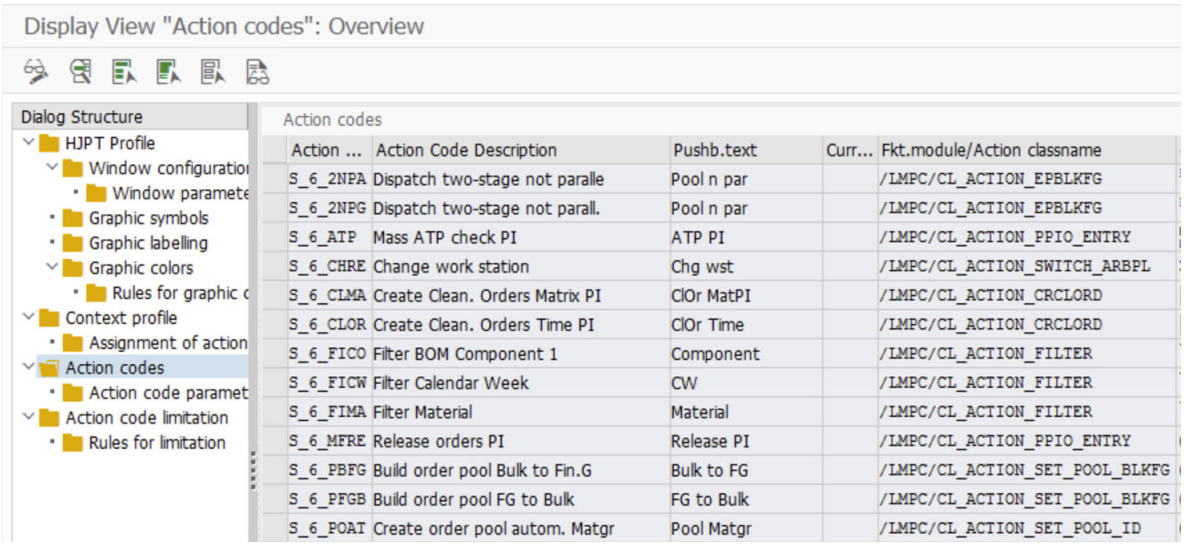
Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

Action Codes

The profile contains a series of action codes that are often used in the planning processes in the process industry.

Action codes that have been configured specifically for this profile are all based on the standard S_* action codes. The action codes have been configured in such a way that companies from the process industry can easily access the functions.

Action codes configured specifically for this profile all start with S_6_*.



Action Codes for Test Profile LMPC_T06

If the settings allow, these action codes can also be used for discrete manufacturing.

Double-Click on Fields

The action code with which a function is called by double-clicking on individual fields of the ALV Grid has been configured differently for this profile than in the test profiles LMPC_T01 to LMPC_T05.

The function is executed with a double-click and not with a hotspot click. The description of the configured functions can be found in the section on double-clicking. S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

Filter Functions

Since one or more BOM components are often relevant for sequencing or the adjustment of production quantities in the process industry, 3 preset filters have been added to the ALV Grid menu to improve usability:

- S_6_FICO: Quick Filter for BOM Components
- S_6_FICW: Quick Filter for Calendar Week
- S_6_FIMA: Quick Filter for Material

S_FILTR, S_FILTRE Set and Remove Filters [page 388]

Selection Menu for Pool Planning

For the profile LMPC_T06, a dropdown button was created for planning with a pool ID in which action codes that support planning with a pool ID were grouped.

The pool ID function is used to group planned orders and process orders. These groups of orders can be dispatched with different planning functions.

Campaign Planning

Simple pool formation for orders in campaign planning can be performed using manual selection in the ALV Grid and the action code “Create Order Pool Manually”. S_POOLID Create Order Pool Manually [page 290]

As an alternative, you can use the action code “Pool Formation by Material Group” to group all selected orders with the same material group in an order pool. Instead of the material group, other ALV Grid fields can also be used for pool formation. This requires a corresponding adjustment to the configuration of the action code “Automatic Pool Formation”. S_POOLA Automatically Create Order Pool [page 291]

If certain orders are always to be planned together on one or different resources – in terms of campaign planning – dispatching using the “Single-Level Dispatching Pool” action code is possible. When you select at least one operation with a pool ID, all other operations of this pool are also dispatched. S_EPSELP Single-Level Dispatching with Pool ID [page 293]

Afterwards, the setup times can be adjusted using the setup matrix. S_AVRU Adjust Setup Time Automatically [page 111]

After dispatching, cleaning orders can also be created using the transition matrix. Creation of cleaning orders during material group transitions [page 140]

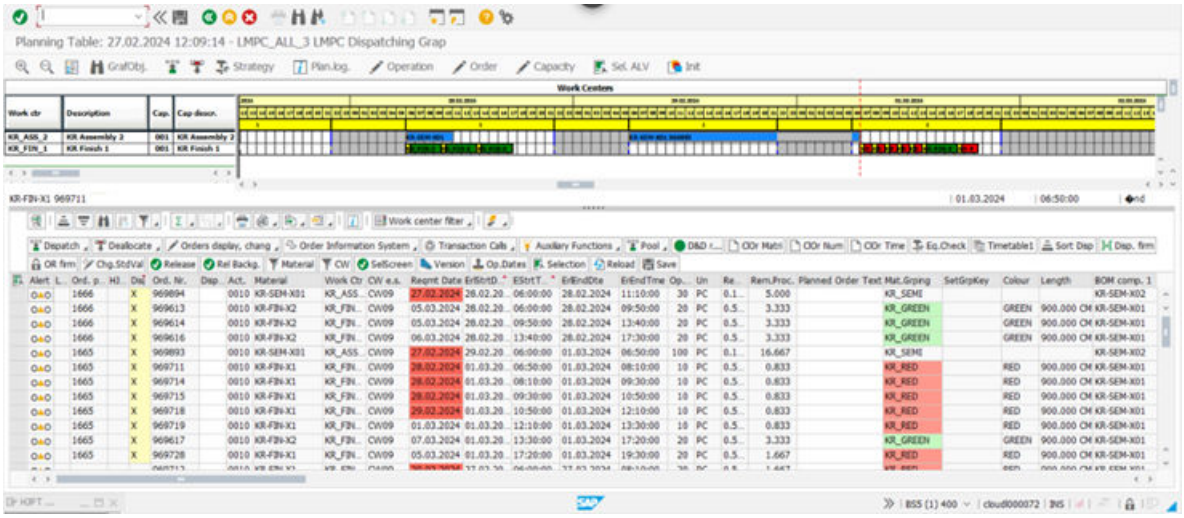
Linking Two BOM Levels

Some production processes require a strong link between two production levels.

This can mean, for example, that after the production of a product in a mixed resource (first level), the product is to be filled into different packaging units (second level) directly afterwards. In this case, the time interval between the two production stages should ideally be as small as possible in order not to block the mixed resource for an unnecessarily long time or to carry out the filling as quickly as possible for process-related reasons.

Alternatively, it may be necessary for the production of the two production levels to be dispatched in parallel because, for example, packaging takes place almost parallel to production.

If it is necessary to block the resource of the first-level product (for example a mixed resource) during the production of the second-level product, this can be done with an operation of the second-level product that uses the resource of the first-level product as a secondary resource (suboperation).



Planning Using Two BOM Levels

For two-level planning, the following action codes are assigned in the selection menu for pool planning:

- S_6_PBFG: Two-Level Pool Formation 1st Level -> 2nd Level
- S_6_PFGB: Two-Level Pool Formation 2nd Level -> 1st Level
- S_6_2NPA: Two-Step Dispatching with Pool ID for PI Not Parallel
- S_6_2NPG: Two-Step Dispatching with Pool ID for PI in Parallel

S_PBLKFG Pool formation with BOM information [page 296]

S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

Selection Menu Cleaning Orders

In the process industry, it is often necessary to perform cleaning or maintenance on the installation after a certain time interval or after a product change. For this, LMPC cleaning orders can be created automatically in the HJPT planning table . LMPC cleaning orders are process orders without header material that occupy capacity for non-producing activities such as cleaning or tool changes. S_CRCLOR Create LMPC Cleaning Orders [page 138]

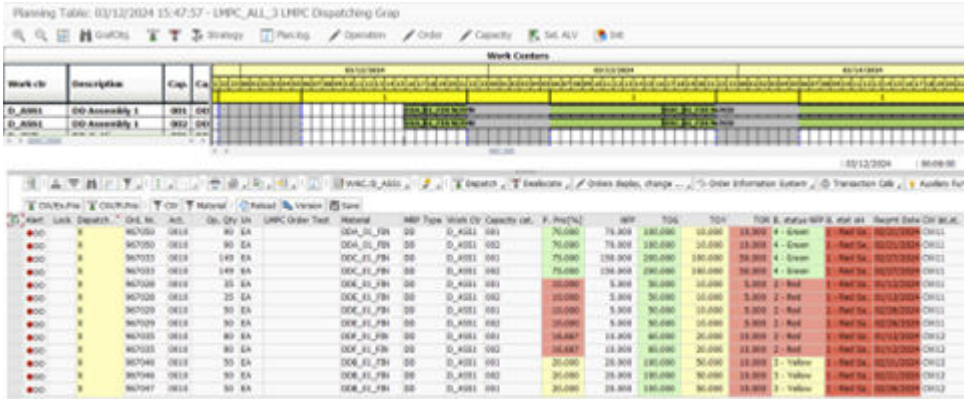
In the selection menu for the cleaning orders, two action codes have been defined as examples:

- S_6_CLMA: Creation of cleaning orders using the transition matrix for PI.
- S_6_CLOR: Creation of cleaning orders using time interval for PI.

> → Remember
>
> Settings must be made before these action codes can be used for the first time. Among other things, cleaning recipes and an order type must be created for the cleaning orders and entered in the settings of the relevant action code. S_CRCLOR Configuration: LMPC Cleaning Orders

2.2.7 LMPC_T07

HJPT Test Profile LMPC_T07



Test Profile LMPC_T07

The HJPT overall profile LMPC_T07 is a test profile for using the LMPC HJPT planning table as part of demand-driven planning (DDP).

Demand-driven planning is a planning concept that uses the functions of various SCM consulting solutions.

In DDP, the HJPT planning table is used for chronological sorting and dispatching of the orders. The DDP data is not generated in the HJPT planning table. It can be displayed in the HJPT planning table so the dispatching of the orders can be aligned with it.

> **Note**
>
> For details on the DDP logic, see the documentation on generating key figures in the documentation for SCM consulting solutions. The DDP logic is not explained in the LMPC documentation.

The HJPT overall profile LMPC T07 is based on the HJPT overall profile LMPC T01. The graphic also consists of three charts.

Graphic Bars

The graphic bars are labeled.

In chart 1, the material number and the order number are displayed on the bars.

In charts 2 and 3, the order number, operation number, material short text, and material number are displayed on the bars. Bar Chart Bar Label [page 50]

An additional coloring of the graphic bars was defined for the profile, which overrides the standard coloring.

- Partially confirmed orders are colored blue.
- Orders are colored red, yellow, or green depending on the buffer status (net flow position)

Coloring of Bars of the Bar Chart [page 50]

Fields in the ALV Grid

Two layouts have been created for the HJPT overall profile LMPC_T07:

- **/LMPC_DD_PL** – LMPC demand-driven planning
- **/LMPC_DD_EX** – LMPC demand-driven execution

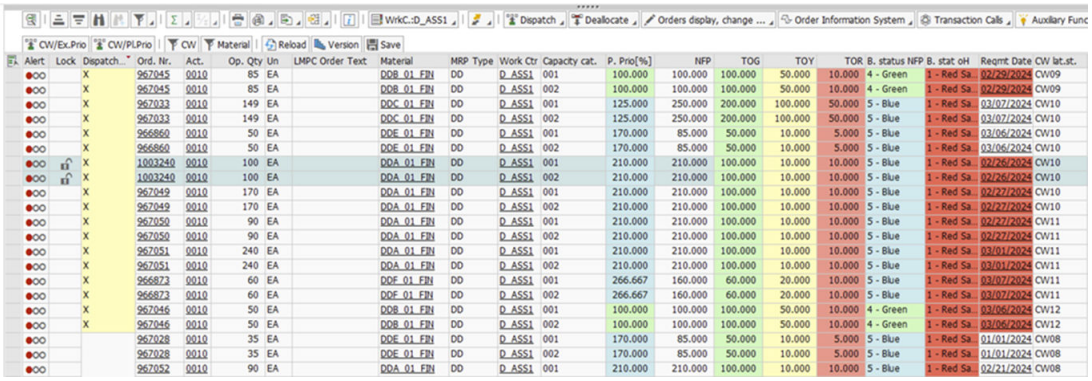
Layout /LMPC_DD_PL was defined as the standard layout in the settings for the overall profile. As a result, the layout is used each time the HJPT planning table is called. If different layouts are to be used for the user, this fixed assignment of the profile must be removed. Parameter Settings for the HJPT ALV Grid

Layout /LMPC_DD_PL

The layout /LMPC_DD_PL focuses on fields of demand-driven planning.

It focuses on essential DDP-relevant fields that support scheduling using DDP key figures and priorities. These include:

- Planning priority [%]
- Net flow position
- Top of green (TOG)
- Top of yellow (TOY)
- Top of red (TOR)
- Buffer status (net flow position)
- Buffer status (on-hand)



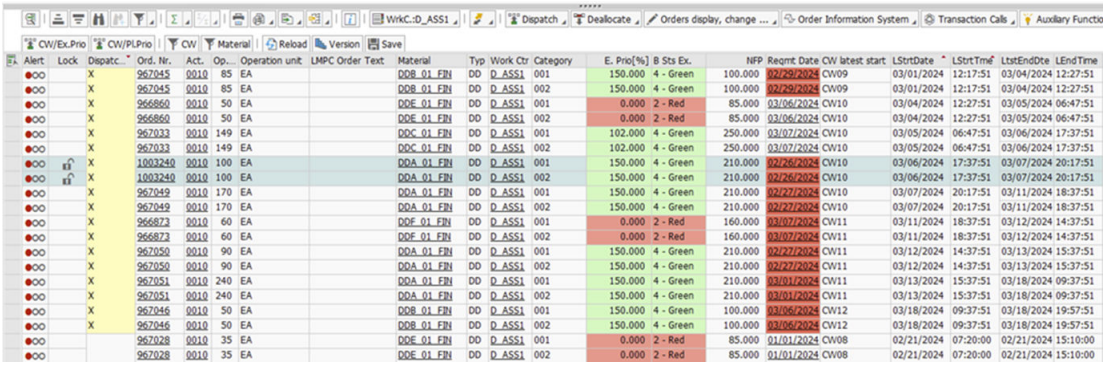
Fields of Layout /LMPC/_DD_PL

Layout /LMPC_DD_EX

The layout /LMPC_DD_EX focuses on fields of demand-driven execution.

These include:

- Buffer status (execution)
- Execution priority [%]
- Net flow position



Alert	Lock	Dispatc...	Ord. Nr.	Act.	Op...	Operation unit	LMPC Order Text	Material	Typ	Work Ctr	Category	E. Prio[%]	B	Sts Ex.	NFP	Reqmt Date	CW latest start	LStrtDate	LStrtTme	LstEndDte	LEndTme
●○○		X	967045	0010	85	EA		DDB_01_FIN	DD	D_ASS1	001	150.000		4 - Green	100.000	02/29/2024	CW09	03/01/2024	12:17:51	03/04/2024	12:27:51
●○○		X	967045	0010	85	EA		DDB_01_FIN	DD	D_ASS1	002	150.000		4 - Green	100.000	02/29/2024	CW09	03/01/2024	12:17:51	03/04/2024	12:27:51
●○○		X	966860	0010	50	EA		DDE_01_FIN	DD	D_ASS1	001	0.000		2 - Red	85.000	03/06/2024	CW10	03/04/2024	12:27:51	03/05/2024	06:47:51
●○○		X	966860	0010	50	EA		DDE_01_FIN	DD	D_ASS1	002	0.000		2 - Red	85.000	03/06/2024	CW10	03/04/2024	12:27:51	03/05/2024	06:47:51
●○○		X	967033	0010	149	EA		DDC_01_FIN	DD	D_ASS1	001	102.000		4 - Green	250.000	03/07/2024	CW10	03/05/2024	06:47:51	03/06/2024	17:37:51
●○○		X	967033	0010	149	EA		DDC_01_FIN	DD	D_ASS1	002	102.000		4 - Green	250.000	03/07/2024	CW10	03/05/2024	06:47:51	03/06/2024	17:37:51
●○○		X	1003240	0010	100	EA		DDA_01_FIN	DD	D_ASS1	001	150.000		4 - Green	210.000	02/26/2024	CW10	03/06/2024	17:37:51	03/07/2024	20:17:51
●○○		X	1003240	0010	100	EA		DDA_01_FIN	DD	D_ASS1	002	150.000		4 - Green	210.000	02/26/2024	CW10	03/06/2024	17:37:51	03/07/2024	20:17:51
●○○		X	967049	0010	170	EA		DDA_01_FIN	DD	D_ASS1	001	150.000		4 - Green	210.000	02/27/2024	CW10	03/07/2024	20:17:51	03/11/2024	18:37:51
●○○		X	967049	0010	170	EA		DDA_01_FIN	DD	D_ASS1	002	150.000		4 - Green	210.000	02/27/2024	CW10	03/07/2024	20:17:51	03/11/2024	18:37:51
●○○		X	966873	0010	60	EA		DDF_01_FIN	DD	D_ASS1	001	0.000		2 - Red	160.000	03/07/2024	CW11	03/11/2024	18:37:51	03/12/2024	14:37:51
●○○		X	966873	0010	60	EA		DDF_01_FIN	DD	D_ASS1	002	0.000		2 - Red	160.000	03/07/2024	CW11	03/11/2024	18:37:51	03/12/2024	14:37:51
●○○		X	967050	0010	90	EA		DDA_01_FIN	DD	D_ASS1	001	150.000		4 - Green	210.000	02/27/2024	CW11	03/12/2024	14:37:51	03/13/2024	15:37:51
●○○		X	967050	0010	90	EA		DDA_01_FIN	DD	D_ASS1	002	150.000		4 - Green	210.000	02/27/2024	CW11	03/12/2024	14:37:51	03/13/2024	15:37:51
●○○		X	967051	0010	240	EA		DDA_01_FIN	DD	D_ASS1	001	150.000		4 - Green	210.000	03/01/2024	CW11	03/13/2024	15:37:51	03/18/2024	09:37:51
●○○		X	967051	0010	240	EA		DDA_01_FIN	DD	D_ASS1	002	150.000		4 - Green	210.000	03/01/2024	CW11	03/13/2024	15:37:51	03/18/2024	09:37:51
●○○		X	967046	0010	50	EA		DDB_01_FIN	DD	D_ASS1	001	150.000		4 - Green	100.000	03/06/2024	CW12	03/18/2024	09:37:51	03/18/2024	19:57:51
●○○		X	967046	0010	50	EA		DDB_01_FIN	DD	D_ASS1	002	150.000		4 - Green	100.000	03/06/2024	CW12	03/18/2024	09:37:51	03/18/2024	19:57:51
●○○			967028	0010	35	EA		DDE_01_FIN	DD	D_ASS1	001	0.000		2 - Red	85.000	01/01/2024	CW08	02/21/2024	07:20:00	02/21/2024	15:10:00
●○○			967028	0010	35	EA		DDE_01_FIN	DD	D_ASS1	002	0.000		2 - Red	85.000	01/01/2024	CW08	02/21/2024	07:20:00	02/21/2024	15:10:00

Fields of Layout /LMPC_DD_EX

Further DDP fields can be displayed using the layout settings of the ALV Grid. The fields can be found in the layout group Demand-Driven Planning.

Coloring the ALV Grid

The data provider colors the DDP fields in the ALV Grid. There are no settings for this in LMPC Customizing.
Data Provider /LMPC/CL_DP_DDP Demand-Driven Planning [page 473]

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

Action Codes

The profile contains a range of action codes that can support users in the DDP process.

Action codes that have been configured for this profile are all based on the standard S_*. The action codes have been configured in such a way that users using demand-driven planning have easy access to the LMPC HJPT planning table.

Double-Click on Fields

The action code with which a function is called by double-clicking on individual fields of the ALV Grid has been configured differently for this profile than in the test profiles LMPC_T01 to LMPC_T05.

The function is executed with a double-click and not with a hotspot click. The description of the configured functions can be found in the section on double-clicking. S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

Filter Functions

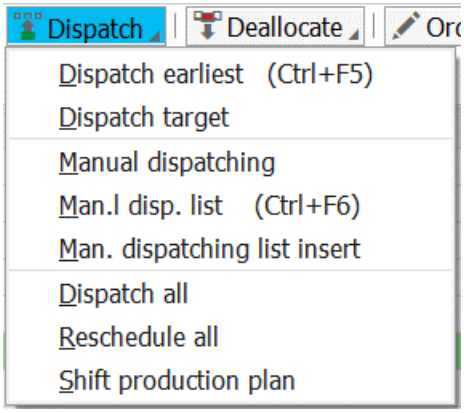
To improve usability, two preset filters have been added to the ALV Grid menu:

- S_6_FICW: Quick Filter for Calendar Week
- S_6_FIMA: Quick Filter for Material

These are typical filter criteria that can be used for scheduling within a DDP process. These filters are also used in the overall profile LMPC_T06. S_FILTR, S_FILTRE Set and Remove Filters [page 388]

Planning Functions

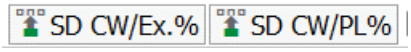
A selection of typical planning functions that can be used in the DDP process was made for the profile. These are located below the dropdown button for dispatching.



Planning Functions for Test Profile LMPC_T07

The sorted scheduling function is particularly useful for scheduling in the DDP scenario. S_EPSRT Sorted Dispatching [page 217]

For this function, two differently configured action codes have been inserted as buttons in the profile: S_7_SOEX and S_7_SOPL.



Action Codes S_7_SOPL and S_7_SOEX

S_7_SOPL sorts the data records before scheduling according to:

- Calendar week
- MRP type
- Planning priority
- Requirement date

S_7_SOEX sorts the data records before scheduling according to:

- Calendar week
- MRP type
- Execution priority
- Requirement date

These functions are configured in such a way that a sorted dispatching based on the planning or execution priority for the demand-driven materials (MRP type DD) is executed in the relevant calendar weeks (sorted in ascending order). The non-demand-driven materials (MRP type, for example PD) are then dispatched in ascending order according to their requirement date. This means that a combined approach for dispatching and sequencing demand-driven materials and other planned materials is also possible.

Description of a Possible Planning Process

Sorted dispatching first takes place based on calendar week and execution priority or planning priority.

Then, using the calendar week filter, operations with the latest start date are displayed, for example, for the next week.

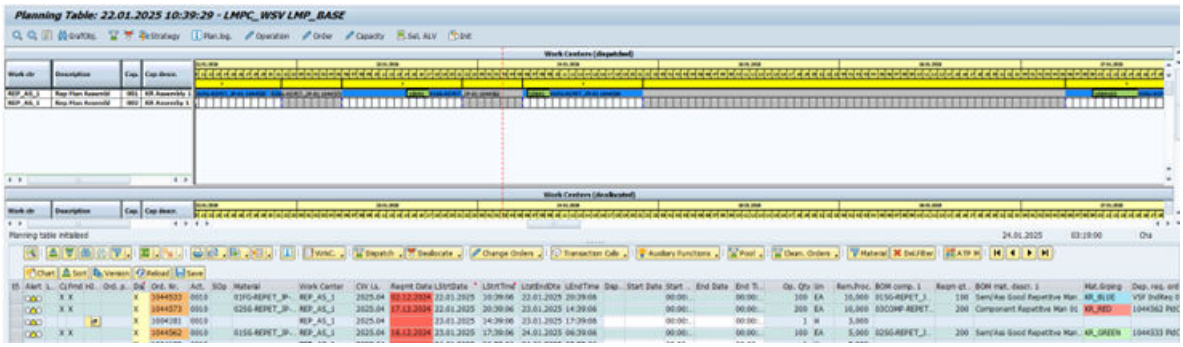
For the dispatched operations, for example, for the next week, the setup time can now be adjusted based on the setup matrix. S_AVRU Adjust Setup Time Automatically [page 111]

As a result of this adjustment, gaps could occur in the production plan because setup times may have been minimized. These gaps can either be retained as a buffer or closed using the Reschedule All function. S_RESCD Reschedule All [page 252]

If the sequence within a week is not relevant, the operations of a week can also be rescheduled using the function for reducing the setup time. Here, the setup time is reduced and gaps are closed with a function call. S_EPRST Dispatching Using Setup Matrix [page 264]

> → Remember
>
> To ensure that the DDP data is available in the ALV Grid, the data provider for the DDP data must be activated and a field enhancement of the ALV Grid must be carried out. Data Provider /LMPC/CL_DP_DDP Configuration: Demand-Driven Planning

2.2.8 LMPC_T08



Test Profile LMPC_T08

The HJPT overall profile LMPC_T08 is a test profile for repetitive manufacturing (REM) and is therefore designed for planning with planned orders with production versions.

Repetitive manufacturing differs from other industries in that only planned orders are used for planning and production. The production of similar products in a high number of pieces distinguishes repetitive manufacturing. In addition, the production plans are not created on the basis of individual lots, but on the basis of the period and quantity.

The HJPT overall profile LMPC_T08 is based on the HJPT overall profile LMPC_T03. The graphic also consists of two charts. LMPC_T03 [page 33]

The action code S_MALV is also available in the menu bar of the graphic to select operations from the graphic in the ALV Grid and thus find them more easily. S_MALV Selecting Operations in ALV Grid [page 340]

Graphic Bars

The graphic bars are labeled.

In chart 1, the material number and the order number are displayed on the bars.

In chart 2, the order number, operation number, material short text, and material number are displayed on the bars. Bar Chart Bar Label [page 50]

HJPT Charts

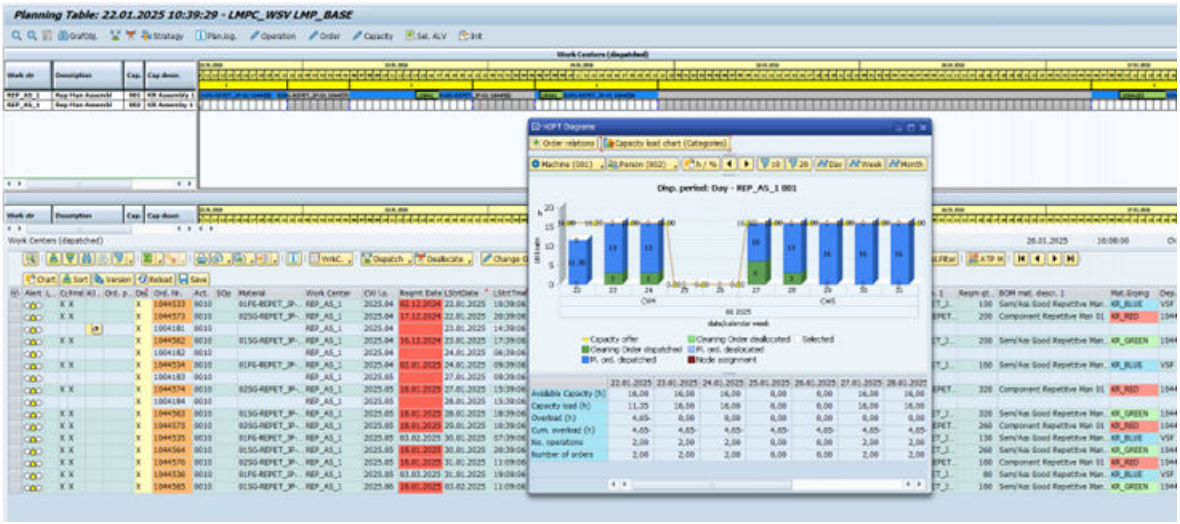


Chart Window

The chart window displays two views in the profile LMPC_T08. The initial view is the view of the order relation, with the customer demand displayed at the end of the list. The second view is the capacity utilization, which is divided into categories. The categories differ from the other test profiles in that they are divided into planned orders and cleaning orders only. C04 Transaction /LMPC/CUSTCAP: Categories for Capacity Utilization Chart

Cleaning orders are created as production orders. As a result, the capacity utilization for cleaning orders shows the capacity load of production orders.

Fields in ALV Grid

The **ALV Grid layout /LMPC_REM_1** was created for the HJPT overall profile LMPC_T08.

The selected fields are typically used in repetitive manufacturing. In addition, fields that are required for certain planning functions, such as dispatching according to the entered sequence, are also available.

The layout was defined as the standard layout in the settings for the overall profile. As a result, the layout is used each time the HJPT planning table is called. If different layouts are to be used for the user, this fixed assignment of the profile must be removed. Parameter Settings for the HJPT ALV Grid

There is a coloring for the fields of the ALV Grid that is designed differently than the coloring in the test profiles LMPC_T01 to LMPC_T05. For details, see the sections on coloring the ALV Grid.

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

Action Codes

The profile contains a series of action codes that can typically be used in repetitive manufacturing and are suitable for planned orders.

Action codes that have been configured specifically for this profile are all based on the standard S_* action codes. The action codes have been configured in such a way that companies from repetitive manufacturing can easily access the functions.

Action codes configured specifically for this profile all start with S_8_*.



Action Codes for Profile LMPC_T08

If the settings allow, these action codes can also be used for discrete manufacturing or process industries.

The action codes for cleaning orders are an example configuration and are not functional as long as the customer-specific master data has not been created and the required configurations have not been added to the action code. S_CRCLOR Configuration: LMPC Cleaning Orders

Double-Click on Fields

The action code with which a function is called by double-clicking on individual fields of the ALV Grid has been configured differently for this profile than in the test profiles LMPC_T01 to LMPC_T05 and is designed for planned orders. The function is executed with a double-click and not with a hotspot click. S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

Filter Functions

In repetitive manufacturing, planning sequences are often created on the basis of the material group, which is why a preset filter has been included in the ALV Grid menu: Action code S_8_FIMG: Quick Filter for BOM Components. S_FILTR, S_FILTRE Set and Remove Filters [page 388]

Selection Menu for Pool Planning

For the profile LMPC_T08, a menu button was created for planning with a pool ID in which action codes that support planning with a pool ID were grouped.

The pool ID function is used to group planned orders. These groups of orders can be dispatched with different planning functions. Planning with Pool ID [page 289]

Campaign Planning

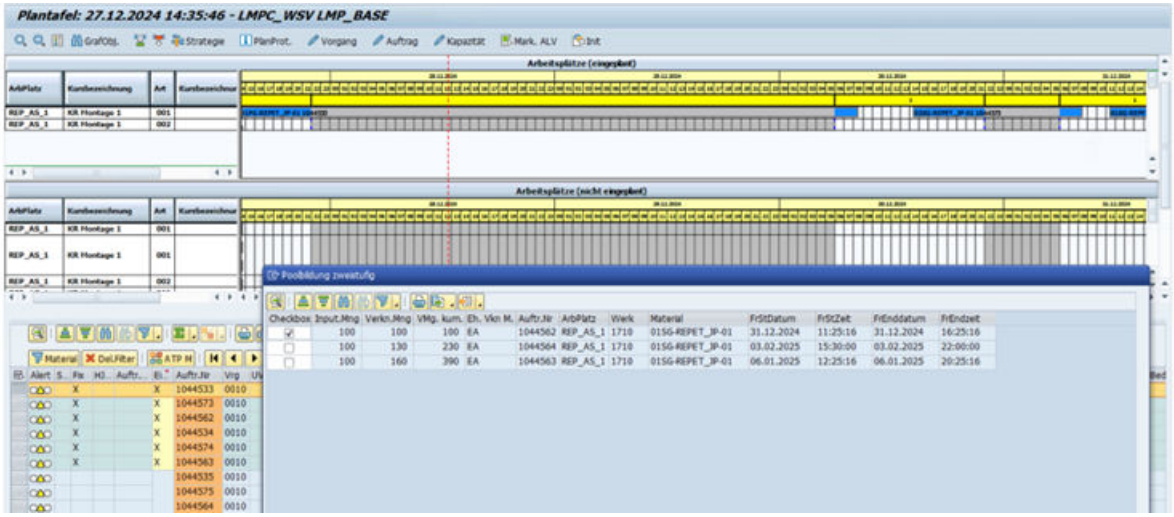
Simple pool formation for orders in campaign planning can be performed using manual selection in the ALV Grid and the action code S_POOLID. S_POOLID Create Order Pool Manually [page 290]

If certain orders are always to be planned together on one or different resources – in terms of campaign planning – dispatching using the action code S_EPSELP is possible. When you select at least one operation with a pool ID, all other operations of this pool are also dispatched. S_EPSELP Single-Level Dispatching with Pool ID [page 293]

Linking Two BOM Levels

Some production processes require a link between two manufacturing levels, such as semifinished and finished product.

In repetitive manufacturing, for example, if assemblies such as brake systems are produced, this is mapped using several BOM levels. You can use the action code S_PBLKFG to create a connection using the pool ID to take the dependency of the orders into account in planning. S_PBLKFG Pool formation with BOM information [page 296]



Creation of a Two-Level Order Pool

Due to the order pool created, planning is also carried out on different resources using two levels. This can be done in parallel or non-parallel using the action code S_EPBKFG. S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

Selection Menu Cleaning Orders

In repetitive manufacturing, it may be necessary to perform cleaning or maintenance on the installation after a certain time interval or after a product change. For this, cleaning orders can be created automatically in the HJPT planning table. LMPC cleaning orders are production orders without header material that occupy capacity for non-producing activities such as cleaning or tool changes. S_CRCLOR Create LMPC Cleaning Orders [page 138]

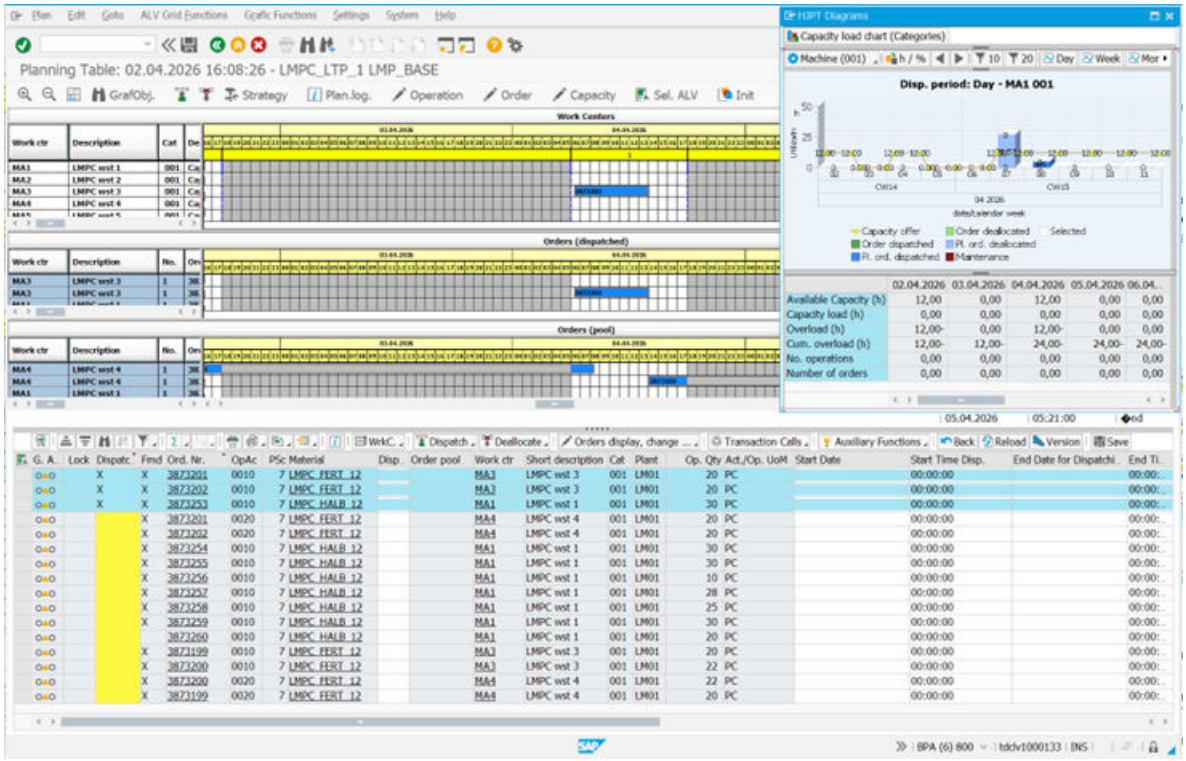
In the selection menu for the cleaning orders, three action codes have been defined as examples:

- S_8_COMT: Creation of cleaning orders using the transition matrix.
- S_8_CONR: Creation of cleaning orders based on the number of planned orders.
- S_8_COTM: Creation of cleaning orders using time interval.

In addition, the action code S_ORDCL is defined to technically complete cleaning orders. Cleaning orders are the only orders in repetitive manufacturing that are planned in the form of production orders. S_ORDCL Closing Individual Production Orders or Process Orders Technically [page 164]

> → Remember
>
> Settings must be made before these action codes can be used for cleaning orders for the first time. Among other things, routings and an order type must be created for the cleaning orders and entered in the settings of the relevant action code. S_CRCLOR Configuration: LMPC Cleaning Orders

2.2.9 LMPC_T09



Test Profile LMPC_T09

The test profile LMPC_T09 is a test profile for long-term planning or for the simulation of planning in the short-term to medium-term horizon.

This section describes the content of the profile. For more details about long-term planning with LMPC, see LMPC and Long-Term Planning (PP-MP-LTP) [page 571].

The LMPC_T09 profile is also divided into three parts. It has an area for the graphical planning board, an area for the ALV grid, and an area for the diagram window.

The graphical planning board is divided into three charts here, as in the test profile LMPC_T01 [page 30].

By dragging and dropping operations within the charts and across charts, orders can be dispatched, deallocated, and rescheduled. Bar Chart Menu Bar Functions [page 53]

Fields in the ALV Grid

For the HJPT overall profile LMPC_T09, the ALV Grid Layout /LMPC_T09 was created.

The layout contains fields that are filled in long-term planning.

The layout was permanently set as the default layout in the settings for the overall profile. As a result, the layout is used every time the HJPT planning board is called up. If different layouts are to be used for users, this fixed assignment of the profile must be removed. Parameter Settings for the HJPT ALV Grid

There is a coloring for the fields of the ALV Grid, which is designed differently than the coloring in the other test profiles. The details can be found in the chapters on coloring the ALV Grid.

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

Action Codes

This profile contains action codes that can be used in long-term planning.

Window for diagrams

The window for diagrams displays the capacity utilization graphically when opened, supplemented by the ALV grid of capacity data. Chart Window [page 79]

2.3 Bar Chart of HJPT Planning Table

The HJPT planning table uses the bar chart of the capacity planning table (CM21 / CM25) of the standard SAP system.

For each operation of an order, a capacity requirement is displayed in the HJPT planning table. This capacity requirement is assigned to a capacity of a work center.

The bar chart displays the temporal location of the capacity requirements in the capacities of the work centers.

The bar chart is controlled by the standard Customizing settings for the capacity planning table.

The LMPC delivery provides you with example Customizing profiles for the capacity planning table, for use with the HJPT planning table. HJPT Test Profiles [page 29]

In the LMPC example profiles, there are separate charts for dispatched and deallocated operations.

The labeling and coloring of the bars of the chart can be changed:

- Coloring of Bars of the Bar Chart [page 50]
- Connecting Lines for Bars in Bar Chart [page 51]

The bar chart is not only for display purposes. You can execute various functions on the operations of the orders that are represented by the bars. Standard functions of the capacity planning table and LMPC action codes are available:

- Bar Chart Menu Bar Functions [page 53]
- Bar Chart Application Toolbar Functions [page 59]
- Bar Chart Context Menu Functions [page 61]
- Planning Order Operations in the Bar Chart [page 62]
- Creation of Simulative Orders [page 57]

> ⚠ Restriction
>
> It is not possible to display or plan for the individual phases of PP-PI operations in the HJPT planning table. Planning is only possible at the level of whole operations.

2.3.1 Bar Chart Bar Label

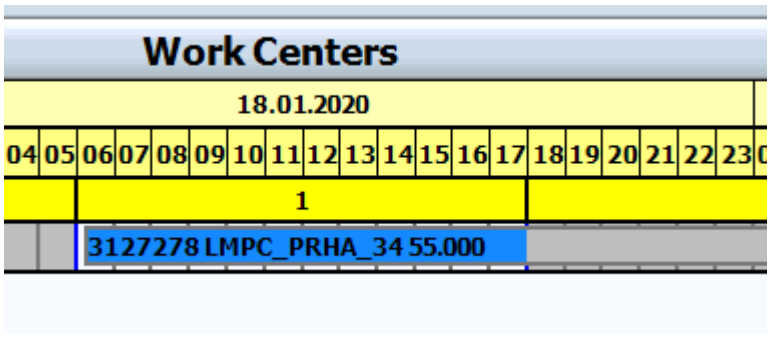
Texts on Graphical Bars

Capacity planning table Customizing for the LMPC HJPT test profiles is configured such that the order number for the capacity requirement is displayed on the bars.

It is possible to display the contents of any field of the ALV Grid of the HJPT planning table on the bars.

You can use LMPC Customizing to specify up to 4 fields, the contents of which are displayed on the bar. The maximum length is 80 characters.

This means that additional data such as the material number or the quantity of an order can be displayed.



Example Bar Text with Order Number, Material Number, and Order Quantity

A configuration has been defined for the LMPC test profiles LMPC_T06, LMPC_T07, and LMPC_T08.

In chart 1 of the graphic, the material number and the order number are displayed on the bars.

In charts 2 and 3 of the graphic, the order number, operation number, material short text, and material number are displayed on the bars.

LMPC_T06 [page 36]

LMPC_T07 [page 40]

LMPC_T08 [page 44]

For details on configuring the label, see the LMPC Configuration Guide.Label of Graphic Bars

2.3.2 Coloring of Bars of the Bar Chart

Coloring of the Bars of the Capacity Requirements

The colors of the graphical bars are preset in the delivered Customizing for the LMPC test profiles. This Customizing has been set in the Customizing of the graphic and is delivered with the test profiles.

The coloring is set as follows:

- Planned orders: Blue
- Production orders: Green
- Process orders: Green

- Maintenance order: Reddish brown
- Network: Red
- Split record: Magenta

The Customizing for coloring in the graphic is very complex. It is not recommended to change the basic coloring delivered.

However, you can use LMPC Customizing to modify the color of the bars easily.

Rules are created for this. The rules can be based on all data available in the ALV Grid of the HJPT planning table.

For example, it is possible to color by material number, material group, order status, and so on.

> → Tip
>
> The LMPC test profiles LMPC_T06 [page 36] and LMPC_T07 [page 40] contain examples of the coloring of the graphic bars. The standard coloring of the graphic is overridden by rules.

For details on configuring the coloring, see the LMPC Configuration Guide. Coloring of Graphic Bars

2.3.3 Connecting Lines for Bars in Bar Chart

Graphical Display of Connections Between Orders

It is possible to display the connections between operations in the bar chart of the HJPT planning table.

The following connections can be displayed:

- **Connections between operations of an order**
- **Connections between operations of an order pool**
- **Connections between operations that belong together through a requirement relationship. In the LMPC planning table, these are the order relations.**

These are displayed as arrows. The start of the arrow has two vertical lines and the end of the arrow has a double tip. This enables the direction to be read.

Arrows are displayed between all operations of an order pool for the connecting lines for order pools. The arrows run between the operations in the direction in which they are scheduled. This means that they do not run from every operation to every other operation, but only throughout the entire pool in terms of time.

If connecting lines between pool orders and operations are active, the pool lines override the lines between the operations. In this case, the lines between the operations are no longer displayed.

The connecting lines of the requirement relationships are only formed between the last operation of the preceding operation and the first operation of the subsequent order. Therefore, if only the lines for order relations are activated, no lines are displayed between the operations of an order.

The connecting lines of the requirement relationships are not supported for co-production. There are no connecting lines between an order that uses the co-product or by-product of another order as a component.

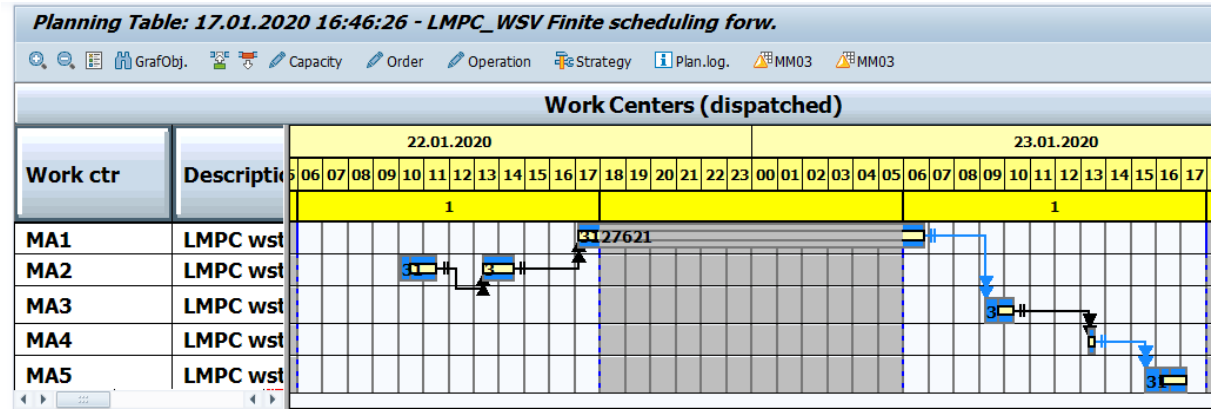
The colors of the arrows can be defined using LMPC Customizing. The settings are made in the respective LMPC overall profile. This is where you also define whether arrows are displayed for all operations, or only for dispatched or deallocated operations. Connecting Lines Between Bars

In the case of the order relations, you can also differentiate between the firmed and unfirmed order relations.

> **⚠ Restriction**
>
> The system displays only lines between the capacity requirements that are relevant for scheduling. These are capacity requirements whose capacity is specified as the basis for scheduling in the work center.

> **⚠ Caution**
>
> For runtime and clarity reasons, it is recommended that you choose the use of the lines carefully. If you activate all lines, the display will soon become unclear. In addition, calculating a large number of lines can impair runtime.

Example



Example of Connections Between Operations

In this example, the blue arrows show the relationship between the linked orders. That is, the demand relationships. The direction always goes from the predecessor to the successor in the direction of the finished product.

The black lines show the relationships between the operations of an order.

Related Information

List of Order Relations [page 86]
Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
Multilevel Planning via Order Relations [page 313]

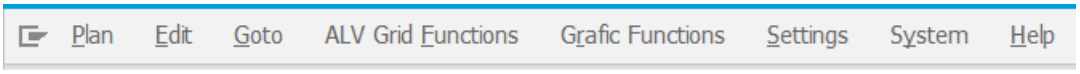
2.3.4 Bar Chart Menu Bar Functions

Call Options of Functions via the Bar Chart

> **Note**
>
> All descriptions in this section refer to the settings that are delivered with the HJPT test profiles. Other functions can be set in your system.

Menu Bar

The menu bar at the top of the screen contains both standard functions of the capacity planning table and specific functions of the HJPT planning table.

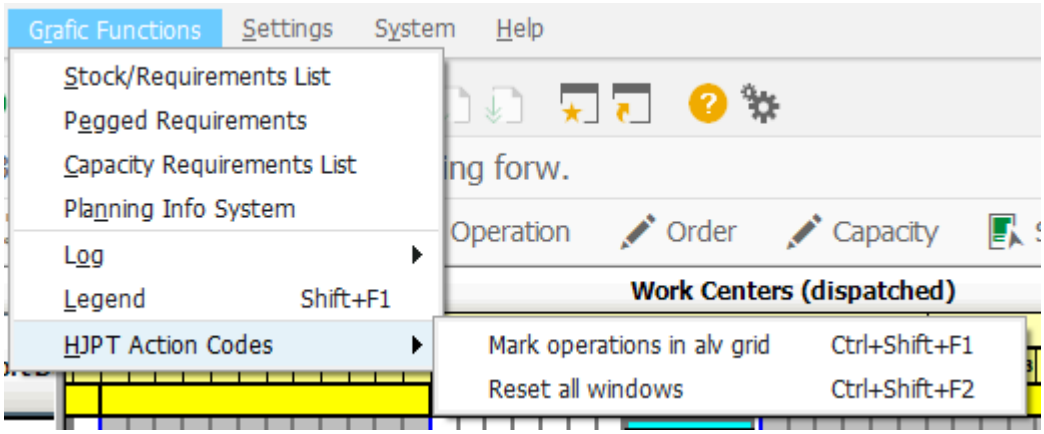


Menu Bar

There are two menu options that contain LMPC HJPT functions:

- Graphic Functions
- ALV Grid Functions

The HJPT functions that are on the application toolbar are listed in the menu option "Graphic Functions" (see the description of the pushbuttons in the next section). You are in the submenu "HJPT Action Codes".



Call Action Code from Menu Bar

The operations for the functions are selected using the graphic. The functions can also be executed using shortcuts. The menu text for the functions contains information about executing the functions using shortcuts.

The second menu option for HJPT functions called ALV Grid Functions contains a list of action codes that are applied to selected operations in the ALV Grid using keyboard shortcuts. The description of these functions is contained in the section on the ALV Grid. Action Code Call Using Keyboard Commands [page 76]

The assignment of the HJPT action codes in the graphic functions and the assignment of the HJPT action codes via the menu of the ALV Grid functions can be defined using Customizing settings. Action Code Trigger

All other functions that are called via the menu bar of the graphic are standard functions of the capacity planning table. For these functions, the operations are selected only using the bar chart.

The standard functions of the capacity planning table are controlled by the GUI status. The usage of these functions cannot be changed. Two different GUI statuses are delivered with the LMPC delivery: LMPCST, and a status with fewer functions, LMPCST2. G03 Transaction /LMPC/OPDE: Control Profile

The following table provides an overview of the available standard functions:

Standard Functions of the Capacity Planning Table

Menu	Function	Description
Plan	Save Ctrl+S	Save the planning.
	Print -> Chart 1-8	Print function for the charts of the graphic.
	Exit (Shift+F3)	Cancel planning. Exit planning without saving.
Process	Select -> To Row	Select all bars in a row.
	Select -> To Chart	Select all bars of a chart.
	Select -> Related Objects	Select related objects.
	Select -> Selection	Selection of criteria for selecting objects.
	Select -> Deselect All Shift + F5	Deselect all graphical objects.
	Highlight in Color -> Related Objects	Highlight in color those objects that belong together. Caution: The colored indicator is not a selection. If you want to execute functions on these objects, you must still select them first.
	Highlight in Color -> Selection...	Define the criteria according to which the bars are to be highlighted.
	Highlight in Color -> Undo	Undo the highlighting.
	Change Sorting	Arrange the bars according to a different sorting.
	Resort	Resort the bars in the graphic.
	Firm Planning Area	Specification of a planning area for all open capacities. A time interval is specified. Select whether planning is not possible there. Or whether only planning can be carried out there.
	Insert Date Marker	Inserts a dashed line in the graphic at a specific day and time.
	Position Time Axis on -> Today -> Date... -> First Graphic Object Shift + F9	The display in the graphic can be moved, starting with the current time, a selected date, or the first graphical object in the display.

Menu	Function	Description
	Find Ctrl+F	Search function for the graphic.
	Cancel F12	Exit the planning table. If the current planning status has not yet been saved, the system displays a dialog box asking you to save before the termination.
Goto	Work Center -> Display	Display the work center in the same way as in transaction CR03.
	Capacity -> Display -> Change Shift + F8	Jump to the display or change of the capacity.
	Person -> Display -> Qualification -> Time Events	Jump to the data on persons.
	Order -> Create -> Display -> Change Shift + F7 -> Sequence Number -> Partial Lot	Branch to creating an order, displaying or changing the selected order. You can also enter the sequence number and form partial lots. Creation of Simulative Orders [page 57]
	Operation -> Display -> Change Shift+F6 -> Components -> Prod.Resource/Tool -> Inspection Characteristics	Branch to operation of a production order or process order. This function is not possible for planned orders.
	Back F3	Exit planning. If there is unsaved data, the planning table asks whether the data should be saved.
Grafic Functions		
	Stock/Requirements List	Jump to the list of transaction MD04 for the material of the selected operation.
	Pegged Requirements	Go to the overview of transaction MD09

Menu	Function	Description
	Capacity Requirements List	List of orders of the selected work center with display of capacity requirements
	Planning Info System	Totals overview of the available capacity, the capacity requirement, and the setup requirement in hours and in percent for the selected work center.
	Log ->Planning Log ->Scheduling	Display of the planning or scheduling log.
	Legend	Legend for the used colors of the bars.
Settings	Strategy... F5	Display and selection of the strategy profile for planning with change option.
	Scale -> Yearly Split -> Monthly Split -> Weekly Split -> Daily Split -> Hourly Split -> Variable	Conversion of the scale for the display.
	Break Times -> Show -> Hide	Show or hide times without available capacity.
	Time Line -> On -> Off	Activate or deactivate the time line for the mouse pointer when moving over the graphic.
	Select -> Table Objects -> Inverse -> Color Marking	Marking with inverse colors or with the standard color marking.
	Select -> Diagram Objects -> Pick Marking -> Bordered -> Inverse -> Color Markers	Select the colored highlighting of bars. There are various options.

Menu	Function	Description
	View -> Zoom In Shift+F11 -> Zoom Out Shift+F12 -> Adjust Chart Area	Functions for influencing the display of the graphic. Enlarge, reduce, and display the entire time period on the GUI width.
	Display Profiles	Display the overall profile of the capacity planning table with the option of branching to the subprofiles.
System		Standard SAP GUI functions.
Help	Application help and other help	You can choose “Application Help” to go to the online documentation for LMPC.

2.3.4.1 Creation of Simulative Orders

Use

This function enables you to create simulative production and process orders. The orders are simulative because they do not yet exist in the database. The system does not write the orders to the database until you choose Save.

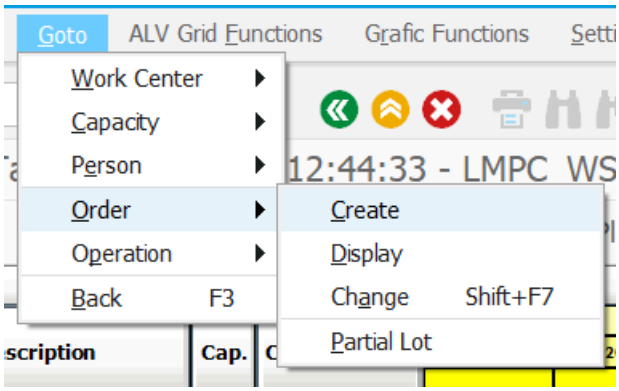
If you discard the planning without saving, for example by reloading the data, the simulative orders are lost.

> → Tip
>
> The HJPT planning table contains an action code for creating simulative orders. This can be used as an alternative. S_CRORD Create Simulative Order [page 156]

Procedure

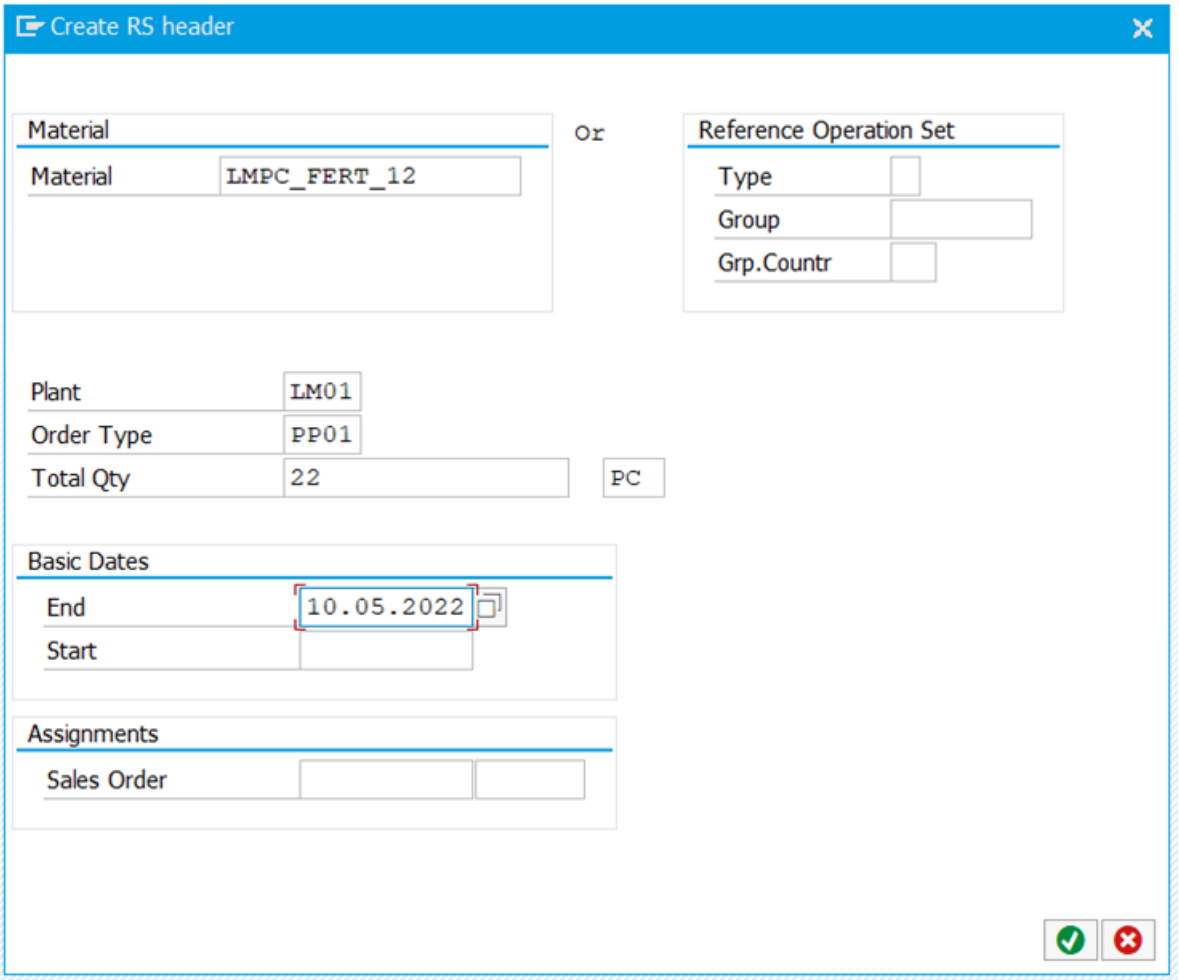
In the menu bar of the capacity planning table, select creation of orders.

Menu -> Goto -> Order -> Create.



Creating Order

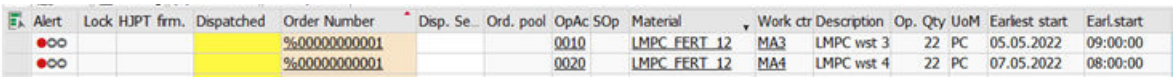
The system displays a dialog box for querying the input parameters.



Entering Values

Enter the required data and confirm your entry.

Result:



Alert	Lock	HJPT frm.	Dispatched	Order Number	Disp. Se...	Ord. pool	OpAc	SOp	Material	Work ctr	Description	Op. Qty	UoM	Earliest start	Earl.start
●○○				%00000000001			0010		LMPC_FERT_12	MA3	LMPC wst 3	22	PC	05.05.2022	09:00:00
●○○				%00000000001			0020		LMPC_FERT_12	MA4	LMPC wst 4	22	PC	07.05.2022	08:00:00

Newly Created Order

The operations of the newly created order appear in the ALV Grid. The order has a temporary order number.

A sequence order number from the regular number range is only assigned once you have saved.

⚠ Restriction

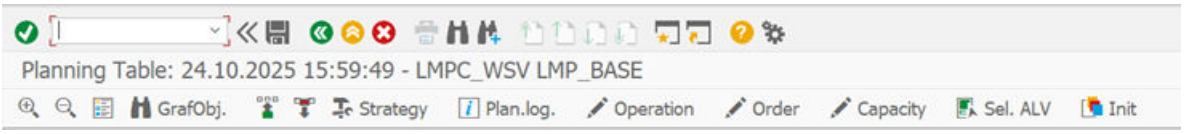
It is not possible to create simulative planned orders.

The use of simulative production orders and process orders is subject to a number of restrictions. For a detailed list of the restrictions, see the action code S_CRORD. S_CRORD Create Simulative Order [page 156]

If you want to use a function that does not work with the simulative orders, save once. This writes the orders to the database. You can then use the orders as normal orders.

2.3.5 Bar Chart Application Toolbar Functions

Above the graphic, there are two application toolbars that can be used to execute different functions. Here, you can execute standard functions of the capacity planning table as well as functions of the HJPT planning table. There is a pushbutton for each function. For some functions, it is also possible to execute the respective function using a keyboard shortcut.



Pushbuttons

First Application Toopbar

In the top bar next to the command field, there are the following buttons:

Commands in Menu Bar

Function	Keyboard Command
Save	Ctrl + S
Return	F3
Exit	Shift + F3
Cancel	F12
Find	Ctrl + F
Find Next	Ctrl + G
Create New Session	-
Create Shortcut	-
Help Function	F1
Customize Local Layout	Alt + F12

These functions are standard functions of the SAP GUI.

Below the top menu bar is the title of the transaction, and below that the second application toolbar.

Second Application Toolbar

The second application toolbar contains a mixture of standard functions of the capacity planning table and HJPT action codes. A maximum of 12 HJPT action codes can be displayed as pushbuttons on the bar.

In the LMPC test profiles, two of the 12 possible locations are already prefilled with the functions: “Select Operations in ALV Grid” and “Reset All Windows”.

The functions of the second application toolbar refer to the graphic. This means that for certain functions, such as changing an order or dispatching and deallocating, the bars must first be selected before the respective function can be executed.

> **→ Tip**
>
> You can select several bars by holding down the SHIFT key when you click the bars.

> **→ Remember**
>
> The HJPT action codes for the application toolbar are created via Customizing with the trigger "Menu Bar Graphical Planning Table". For details on the triggers, see the LMPC Configuration Guide. Action Code Trigger

The following table provides an overview of the functions with their respective keyboard shortcuts.

Function	Keyboard Command
Enlarge	Shift + F11
Zoom Out	Shift + F12
Display Legend	Shift + F1 The legend shows the graphical object types and their colors that are set in the overall profile used for the graphic. This function is a function of the capacity planning table. Configuring the Graphic You can use the LMPC function for coloring bars to override this coloring. The colors of the LMPC rules for coloring are not displayed in the legend. Coloring of Bars of the Bar Chart [page 50]
Set Time Line of Graphic to Selected Object	Shift + F9
Dispatch Operation	F5
Deallocate Operation	F6
Change Strategy Profile	F7
Display Planning Log	F8
Change Operation	Shift + F6
Change Order	Shift + F7
Change Capacity	Shift + F8
Select Operations in ALV Grid	Ctrl + Shift + F1
Reset All Windows	Ctrl + Shift + F2
Empty Item for HJPT Action Code	Ctrl + Shift + F3
Empty Item for HJPT Action Code	Ctrl + Shift + F4
Empty Item for HJPT Action Code	Ctrl + Shift + F5

Function	Keyboard Command
Empty Item for HJPT Action Code	Ctrl + Shift + F6
Empty Item for HJPT Action Code	Ctrl + Shift + F7
Empty Item for HJPT Action Code	Ctrl + Shift + F8
Empty Item for HJPT Action Code	Ctrl + Shift + F9
Empty Item for HJPT Action Code	Ctrl + Shift + F10
Empty Item for HJPT Action Code	Ctrl + Shift + F11
Empty Item for HJPT Action Code	Ctrl + Shift + F12

The functions for dispatching and deallocating and changing the strategy profile are explained in a separate chapter. Planning Order Operations in the Bar Chart [page 62]

⚠ Restriction

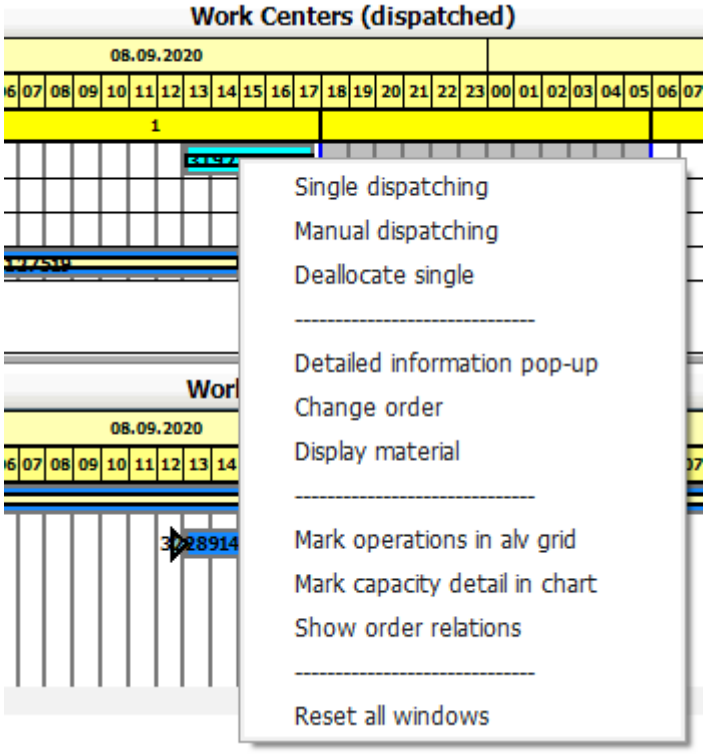
You can use the function for changing the capacity to simulate changes to the available capacity at the work centers. When you save, the changes are posted to the database. Changing the available capacity is not recommended.

- The dispatched operations that are affected by the change of the available capacity are not rescheduled. This can result in situations where orders consume available capacity that does not exist.
- The charts for capacity utilization read the available capacity from the database. If the available capacity is changed in the simulation, the data in the charts is no longer correct. Chart Window [page 79].
- Some planning functions use the available capacity of the work centers to calculate the dates. The available capacity is read from the database using function modules. An available capacity changed in the simulation is not taken into account in these planning functions.

2.3.6 Bar Chart Context Menu Functions

You can use the context menu of a bar to execute HJPT action codes for the operation of this order.

You access the context menu by selecting a bar and then right-clicking.

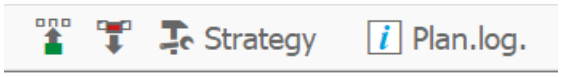


Context Menu Graphic Bar

The action codes displayed depend on the Customizing settings of the context profiles for the HJPT overall profile. In the delivered sample profiles, action codes are already preset for the context menu of the graphic bars.

> → Remember
>
> The HJPT action codes for the context menu are created using Customizing with the trigger “Context Menu Graphic Bar”. For details on the triggers, see the LMPC Configuration Guide.Action Code Trigger

2.3.7 Planning Order Operations in the Bar Chart



Functions for Planning Order Operations

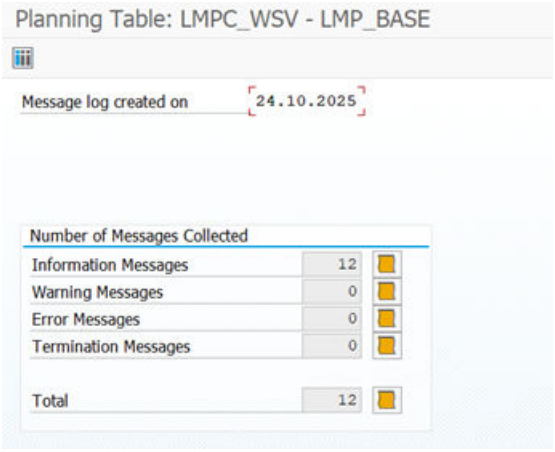
The following functions are available for scheduling operations:

- Dispatch (F5)
- Deallocate (F6)
- Dispatching, deallocating, and rescheduling by dragging and dropping a bar
- Change Strategy Profile (F7)
- Display planning log (F)

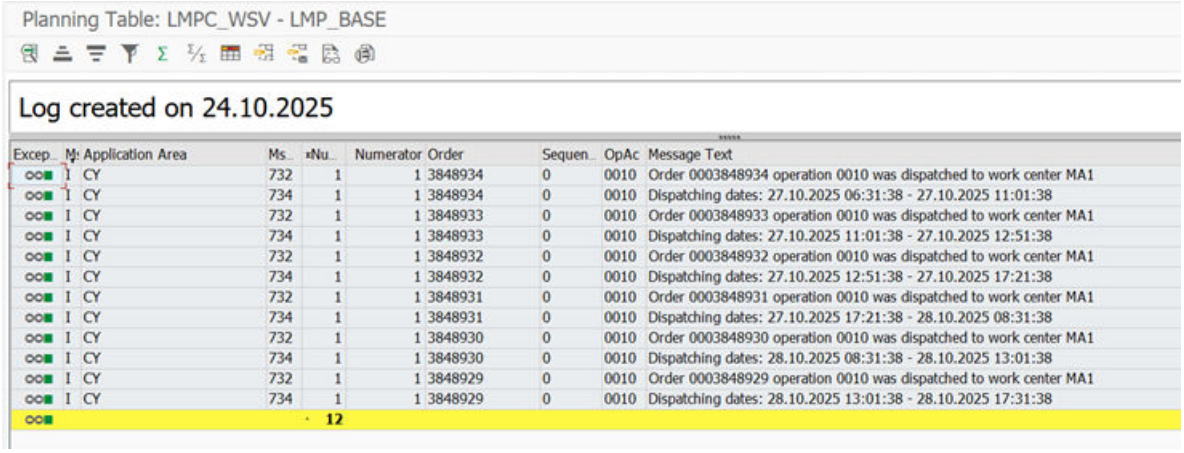
If you want to dispatch or deallocate an operation using the Dispatch or Deallocate pushbutton, the corresponding bar must first be selected. Multiple selection is possible by pressing the Shift key at the same time. It is also possible to select all operations of a work center by selecting a work center on the left in the tabular part of the graphic.

You can also schedule operations by grabbing a bar with the mouse and dragging them to the desired position.

After dispatching operations, you can navigate to the planning log to view details about scheduling.



Example Planning Log



Excep...	M...	Application Area	Ms...	...Nu...	Numerator	Order	Sequen...	OpAc	Message Text
	I	CY	732	1	1	3848934	0	0010	Order 0003848934 operation 0010 was dispatched to work center MA1
	I	CY	734	1	1	3848934	0	0010	Dispatching dates: 27.10.2025 06:31:38 - 27.10.2025 11:01:38
	I	CY	732	1	1	3848933	0	0010	Order 0003848933 operation 0010 was dispatched to work center MA1
	I	CY	734	1	1	3848933	0	0010	Dispatching dates: 27.10.2025 11:01:38 - 27.10.2025 12:51:38
	I	CY	732	1	1	3848932	0	0010	Order 0003848932 operation 0010 was dispatched to work center MA1
	I	CY	734	1	1	3848932	0	0010	Dispatching dates: 27.10.2025 12:51:38 - 27.10.2025 17:21:38
	I	CY	732	1	1	3848931	0	0010	Order 0003848931 operation 0010 was dispatched to work center MA1
	I	CY	734	1	1	3848931	0	0010	Dispatching dates: 27.10.2025 17:21:38 - 28.10.2025 08:31:38
	I	CY	732	1	1	3848930	0	0010	Order 0003848930 operation 0010 was dispatched to work center MA1
	I	CY	734	1	1	3848930	0	0010	Dispatching dates: 28.10.2025 08:31:38 - 28.10.2025 13:01:38
	I	CY	732	1	1	3848929	0	0010	Order 0003848929 operation 0010 was dispatched to work center MA1
	I	CY	734	1	1	3848929	0	0010	Dispatching dates: 28.10.2025 13:01:38 - 28.10.2025 17:31:38
				12					

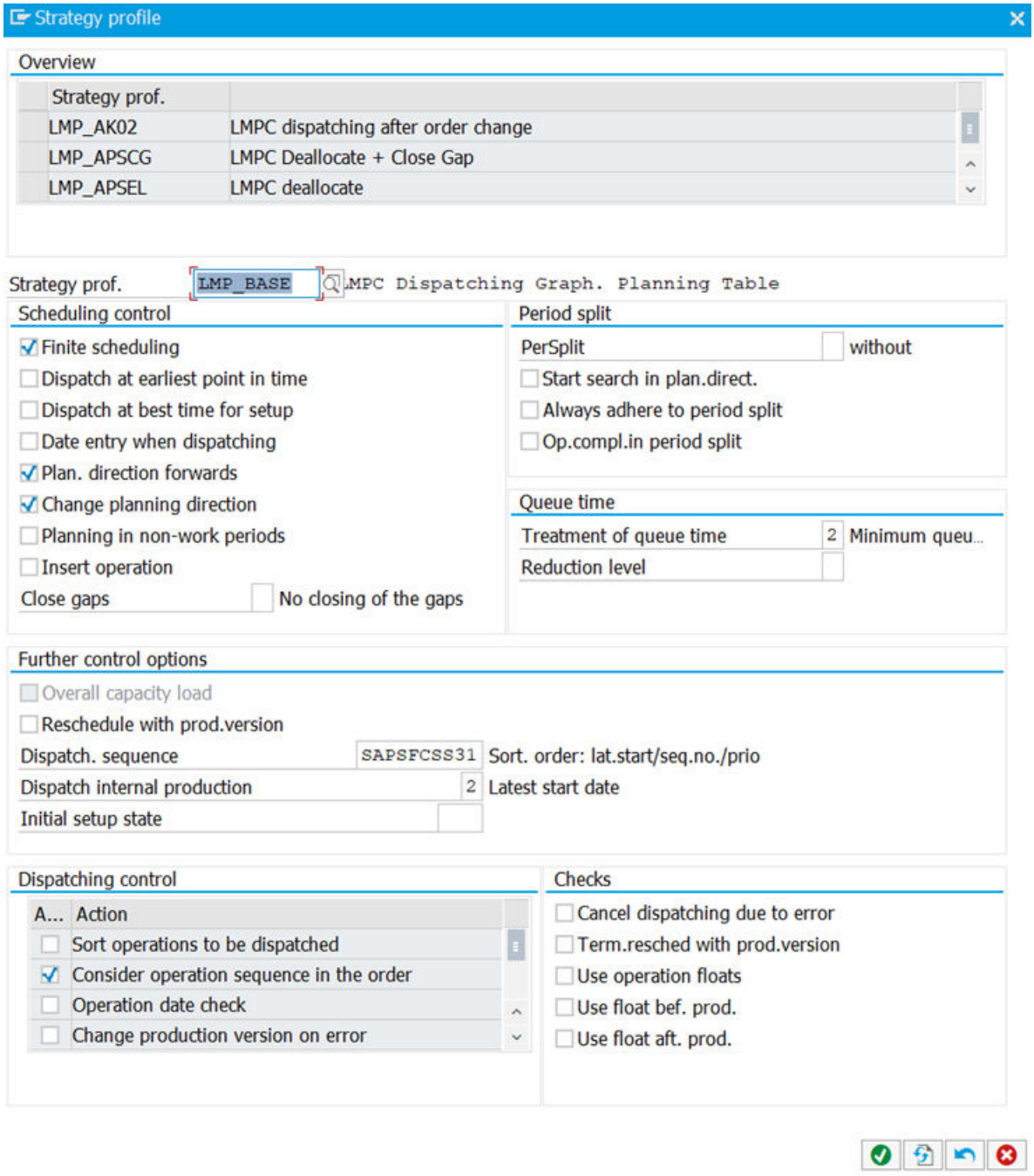
Planning Log Details

Operations in the graphic are scheduled using the strategy profile that is defined in the overall profile for the graphic. G01 Transaction /LMPC/OPD0: Overall Profile for Capacity Leveling

The strategy profile specifies how the dispatching function behaves. The technical name of the strategy profile is displayed as the last element in the header of the graphic.

You can use the button for changing the strategy profile of the capacity planning table to call the settings for the strategy profile for dispatching and deallocation.

The window also shows all other available strategy profiles. You can use this function to select a different profile for dispatching and deallocation from the list of profiles.



Change Strategy Profile

You can use this function to temporarily change the settings of the respective strategy profile and temporarily set another strategy profile for dispatching and deallocation. The changed settings are not saved. You can only make a permanent change to the settings of the strategy profile in Customizing for the capacity planning table. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

Planning with Drag and Drop

The strategy profile that is stored in the capacity planning table is also used if operations are dispatched, deallocated, and rescheduled to other times and work centers by dragging and dropping bars.

It is possible to use a different strategy profile for drag and drop in the graphic than the strategy profile that is defined in the overall profile for the graphic. To do this, activate the action code S_DRADRO with the trigger "Drag & Drop in the graphical table". If the action code is active, a strategy profile predefined by the action code S_DRADRO is used each time operations are dispatched, deallocated, and rescheduled using drag and drop (exception S_MVEORD, see below). S_DRADRO Set strategy profile for Drag&Drop Planning in Graphic [page 395]

Dispatching takes place by dragging the bar of an operation from a chart of the non-dispatched operations (pool) to the time stream of a work center of a chart of the dispatched operations. Dragging in the opposite direction results in the deallocation of an operation.

Bars can be moved forwards or backwards within their chart to adjust the times of the operations. The operations are moved to the time stream. Moving is possible for both dispatched and deallocated operations. However, when you move deallocated operations, an HJPT function is used since the standard version of the capacity planning table does not support moving of deallocated operations. S_MVEORD Move Order Operations in the Pool [page 237]

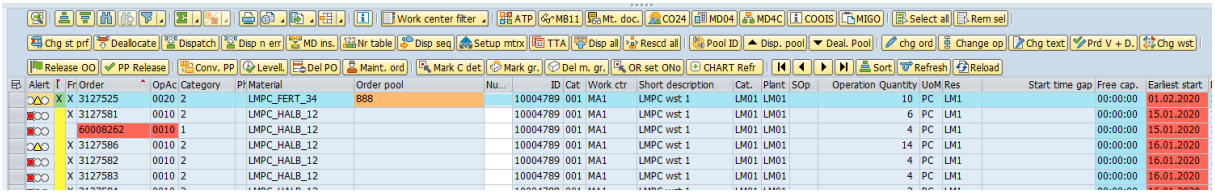
You can change the work center by dragging and dropping operations. The details about the change of work center using drag and drop are described in the documentation for the action codes for the work center change. S_SARBPL and S_HARBPL Change the Work Center for Operations of Production and Process Orders [page 172], S_SARBFV Change of Work Center for Operations by Changing the Production Version [page 175]

The standard function for dragging and dropping in the graphic can be replaced by an LMPC HJPT action code. If the standard function has been replaced, the logic and the strategy profile of the defined action code are used when dragging and dropping. Action Code Trigger

> **Note**
>
> You can select multiple operations by holding down the Shift key. Likewise, multiple operations can be moved at the same time using drag and drop when the Shift key is held down. However, when you release the operations, the work center and the time at which the mouse pointer is located (also visible on the vertical red slot line) are transferred to the operations as the start time and work center. Therefore, only operations of one capacity should be selected and moved at the same time. If operations of different capacities are selected and moved at the same time, all these operations are rescheduled to the capacity on which the mouse pointer is located. It is not possible to use drag and drop to move operations of different capacities at the same time in such a way that they all remain in their respective capacities.

2.4 ALV Grid

Overview of LMPC HJPT ALV Grid



Example LMPC HJPT ALV Grid

One of the three subareas of the HJPT planning table is the ALV Grid.

The ALV Grid contains the data for the operations of the orders that are open in the HJPT planning table.

There is one line in the ALV Grid for each capacity requirement of an operation on a capacity.

A large number of fields are available in the ALV Grid of the HJPT planning table. The layout settings of the ALV Grid determine which of the available fields are displayed. ALV Grid Layout [page 66]

The data in the displayed fields is filled using data providers. The data providers and the available data are described in a separate section of the documentation. LMPC HJPT Data Provider [page 432]

The fields of the ALV Grid can be colored using rules in Customizing. This means that you can increase the clarity and make the planner aware of problematic situations. For example, if the requirements date is not met, the field is colored red. Coloring the ALV Grid [page 71]

The configurable toolbar is above the ALV Grid. The buttons in the toolbar can be used to call the functions of the HJPT planning table, which are known as action codes. Action Code Call Using Buttons in ALV Grid [page 74]

Functions can be executed for selected data records in the ALV Grid using keyboard commands. Action Code Call Using Keyboard Commands [page 76]

By right-clicking on the fields of the ALV Grid, you can call the functions of the context menu. Action codes can also be defined here. Action Code Call via the Context Menu [page 77]

By double-clicking or clicking the hotspot on certain fields of the ALV Grid, you can call additional action codes. For example, you can navigate to the material master display using the material number. S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

The function options in the HJPT planning table are described in the action codes section. Action Codes - Functions of the HJPT Planning Table [page 99]

2.4.1 ALV Grid Layout

You can use the layout settings to select fields that are to be displayed. It is also possible to define the sorting and filtering of the data. In addition, special display options, such as totals rows and stripe patterns, can be activated.

The LMPC delivery delivers test layouts that show examples of a field selection and sorting:

- /LMPC_DD_EX – LMPC demand-driven execution view
- /LMPC_DD_PL – LMPC demand-driven planning view
- /LMPC_PI_1 - LMPC process industry 1
- /LMPC_T01 - test layout 1
- /LMPC_T02 - test layout 2

You can define and save your own layouts.

In the layout, you can define filters for restricting the amount of data displayed. Instead of defining fixed filters in the layout, you can also define action codes that set and remove temporary filter settings. S_FILTR, S_FILTRE Set and Remove Filters [page 388]

Layouts can be preselected automatically when the planning table is started. It is also possible that the layout temporarily selected by the user while working with the planning table is retained when saving and reloading the data.

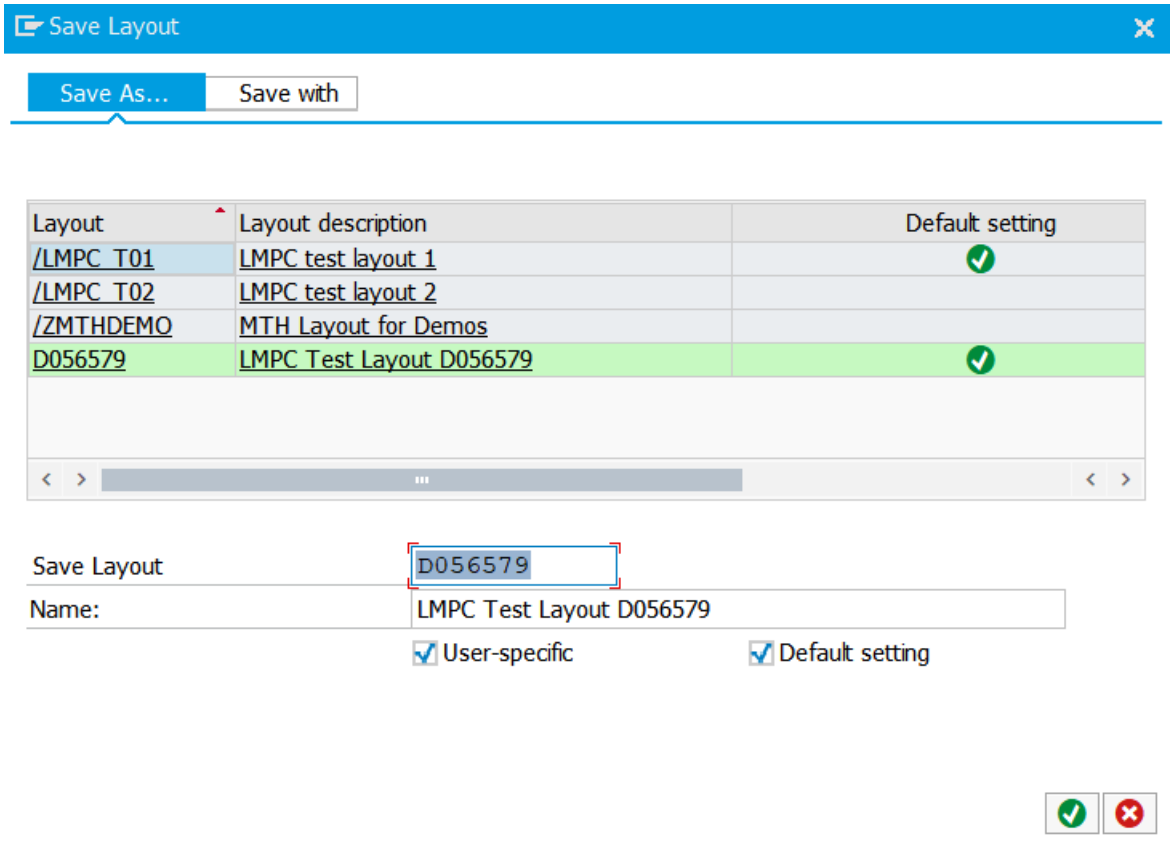
In the HJPT planning table, there are four options for defining the behavior of the application with regard to layouts:

- Save the layout as a default setting using the standard function of the ALV Grid.
- Define a layout in the settings for the HJPT overall profile.
- Define a layout in the variant for the automatic start of the HJPT planning table.
- The last layout used is retained when the data is saved and reloaded.

Save Layout as Default Setting

Layouts can be saved for all users (standard layout) or on a user-specific basis for the individual user.

Standard layouts that are valid for all users begin with a slash. User-specific layouts begin with a letter.



Saving Layouts

You can use the selection field for the default setting to save layouts as initial variants. When you open the planning table, the saved initial variant is selected automatically. The following rule applies: User-specific initial variant before variant for all users.

Layouts can be grouped together. Groups of layouts can be assigned to an HJPT profile so that the layouts are only available to users for a specific HJPT overall profile.

These functions are standard functions of ALV Grids.

Layouts can be protected against changes. The respective layout can then no longer be changed by the user. Parameter Settings for the HJPT ALV Grid

Presetting the ALV Grid Layout When Opening the Planning Table

You can use the settings for the overall profile to preset an ALV Grid layout for the start of the planning table. Parameter Settings for the HJPT ALV Grid

A layout can also be defined for the automatic start of the planning table. This overrides all other settings. C02 Transaction /LMPC/AS_CUST, M04 Transaction /LMPC/AS_CUSTS: LMPC HJPT Planning Table Autostart

In the overall profile, you can also specify that the last layout used is retained when the data is saved and reloaded. Configuration of HJPT Overall Profile

The behavior of the application depends on the selected settings:

- The layout that the user defined as the default setting in the ALV Grid is used if no specific layout is defined in the additional settings of the HJPT planning table. If the user temporarily selects a different layout while working in the planning table and the option to retain the layout in the overall profile is activated, the last selected layout remains after saving and reloading the data. If the option to retain the layout is not activated, the layout is reset to the default setting.
- If a specific layout is defined in the settings of the overall profile, this layout is used instead of the standard layout stored in the ALV Grid when the planning table is started. If the user temporarily selects a different layout while working in the planning table and the option to retain the layout in the overall profile is activated, the last used layout is restored after saving and reloading the data. If the option to retain the layout is not activated, the layout is reset to the settings of the overall profile. When you exit and restart the planning table, the temporarily selected layout is not retained. Instead, the layout defined in the overall profile is used.
- If a layout is defined in the settings for automatic start, this layout is used instead of the standard layout in the ALV Grid and also instead of the layout defined in the overall profile. If the user temporarily selects a different layout while working in the planning table and the option to retain the layout in the overall profile is activated, the last used layout is restored after saving and reloading the data. If the option to keep the layout is not enabled, the layout is reset to the auto-start settings.
- When you switch to a different autostart variant in transaction /LMPC/HJPT_AS, the behavior is the same as when you restart the application. If a layout is stored in the newly selected autostart variant, this is used. If no layout information exists in the newly selected autostart variant, the layout defined in the HJPT overall profile is used instead. If no layout exists in the settings for this variant either, the standard layout of the ALV Grid is used.

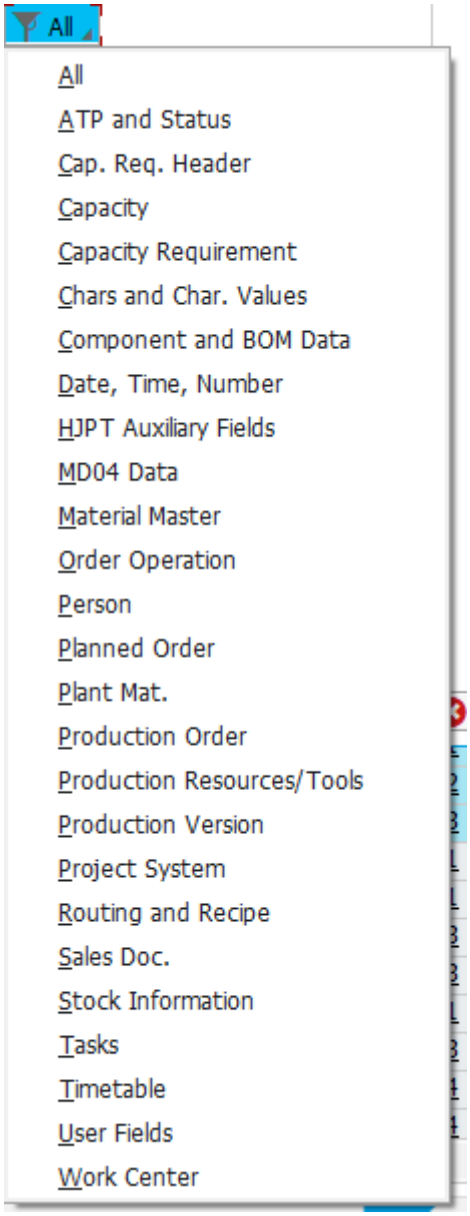
2.4.2 Layout Groups

Grouping of HJPT Fields of ALV Grid

Currently, more than 1400 fields are available in the ALV Grid of the HJPT planning table.

To make it easier to find fields, ALV Grid layout groups were created.

The following groups are available:



HJPT Layout Groups

The LMPC documentation does not explain every available field of the ALV Grid.

Most of the fields come from the data tables of the capacity planning table. These standard fields are not described.

In addition to the standard fields, the data providers are used to read additional information. The description of the additional fields can be found in the individual chapters for the data provider. LMPC HJPT Data Provider [page 432]

Since the data records in the ALV Grid are based on the capacity requirements of the order operations, the “Capacity Requirements” group is particularly important for planning in the HJPT planning table.

The temporal position of the operations can be read from the fields for the capacity requirements dates. There are fields for the earliest date and fields for the latest date. Both dates are always calculated in scheduling.

If a wait time is maintained in an operation, the date fields differ.

The start times of the latest date start only after the wait time. Meaning an operation must wait before production is started. The wait time cannot be reduced for the latest date. It is not possible to reduce the wait time for the latest date in a dispatching function to start an operation earlier. This is only possible manually by, for example, changing the wait time entered in the operation of the production order before dispatching.

The earliest date of the operations is calculated in PP using backward scheduling with reference to the latest date. It is possible to reduce the wait time. To do this, a reduction is set in the strategy profile used during dispatching. For the explanation of configuring the strategy profile, see the LMPC Configuration Guide. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

Which date you use for your production planning is a decision about how to model your processes. An LMPC consultant can be of assistance.

In the HJPT planning table, the bars display the position of the operations according to the latest date. The related fields in the ALV Grid are:

- Latest start/date
- Latest start/time
- Latest end/date
- Latest end/time

If you have not set a wait time for production orders and PP planned orders, these times in these fields are identical to the times of the earliest dates. These can be found in the following fields:

- Earliest start/date
- Earliest start/time
- Earliest end/date
- Earliest end/time

It is possible to display the start time of the earliest date in the graphic. To do this, show additional graphical elements. For the explanations on this, see the LMPC Configuration Guide, in the following section: Additional Graphic Elements

> → Remember
>
> The application updates the fields of the capacity requirements for each planning activity. Other fields that are additionally read can only be updated by saving, for example. This is different for each field. For example, for the basic dates of orders, it depends on the scheduling settings whether the fields are updated during planning or only when planning is saved.

With your LMPC HJPT delivery, you receive sample layouts for the ALV Grid that show the most important fields for planning.

If you have any questions about available data or the correct field selection, please contact your LMPC consultant.

> ⚠ Restriction
>
> The system does not supply all the fields of the ALV Grid with data. Since standard structures of the standard SAP system were used in the definition of the basic structure of the ALV Grid, there are fields that are not filled with data. This is not an error, it is due to the architecture of the consulting solution.

→ Tip

It is possible to create your own groups and to sort fields there. For instructions on this, see the LMPC Configuration Guide.C11 Transaction /LMPC/GRP: Group ALV Grid Fields in Layout Groups

It is possible to rename fields and remove them from the field list. For instructions on this, see the LMPC Configuration Guide.Change ALV Grid Fields of HJPT Planning Table

2.4.3 Coloring the ALV Grid

The ALV Grid can be colored using freely configurable rules. Individual fields or entire rows can be colored, depending on the data in the ALV Grid.



Example of a Colored ALV Grid

There are two data providers for coloring the fields of the ALV Grid:

- Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]
- Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

For a description of using coloring, see the sections for the respective data providers.

2.4.4 Sorting the ALV Grid List

Sorting the LMPC ALV Grid

Prerequisite

The layout settings of the ALV Grid determine which fields the ALV Grid list is sorted by.

Use

The ALV Grid list can be sorted in two different ways.

- Automatically when calling and updating the HJPT planning table
- Manually by dragging and dropping

Sorting the ALV Grid data records improves clarity.

For dispatching and rescheduling functions, this sequence is used to determine the sequence for dispatching. For many dispatching functions, the selected orders are dispatched in the sequence in which they are sorted in the ALV Grid.

Procedure

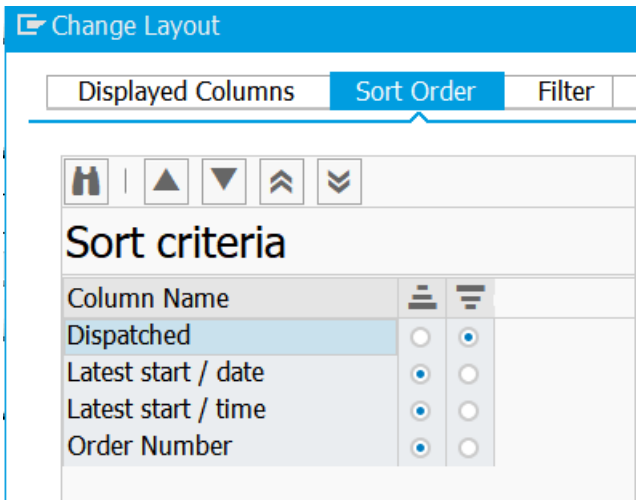
Automatic Sorting

Automatic sorting is carried out using the layout settings of the ALV Grid.

All fields available in the layout can be used.

In the header bar of the ALV Grid, call the layout settings and call the “Sorting” tab page.

The LMPC HJPT test profiles provide an example sort setting.



Sorting Example

In the example, sorting is carried out according to the following fields:

- Dispatching status
- Latest start date for the capacity requirement
- Latest start time for the capacity requirement
- Order number

You can adjust the sort settings as required. You can save them using the layout.

When you call the HJPT planning table, the preset layout settings are called. If no user-specific layout is saved, the settings are read from a general layout.

> → Tip
>
> You can use the settings for the HJPT profile to predefine a layout. This setting overrides all user-specific predefined profiles. For details on this, see the LMPC Configuration Guide. Parameter Settings for the HJPT ALV Grid

If you want to arrange the data in the ALV Grid according to the predefined sorting, you can do this in four ways:

- Sort the data using the action code S_SORT.
- Refresh the data using the action code S_REFR.
- Save the data in the SAP GUI or using the action code S_SAVE.
- Reload the data using the action code S_RELOAD.

Note that sorting has an effect on the LMPC planning functions since the data records are transferred to the functions according to the sorting sequence.

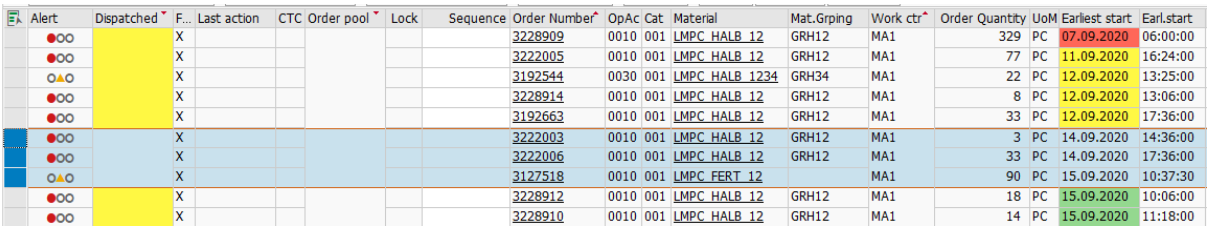
Manual Sorting

You can sort the rows in the ALV Grid manually by selecting rows and moving them by dragging and dropping them.

In this way, you create your own manual sequence. The operations are transferred to the relevant planning function in this sequence.

> → Remember
>
> When you refresh the data, the manually created sequence is lost because the data records are then sorted according to the sort criteria of the ALV Grid.

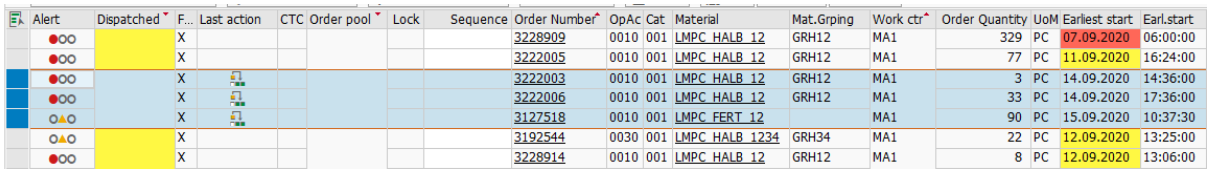
Select one or more rows in the ALV Grid:



Alert	Dispatched	F...	Last action	CTC	Order pool	Lock	Sequence	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start
●○○		X						3228909	0010	001	LMPC_HALB_12	GRH12	MA1	329	PC	07.09.2020	06:00:00
●○○		X						3222005	0010	001	LMPC_HALB_12	GRH12	MA1	77	PC	11.09.2020	16:24:00
○▲○		X						3192544	0030	001	LMPC_HALB_1234	GRH34	MA1	22	PC	12.09.2020	13:25:00
●○○		X						3228914	0010	001	LMPC_HALB_12	GRH12	MA1	8	PC	12.09.2020	13:06:00
●○○		X						3192663	0010	001	LMPC_HALB_12	GRH12	MA1	33	PC	12.09.2020	17:36:00
●○○		X						3222003	0010	001	LMPC_HALB_12	GRH12	MA1	3	PC	14.09.2020	14:36:00
●○○		X						3222006	0010	001	LMPC_HALB_12	GRH12	MA1	33	PC	14.09.2020	17:36:00
○▲○		X						3127518	0010	001	LMPC_FERT_12		MA1	90	PC	15.09.2020	10:37:30
●○○		X						3228912	0010	001	LMPC_HALB_12	GRH12	MA1	18	PC	15.09.2020	10:06:00
●○○		X						3228910	0010	001	LMPC_HALB_12	GRH12	MA1	14	PC	15.09.2020	11:18:00

Selection

Drag it to the desired position. To do this, click on one of the selection fields at the left-hand edge, hold down the mouse button, and move the rows to the desired position. Then release the mouse button.



Alert	Dispatched	F...	Last action	CTC	Order pool	Lock	Sequence	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start
●○○		X						3228909	0010	001	LMPC_HALB_12	GRH12	MA1	329	PC	07.09.2020	06:00:00
●○○		X						3222005	0010	001	LMPC_HALB_12	GRH12	MA1	77	PC	11.09.2020	16:24:00
●○○		X						3222003	0010	001	LMPC_HALB_12	GRH12	MA1	3	PC	14.09.2020	14:36:00
●○○		X						3222006	0010	001	LMPC_HALB_12	GRH12	MA1	33	PC	14.09.2020	17:36:00
○▲○		X						3127518	0010	001	LMPC_FERT_12		MA1	90	PC	15.09.2020	10:37:30
○▲○		X						3192544	0030	001	LMPC_HALB_1234	GRH34	MA1	22	PC	12.09.2020	13:25:00
●○○		X						3228914	0010	001	LMPC_HALB_12	GRH12	MA1	8	PC	12.09.2020	13:06:00

Result of Move

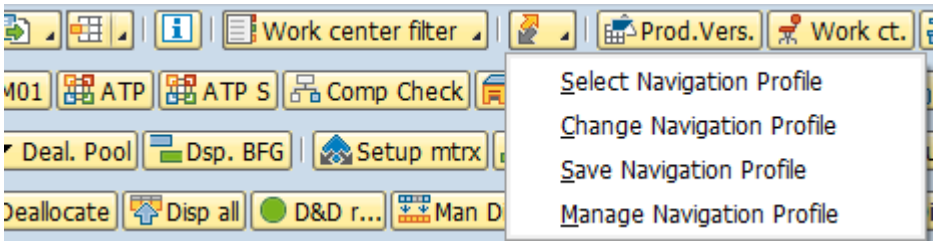
Result: The data has been moved to the desired position. When the data records are moved, they remain selected so that an action code can be executed on them if necessary. The "Last Action" field displays a drag and drop icon for identifying the moved records.

> ⓘ Note
>
> You can only move operations if the work center of the selected operations is identical to the target operation work center that you are moving these operations to. It is only possible to move operations within work centers. If you want to use manual sorting and have several work centers open in the HJPT planning table, it is recommended that you sort the data records by work center. This makes it easier to work with the function.

2.4.5 Navigation Profiles

Individual Configuration of ALV Grid Menu Bar and ALV Grid Context Menu

Navigation profiles create an option for adjusting the menu bar of the ALV Grid and the context menu to meet the requirements of the planner.



Selection of Navigation Profile

To be able to use navigation profiles, they must be activated in Customizing for the HJPT overall profile. After lockout/tagout, the button for the navigation profile is next to the standard functions of the ALV Grid as the first or second button. (As a second button, if the optional work center filter is also activated).

For details on configuring the navigation profiles, see the LMPC Configuration Guide.ALV Grid Navigation Profiles

The advantage of using navigation profiles is that each user can assemble the action codes they need for their daily work.

This allows a user to structure the toolbar above the ALV Grid and the context menu of the ALV Grid itself.

Users with different tasks can use the same HJPT overall profile and only see the functions that are important for them.

In addition to the HJPT action codes, you can add any SAP transactions to the navigation profiles.

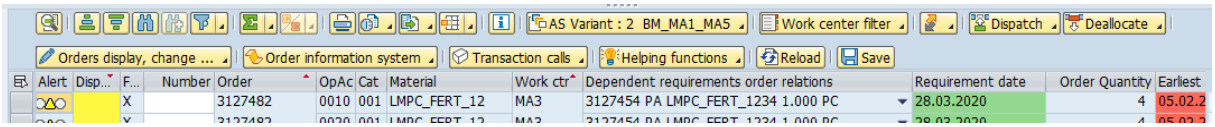
> ⓘ Note
>
> Navigation profiles allow the individual planner to individually configure the function selection. Therefore, they can only be saved on a user-specific basis.
>
> The standard way to configure LMPC functions and SAP transactions for use in the HJPT planning table is the context profile of the HJPT overall profile. These settings are the same for all planners who use the same overall profile. HJPT Context Profiles
>
> In conjunction with transaction /LMPC/HJPT_AS for starting the HJPT planning table automatically, the user need only click to open the work cockpit. Transaction /LMPC/HJPT_AS LMPC HJPT Planning Table Autostart [page 21]

2.4.6 Action Code Call Using Buttons in ALV Grid

Arrangement of Action Codes Above the ALV Grid

The row with buttons for executing LMPC HJPT functions is located above the ALV Grid. In addition to the standard functions of the ALV Grid, such as sorting, filtering, and so on, the buttons for the LMPC HJPT action codes are displayed.

The functions of the HJPT planning table can be displayed individually or as a group.

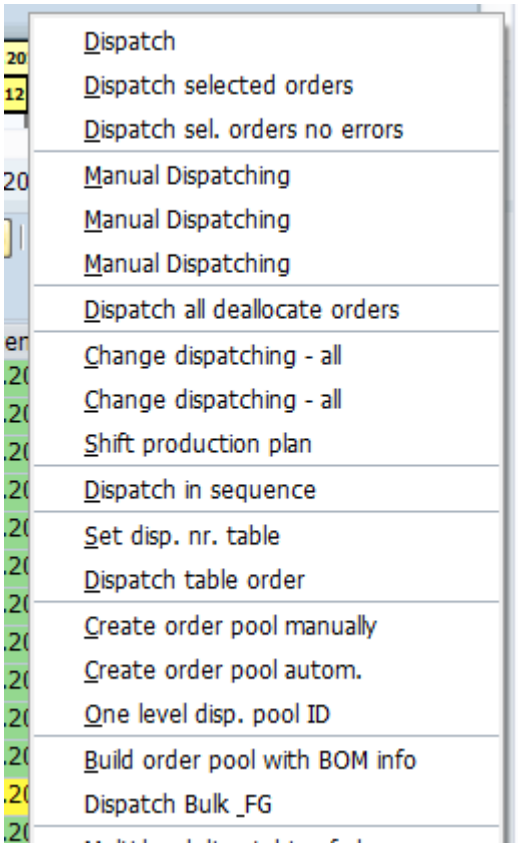


Example of Arrangement of Action Codes

In this example, the functions for reloading the data and saving the data are set to individual buttons. This is also possible for all other LMPC action codes.

All other action codes are grouped according to their functionality in this example.

For example, all the functions for dispatching are behind the Dispatch button.



Grouped Action Codes

The advantage of grouping is that the number of function keys above the ALV Grid can be reduced and therefore display space can be saved.

Whether the LMPC HJPT action codes are displayed or grouped as individual buttons depends on the Customizing settings. The settings are made using the action code triggers.

For details, see the LMPC Configuration Guide. Action Code Trigger

2.4.7 Action Code Call Using Keyboard Commands

Keyboard Commands for HJPT Action Codes

To process operations in the HJPT planning table using the ALV Grid, you can map HJPT action codes to keyboard commands.

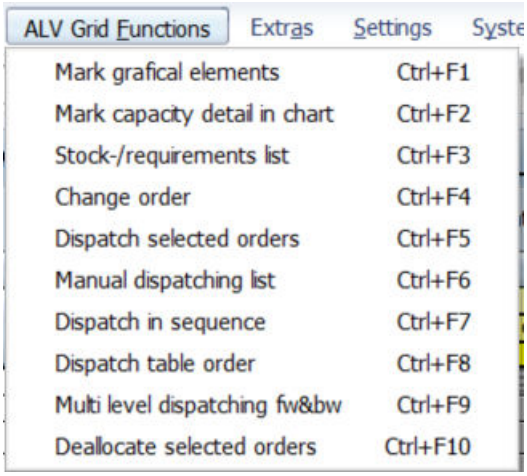
This simplifies and accelerates the execution of action codes. After the operations have been selected in the ALV Grid, the keyboard is executed for the desired action code.

Action codes are assigned to the toolbar commands using action code triggers. For detailed information, see the section on action code triggers in the LMPC Configuration Guide. Action Code Trigger

The LMPC example profiles provide suggestions for configuration.

You can find out which action codes are mapped to each of the keyboard commands via the menu of the HJPT planning table.

Menu -> ALV Grid Functions.



ALV Grid Functions Using Keyboard Commands

You can also find this information:

- In the quick info for the action code button in the menu bar of the ALV Grid.
- In the function text of the action codes for dropdown function keys in the menu bar of the ALV Grid.
- In the context menu for calling action codes via the operations in the ALV Grid.

> → Remember
>
> If you are using a navigation profile, enter the keyboard command manually in the quick info text, as this is not filled automatically.

A maximum of 12 HJPT action codes can be mapped to keyboard commands.

In the example profiles, the keyboard commands are mapped as follows:

Keyboard Commands in Example Configuration

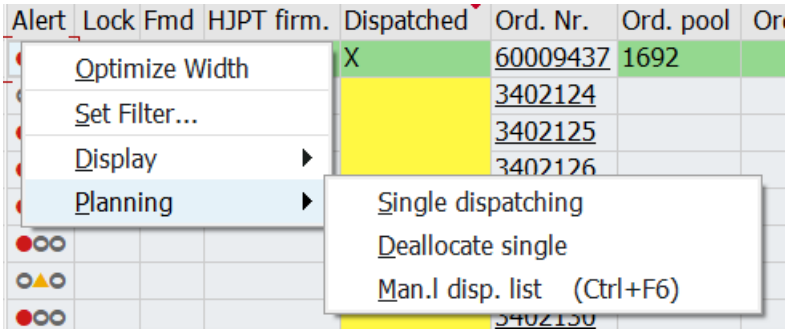
Keyboard Command	Action Code
Ctrl + F1	S_MAGR
Ctrl + F2	S_SELCAP
Ctrl + F3	S_MD04
Ctrl + F4	S_AK02
Ctrl + F5	S_EPSEL
Ctrl + F6	S_MANPL
Ctrl + F7	S_EPSEQ
Ctrl + F8	S_EPTBSQ
Ctrl + F9	S_EPML
Ctrl + F10	S_APSEL
Ctrl + F11	Not mapped
Ctrl + F12	Not mapped

2.4.8 Action Code Call via the Context Menu

It is possible to define functions of the HJPT planning table in the context profile of the ALV Grid.

To call the context profile, click in a field of the ALV Grid and then press the right-hand mouse button.

A selection menu for functions appears.



Example of Context Profile

The first two functions are standard functions of the ALV Grid:

- Optimizing column width
- Configuring filter settings

All other functions are provided in Customizing for the HJPT planning table. It is possible to change the selection of functions.

The sample profiles delivered for the HJPT planning table contain two menu options in the context profile:

- Display
- Plan

These menu options contain the HJPT functions as subitems. To execute the respective function, use the mouse to select it.

If the settings for the functions have been changed, the functions can also be available directly in the context menu.

The field of the data record that you clicked defines the data record that is processed with the selected function.

If you have selected several data records in the ALV Grid, you can also click in any field of these data records and execute the required function. The function is then executed for all selected data records.

Related Information

Action Code Trigger
Nested Context Profiles

2.5 Additional Windows

Windows with Additional Information

Windows for displaying additional data are delivered for the LMPC planning table.

There are two windows:

- Chart Window [page 79]
- Window for Completed Production and Process Orders [page 97]

Various charts can be displayed in the window for the charts.

These are charts with additional information on the planning data, such as capacity load, development of the stocking situation, and the list of order relations.

The window for the data for completed production and process orders enables you to display data that is not available in the ALV Grid of the HJPT planning table.

The additional windows can be displayed either as a separate window or integrated in the main window. The display of charts is already configured in the delivered test profiles.

For instructions on showing additional windows, see the LMPC Configuration Guide. HJPT Window Configuration

> **Note**
>
> The planning table remembers the size and position of the window each time you save. If a window is closed, when you save, the planning table remembers that the window was closed and no longer opens the

window the next time you start the planning table. You can use the action code S_RESSIZ to reopen closed windows. S_RESSIZ Open or reset all HJPT dialog boxes [page 410]

For SAP GUI 7.70 patch level 10, the buttons for minimizing and maximizing modeless dialog boxes have been removed. As of this SAP GUI version, there is only the pushbutton for closing the windows. For details, see SAP Note 3297294.

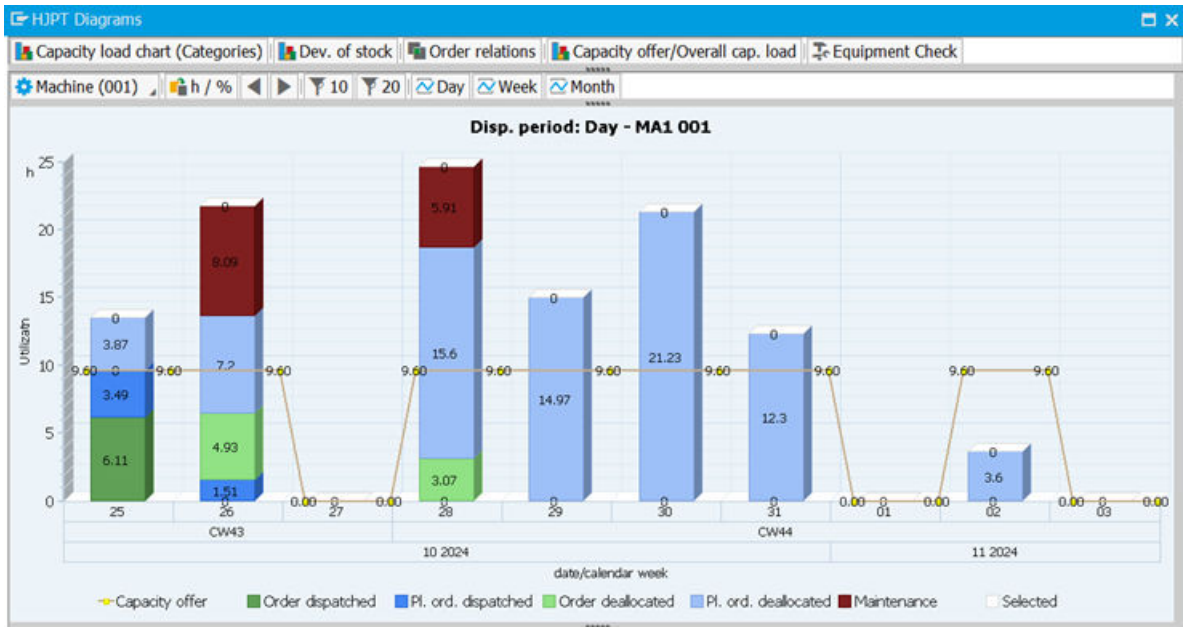
Related Information

Chart Window [page 79]
Window for Completed Production and Process Orders [page 97]
HJPT Window Configuration
C14 Transaction /LMPC/VIEW: Settings for Additional Windows

2.5.1 Chart Window

Additional window for charts.

In the HJPT planning table, there is a window for additional charts. It is possible to display up to four charts there.



Example of Windows with Charts

The following charts can be displayed:

- Capacity Load (Categories) [page 81]
- Capacity Requirements (Categories) [page 83]

- Capacity Offer/Overall Capacity Load [page 83]
- Development of the Stocking Situation [page 85]
- List of Order Relations [page 86]

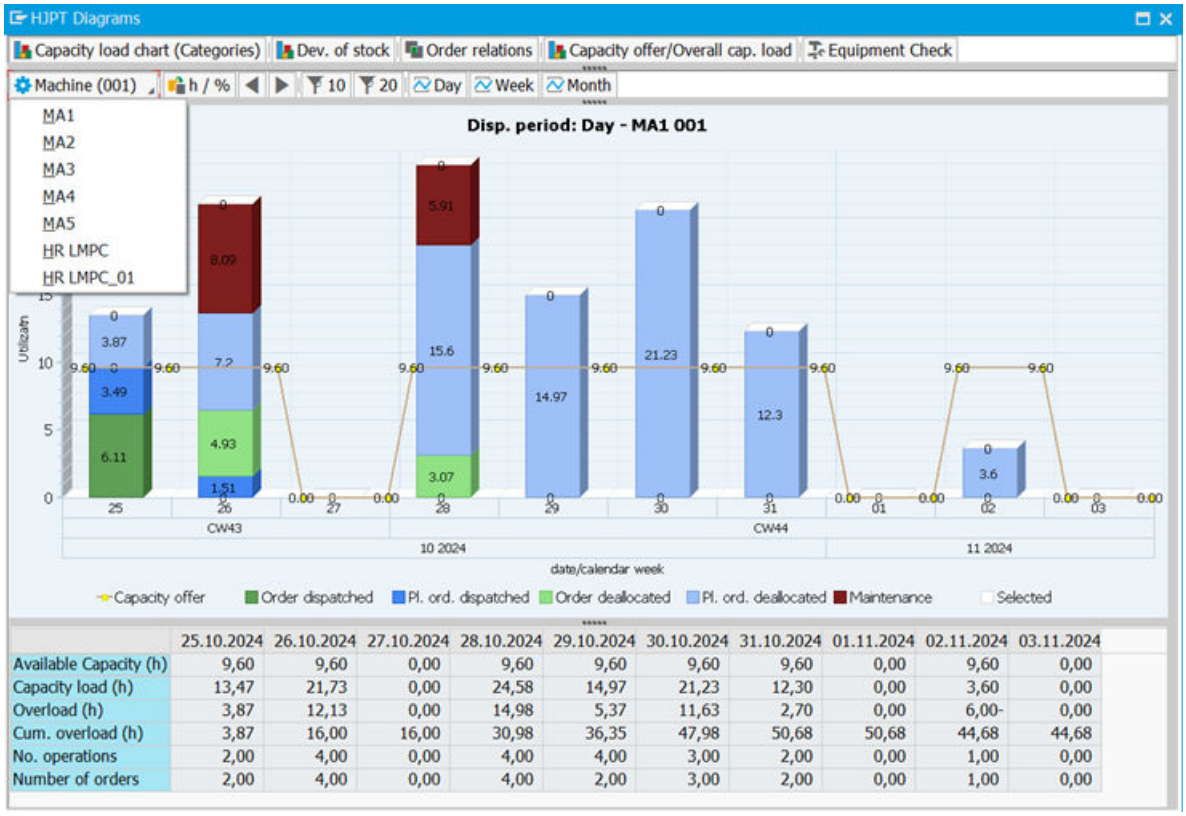
For the settings for the charts, see the LMPC Configuration Guide.Parameter Settings for Chart Window

The window for charts can be displayed as a separate dialog box or integrated into the main window. In the LMPC HJPT sample profiles delivered, the window is displayed as a separate dialog box. For the settings for displaying windows, see the LMPC Configuration Guide. HJPT Window Configuration

If the window is used as a dialog box, the planning table remembers the position and size of the window when you save. Saving takes place with reference to the user name and the HJPT overall profile. When you reload the data or access the planning table again, the window is displayed in the position in which it was last saved.

> → Tip
>
> If you do not use the window all the time, it is recommended that you close the window and then save it. The window will then no longer open in the future. It can be reopened using the action code S_RES_CV.
>
> S_RES_CV Open or Reset HJPT Window for Charts [page 412]
>
> The action codes for calling the data for the individual charts also open the window.
>
> List of Order Relations [page 86]
>
> S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]
>
> S_SELEQ Select Data Records in Equipment Check Diagram [page 344]

2.5.1.1 Capacity Load (Categories)



	25.10.2024	26.10.2024	27.10.2024	28.10.2024	29.10.2024	30.10.2024	31.10.2024	01.11.2024	02.11.2024	03.11.2024
Available Capacity (h)	9,60	9,60	0,00	9,60	9,60	9,60	9,60	0,00	9,60	0,00
Capacity load (h)	13,47	21,73	0,00	24,58	14,97	21,23	12,30	0,00	3,60	0,00
Overload (h)	3,87	12,13	0,00	14,98	5,37	11,63	2,70	0,00	6,00-	0,00
Cum. overload (h)	3,87	16,00	16,00	30,98	36,35	47,98	50,68	50,68	44,68	44,68
No. operations	2,00	4,00	0,00	4,00	4,00	3,00	2,00	0,00	1,00	0,00
Number of orders	2,00	4,00	0,00	4,00	2,00	3,00	2,00	0,00	1,00	0,00

Capacity Load Chart

The chart shows the capacity load by category. A maximum of five categories can be configured in Customizing (see LMPC Configuration Guide C04 Transaction /LMPC/CUSTCAP: Categories for Capacity Utilization Chart).

The capacity requirements for each period are represented by colored bars. The capacity requirement of each operation is distributed evenly between the start and end of the operation.

The capacity offer is represented by a line. The load can be read by comparing the requirements and the offer.

Each capacity from the planning table selection can be accessed and switched by means of a button. If the corresponding setting has been made in Customizing, data can also be displayed aggregated over the work center hierarchies. A button with the label 'HR' plus the name of the hierarchy is displayed in the selection for each hierarchy (HJPT Window Configuration).

Special Logics for Distributing Capacity Requirement

If the **HISTORY** parameter is set in Customizing, all requirements from the past are aggregated to the current date. The remaining offer for the current date is then also calculated to the exact minute.

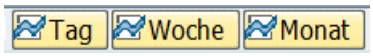
Dispatched operations with **HJPT firming indicators**: If the function for dispatching using HJPT-fixed operations is used, operations are dispatched in parallel to operations with an HJPT firming indicator. In the period that the operation with the HJPT firming indicator occupies, operations set in parallel do not have a capacity requirement. An HJPT-fixed operation acts like a break for the parallel operation. This is extended accordingly. In the chart, no capacity requirement is calculated for this period for the operation set in parallel. The capacity requirements of the parallel operations are converted proportionally to the subareas before and after the HJPT-fixed operation. Planning with Consideration of HJPT Firming Indicator [page 328]

> **Note**
>
> The calculation for HJPT-fixed operations is correct only if the capacity offer has not been changed since dispatching.

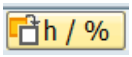
Functions of the Chart

The display always starts with the current date. You can use the forward and backward buttons  to scroll forwards and backwards through time. In the daily view, if 30 days or less are displayed, each time you press a key the system scrolls 5 days. If there are more than 30 days, the display shifts by 10 days. You can use a parameter in Customizing to customize the step size for scrolling in the daily view. In the weekly view, one week is always scrolled regardless of the settings; in the monthly view, one month is scrolled. Parameter Settings for Chart Window

You can use the filter buttons  to change the display period. You can define the length of the display period in Customizing.

If you have made the corresponding Customizing settings, you can use the buttons Day, Week, Month  to choose the data aggregation.

Whenever the display period is changed, the display is always reset to the current period. This is the current day, week, or month.

You can use the button h /%  to switch the axis for the load between hours and percent. Percentages are displayed in the chart as a number with two decimal places.

Selection of Data Records

If you click on a bar in the chart, you select the related operations in the ALV Grid of the LMPC planning table.

Conversely, you can use the action code S_SELCAP to display the capacity requirements of selected rows of the ALV Grid as a white bar range. S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]

> **Restriction**
>
> If bars were marked white using S_SELCAP, these white bars cannot be used to select the data records in the ALV Grid by clicking them. Selecting data records in the ALV Grid only works for colored bars.

Data in the ALV Grid

An ALV Grid with key figures for the chart is displayed below the chart line. This key figure list can be hidden using Customizing settings.

The following key figures are displayed:

- Available capacity (h or %)
- Capacity load (h or %)
- Overload (h or %)
- Cumulative overload (h or %)
- Number of operations

- Number of orders

The cumulated overload adds the overload in the displayed area, not for the entire evaluation period.

The number of operations or orders counts the elements on their start day. If an operation or order is longer than one day, it is counted only on the start day.

2.5.1.2 Capacity Requirements (Categories)

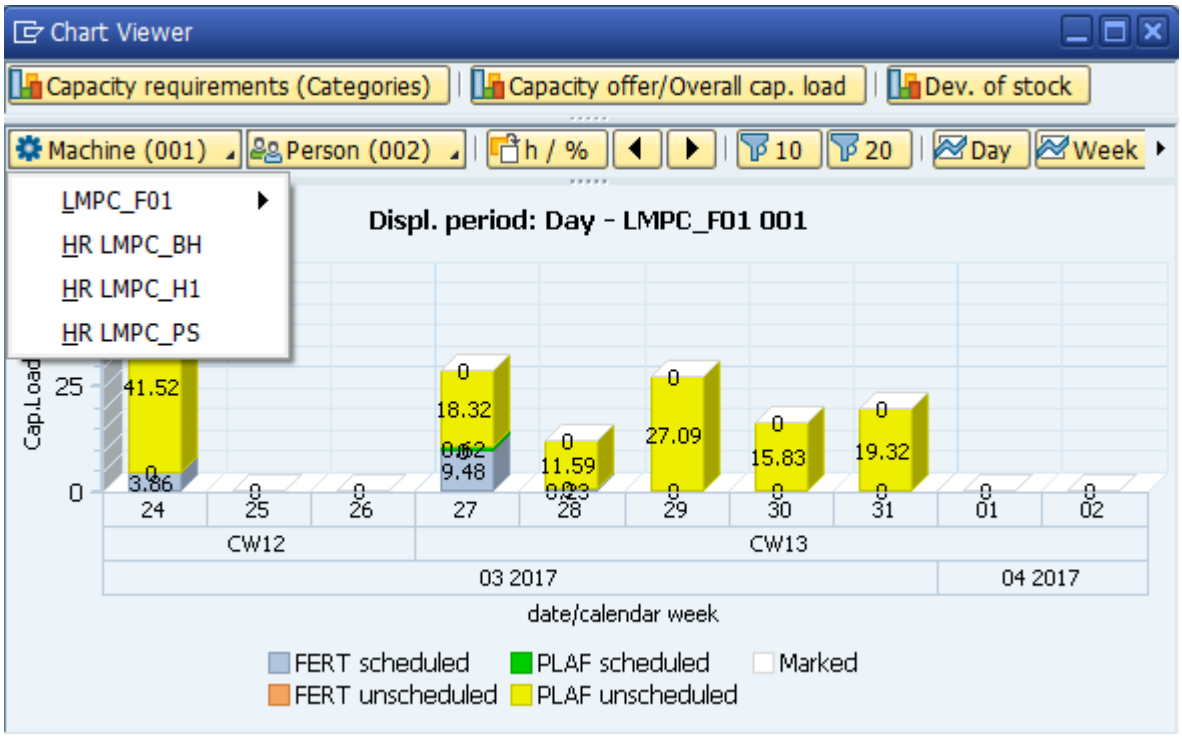


Chart of the Capacity Requirements

The chart shows the capacity requirements by category. A maximum of five categories can be configured in Customizing (see LMPC Configuration Guide). The chart has the same functionality as the chart for the capacity load. However, it does not have the line with the capacity offer.

2.5.1.3 Capacity Offer/Overall Capacity Load

This chart contains two display options.

You can use the key “Load<->Offer” cap.load <-> offer to toggle between the overall capacity load and the pure capacity offer.

All other keys have the same functionality as in the chart for the capacity load. Capacity Load (Categories) [page 81]

Display of Capacity Offer

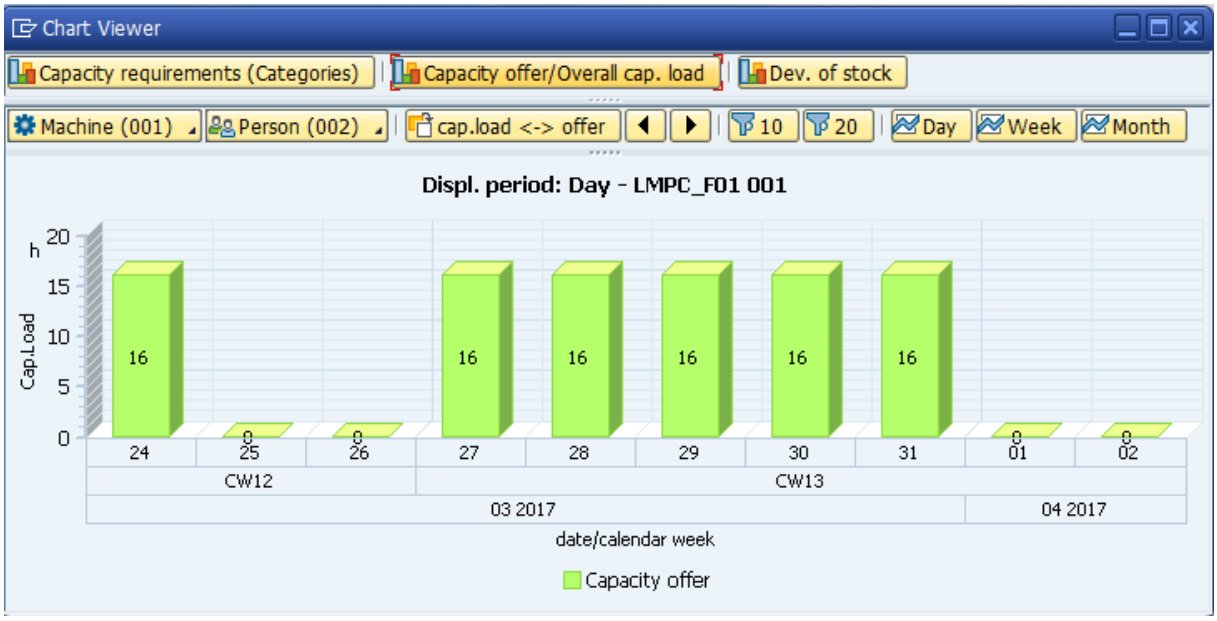


Chart of Capacity Offer

This chart shows the offer of the respective capacity per day. If the 'HISTORY' parameter is set in Customizing, the remaining offer for the current day is displayed; otherwise, the overall offer is displayed.

Display of Overall Capacity Load

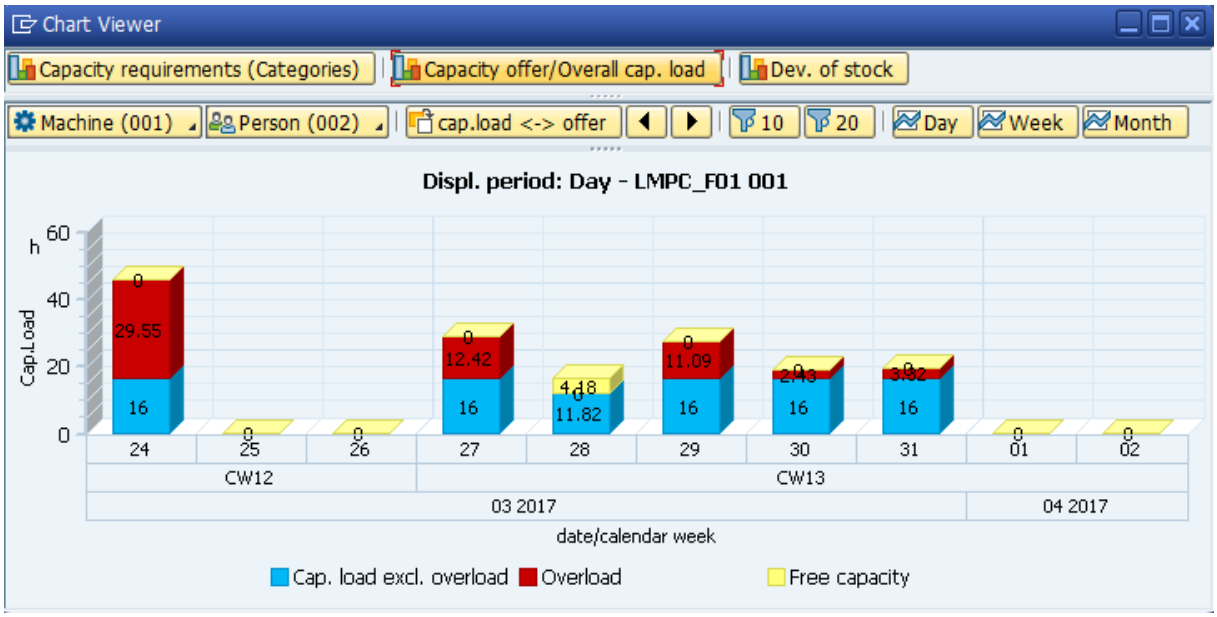


Chart for Overall Capacity Load

This chart shows three categories:

- The free, unused capacity (yellow bars).
- The requirement within the capacity offered (blue bars), which can also be described as normal load.
- The requirement that exceeds the capacity offered (red bars), which is called the overload.

The capacity requirement results from the operations that are scheduled at the respective work center. It does not matter whether an operation has been dispatched.

The assignment of which capacity requirement is counted for the load or overload results from the chronological sequence of the start time of the operations of orders. Depending on the distribution key set, sorting takes place according to either the earliest or latest start times of the capacity requirements.

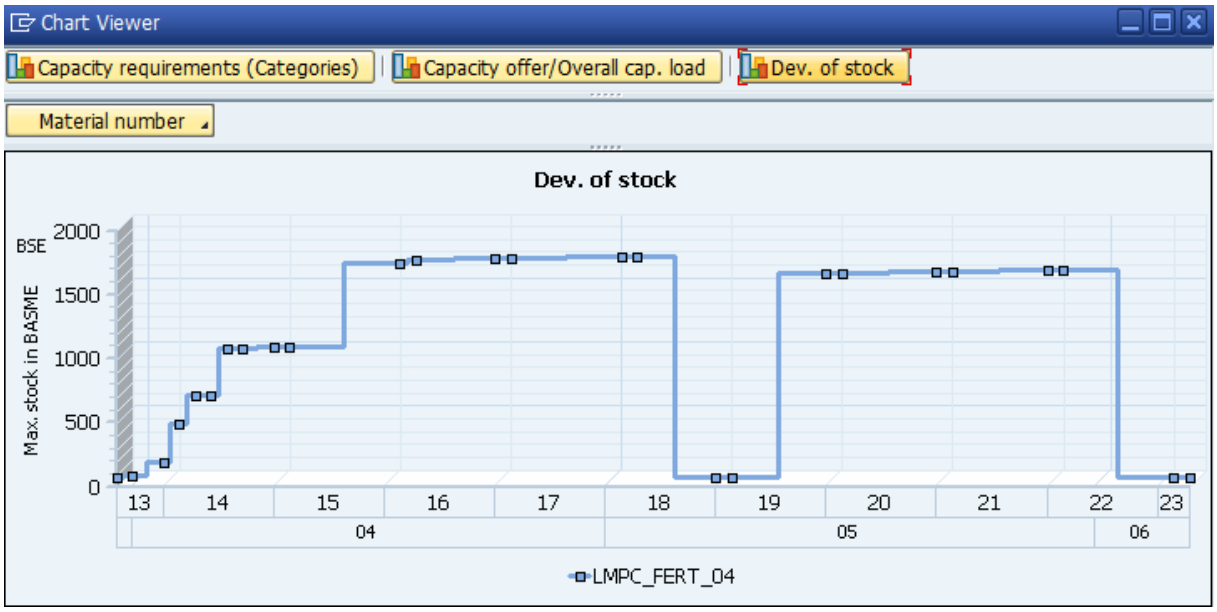
Clicking on a blue bar in the chart selects the operations of the normal load belonging to the capacity requirement in the ALV Grid of the HJPT planning table.

Clicking on a red bar in the chart selects the overload operations belonging to the capacity requirement in the ALV Grid.

> → Remember
>
> An operation can be counted as both normal load (blue) and overload (red) since the capacity requirements of an operation can exceed the available capacity offer. Therefore, clicking on a blue bar can select the same operation as clicking on a red bar.

> ⚠ Restriction
>
> The action code S_SELCAP, with which selected data records from the ALV Grid are marked in white in the chart, cannot be used for this chart. S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]

2.5.1.4 Development of the Stocking Situation



LMPC Development of the Stocking Situation

The development of the stocking situation for a selected material number is displayed over time.

The material stock is calculated from the material stock and the material requirement quantities of transaction MD04, against which the receipt quantities of the planned, production, and process orders are calculated that are open in the LMPC planning table.

The date of the MD04 list for the requirement element is used as the requirement dates for a material issue for the calculation.

The earliest end dates of the respective capacity requirement are read as receipt dates from the respective orders (fields FENDD_KB, FENDU_KB). The end time is always rounded up to the nearest quarter of an hour. The receipts are displayed for these dates.

The dates of the capacity requirements were intentionally used and not the basic dates of the respective orders or the MRP availability. When dispatching or rescheduling operations in the planning table, the dates of the capacity requirements change in the simulation. By using these dates for the calculation, changes to the stock situation can be displayed approximately in the simulation.

The stock of materials is displayed only for orders open in the HJPT planning table. The stock for component materials of the orders is not displayed.

In Customizing, you can also specify that the materials are aggregated for each storage location. If this is set, the storage location is also used as a selection criterion when selecting the materials.

2.5.1.5 List of Order Relations

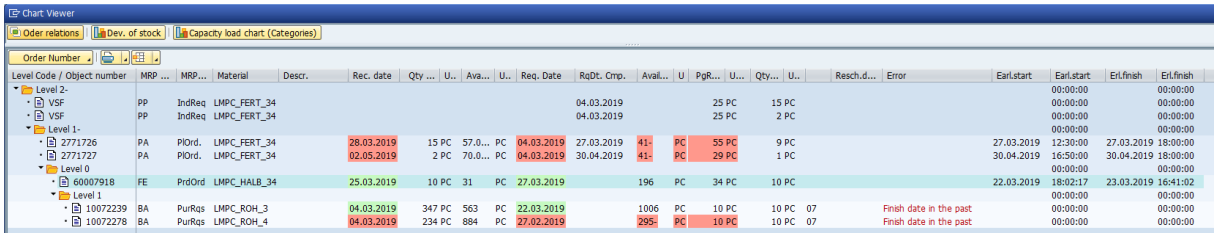
Overview of Order Relations for an Order

Use

The list of order relations shows all elements on the preceding and subsequent low-level codes for a selected order. From the raw material to the semifinished products to the sales order or planned independent requirement.

> → Remember
>
> The order relations planning scenario includes the following elements:
>
> - The order relations display in the list of order relations (this chapter)
> - The display of the order relations via lines in the graphical part of the HJPT planning table. Chapter: Connecting Lines for Bars in Bar Chart [page 51]
> - The dropdown field in the ALV Grid with the information on the dependent requirements of the order relations. Chapter: Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
> - The time for the successor. Chapter: Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476]
> - Multilevel planning with the action code S_EPML. Chapter: Multilevel Planning via Order Relations [page 313]
> - The order relations are firmed with the action code S_ORFIRM. Chapter: S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]
>
> Only the list of order relations is described here. For a description of the other elements, see the relevant section.

Overview



List of Order Relations

The order relations are created dynamically according to the FIFO principle (First-In-First-Out). The requirements are calculated against the receipts and the receipts are assigned to the requirements in this way.

The display always refers to the cyan-colored order in the chart at level 0. When you open the LMPC HJPT planning table, an order is automatically pre-assigned.

The relationships are always determined in relation to the order at level 0. The relationships are determined using the requirement quantities and receipts of the data in transaction MD04.

The relationships are not only determined with those orders that are currently open in the HJPT planning table, but via all the orders in the system.

In the direction of raw material, there are also links to the warehouse stock, which is visible in MD04.

The system displays the stock with the date of the start of the read period for MD04 data. Since the stock was created before the start of the reading period of the data, it is specified with the date of the start of the reading period.

The reading period for the MD04 data is configured via the control table in LMPC Customizing. This is usually the evaluation period of the HJPT planning table +/- a time extension that has been set. If no read period is specified in the control table, the system does not display the receipt date for the stock.

If a requirement is covered by warehouse stock, the order relations are displayed at the level with the warehouse stock. This is because the requirement coverage element that creates the stock is before the reading period of the MD04 data. In this case, the generating requirement coverage element for the stock cannot be determined.

To see how the on-hand stock is to be structured, the reading period for the MD04 data can be enhanced using the Customizing settings in the control table. Then requirement coverage elements are visible for a longer period in the past.

If the quantity of a component for an order has already been withdrawn, there is no longer any requirement for this component. In this case, no entry is displayed for the component. If, when determining the relations in the direction of the raw materials to individual components, the system does not find quantities linked by orders or stock, an entry with the MRP indicator FMAT = missing material is created for the relevant component. The column for the MD04 error messages also contains a message about the missing material quantity. The material number is colored red.

→ Tip

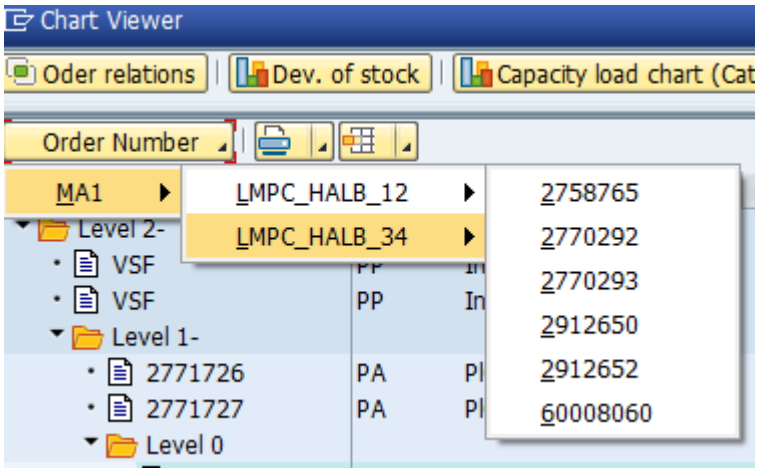
- If, when determining the relations in the direction of the raw materials to individual components, the system does not find quantities linked by orders or stock, by default, the order relation is displayed from left to right from the raw material via the semifinished products to the finished products and the requirement element. This display can be reversed using a parameter in Customizing. This means that the display runs from the finished product to the raw material. Parameter Settings for Chart Window

- The entries on the respective levels are sorted in ascending order according to the receipt date and, if available, according to the latest end times of the capacity requirements.
- As of level +3/-3, elements can be displayed more than once. For each entry on level +2/-2, there is at least one entry on level +3/-3. If there are multiple elements on level +2/-2 and each of these elements has the same element assigned on level +3/-3, this element is listed in level +3/-3 more than once. This is to display the linked quantities between level +2/-2 and +3/-3 correctly. This also applies to levels with higher numbers.

Order Selection

An order can be selected in two ways:

- Using the *Order Number* menu button above the list.
- Using the action code S_ORSON "Display Order Relations".

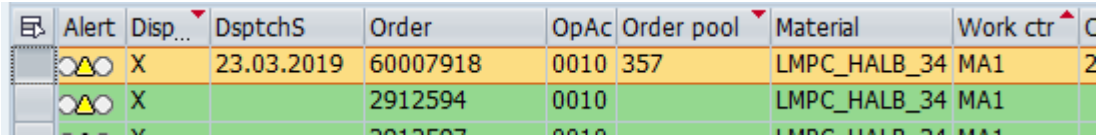


Selection of Orders Using the Menu

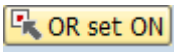
If the parameter `ORMWM` is set in the Customizing settings, the order numbers are grouped according to the work center and the material. This makes it easier to select an order. If the parameter is not set, the selection is made via a simple list of all order numbers. Parameter Settings for Chart Window

Selection of Order Using Action Code S_ORSON

- Select an order operation in the ALV Grid of the LMPC planning table.



Order Selection in the ALV Grid

- Execute the action code 

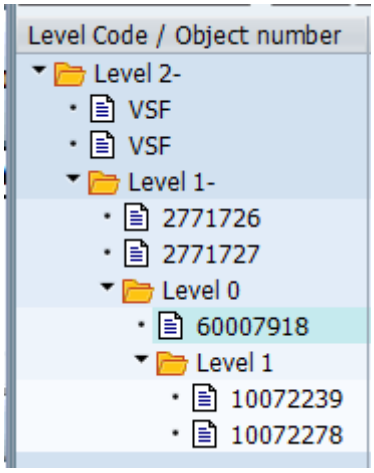
(S_ORSON).
- The selected order will be set to level 0 in the list as the starting point for the order relations.

If the list of order relations is not open, it is opened. The prerequisite for this is that the list is defined in Customizing for the HJPT overall profile. When you save the data, the planning table remembers the position and size of the windows. The list opens in the last opened size and position.

> → Tip
>
> A reverse selection in the direction of the LMPC ALV Grid is also possible. If you double-click on an order number in the list of order relations and this order is open in the planning table, the corresponding line is selected in the ALV Grid of the LMPC HJPT planning table.

Fields in the Overview

The display is divided into two areas. On the left-hand side you can see the hierarchy of the elements (orders, purchase requisitions, planned independent requirements, sales orders), and on the right-hand side you can see the data for these elements.



Left Side of Hierarchy

On the right-hand side you can see the data for these MRP elements.

MRP ...	MRP...	Material	Descr.	Rec. date	Qty ...	U..	Ava...	U..	Req. Date	RqDt. Cmp.	Avail...	U	PgR...	U...	Qty...	U..		Resch.d...	Error	Earl.start	Earl.start	Erl.finish	Erl.finish
																					00:00:00		00:00:00
PP	IndReq	LMPC_FERT_34								04.03.2019			25 PC		15 PC						00:00:00		00:00:00
PP	IndReq	LMPC_FERT_34								04.03.2019			25 PC		2 PC						00:00:00		00:00:00
																					00:00:00		00:00:00
PA	PlOrd.	LMPC_FERT_34		28.03.2019	15 PC		57.0...	PC	04.03.2019	27.03.2019	41-	PC	55 PC		9 PC					27.03.2019	12:30:00	27.03.2019	18:00:00
PA	PlOrd.	LMPC_FERT_34		02.05.2019	2 PC		70.0...	PC	04.03.2019	30.04.2019	41-	PC	29 PC		1 PC					30.04.2019	16:50:00	30.04.2019	18:00:00
																					00:00:00		00:00:00
FE	PrdOrd	LMPC_HALB_34		25.03.2019	10 PC		31	PC	27.03.2019		196	PC	34 PC		10 PC					22.03.2019	18:02:17	23.03.2019	16:41:02
																					00:00:00		00:00:00
BA	PurRqs	LMPC_ROH_3		04.03.2019	347 PC		563	PC	22.03.2019		1006	PC	10 PC		10 PC		07		Finish date in the past		00:00:00		00:00:00
BA	PurRqs	LMPC_ROH_4		04.03.2019	234 PC		884	PC	27.02.2019		295-	PC	10 PC		10 PC		07		Finish date in the past		00:00:00		00:00:00

Data List

The starting point is always the selected order on level 0. This is highlighted in cyan. The upwards direction in this example is the direction of the finished product, planned independent requirements, or sales orders, and so on. Downwards, you see raw materials, purchase requisitions, and so on.

You can use the layout settings of the ALV Grid to show or hide fields. You can use the print function to export the data.

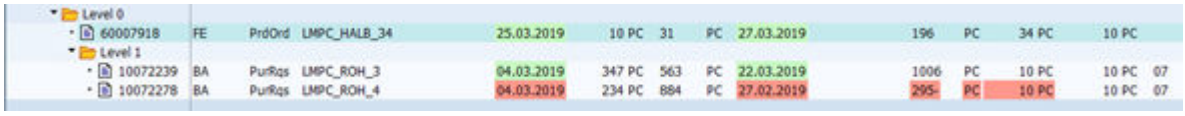
The following fields are available:

- AUSSL: Key error message receipt element MD04
- BCMEINH: Component for requirement unit of measure
- BDDAT: Earliest requirement date
- BDDAT_CMP: Requirement date for components

- BDDELNR: Number of first pegged requirement, for example, order number
- BDMNG: Requirement quantity
- BDMNG_C: Requirement quantity of component
- BERID: MRP area
- BFFTFL: Buffer time for pegged requirement
- BFFTFLS: Short buffer time for pegged requirement
- BMEINH: Unit of measure for requirement
- DELBO: MRP element short description
- DELKZ: MRP element indicator
- DLEVEL: MRP level order relations
- FENDD: Earliest end/date of last (open) operation of the order
- FENDU: Earliest end/time of last (open) operation of the order
- FSTAD: Earliest start/date first (open) operation of the order
- FSTAU: Earliest start/time first (open) operation of the order
- MAKTX: Material description
- MATNR: Material number
- MSGXX: Error message receipt element MD04
- ORDNR: Number of the MRP element, for example, order number
- ORELMEINH: Unit of measure for relation
- ORELMNG: Relation quantity
- RCDAT: Receipt date
- SENDD: Latest end/date last (open) operation of the order
- SENDU: Latest end/time last (open) operation of the order
- SSTAD: Latest start/date first (open) operation of the order
- SSTAU: Latest start/time first (open) operation of the order
- UMDAT: Rescheduling proposal MD04
- VFMNG: Available quantity receipt date
- VFMNGEINH: Unit of measure for available quantity
- VRFMGBT: Available quantity for requirement date
- VRFMGBTEINH: Unit of measure for available quantity for requirement date
- WERKS: Plant
- ZGMNG: Receipt quantity
- ZMEINH: Unit of measure for receipt

Example

View from level 0 down to raw material. Explanation of the fields, from left to right.



Data Downwards

Level 0 shows element 60007918. The fields "Indicator MRP Element" and "MRP Element Short Description" show that this is a production order. The material LMPC_HALB_34 is produced with the material short text LMPC Semi 34.

Transaction MD04 determined the receipt date for this order as March 25, 2019. Since the receipt date is before the requirement date, the field is colored green. The receipt quantity is 10 pieces. At the time of receipt, the available quantity of the material according to MD04 is 31 pieces. The available quantity at the time of receipt already contains the quantity of the order as a receipt. Meaning that there is sufficient coverage for the material here. The requirement date for the order based on the requirements for the level -1 (not shown here) is March 27, 2019. The requirements date is the earliest requirements date of all requirement elements that are linked to this order. If there are several elements at level -1 that consume the receipt quantity of the order, then the requirement date of the earliest element applies. The field requirement date components is irrelevant for level 0.

The field "Available Quantity for Requirement Date" is next. The available quantity for the requirements date displays the quantity according to MD04, after deduction of the material requirements that have already been made for this date. The amount here is 196 pieces.

The next field displays the requirement quantity for the requirement date. In this case, this is 34 pieces. There is a sufficient quantity of material for the requirement date. The requirement quantity is the sum of the required quantities for all pegged requirements for this material. In this case, there is only one order as the pegged requirement.

The next field displays the related quantity. The related quantity is always considered upwards. 10 elements are linked here. The order itself has 10 receipt elements. So, all 10 receipt elements of the order are linked to the requirements on level -1.

The next 2 fields display, if available, the error number and the error message from transaction MD04. In this case, there is no error message for the order.

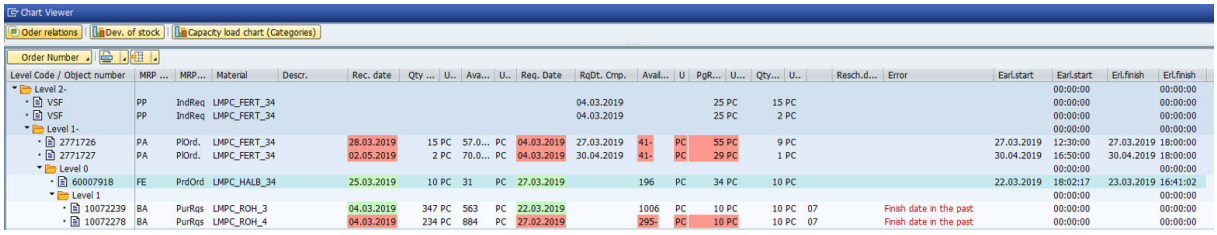
On level 1 you can see 2 elements: 10072239 and 10072278. These are purchase requisitions for the raw material LMPC_ROH_3 or LMPC_ROH_4. Both are received on March 4, 2019.

The receipt quantity is 347 or 234 pieces. At the time of receipt, 563 or 884 pieces of this material are available.

The requirement date for material LMPC_ROH_3 is March 22, 2019. The requirement date for material LMPC_ROH_4 is on February 27, 2019, because the material enters the manufacturing process earlier. The available quantity for the requirement date is negative for material LMPC_ROH_4. The field is highlighted in red. Therefore, there are not enough parts to start production.

The related quantity for the respective semifinished material is 10 pieces. According to the MD04 error message, the deadline for both purchase requisitions is already in the past.

View data from level 0 upwards towards finished material



Data upwards 1

RqDt. Cmp.	Avail...	U	PgR...	U...	Qty...	U..		Resch.d...	Error	Earl.start	Earl.start	Erl.finish	Erl.finish
											00:00:00		00:00:00
04.03.2019			25 PC		15 PC						00:00:00		00:00:00
04.03.2019			25 PC		2 PC						00:00:00		00:00:00
											00:00:00		00:00:00
27.03.2019	41-	PC	55 PC		9 PC					27.03.2019	12:30:00	27.03.2019	18:00:00
30.04.2019	41-	PC	29 PC		1 PC					30.04.2019	16:50:00	30.04.2019	18:00:00
											00:00:00		00:00:00
	196	PC	34 PC		10 PC					22.03.2019	18:02:17	23.03.2019	16:41:02

Data upwards 2

To make the data easier to read, the data has been displayed in 2 parts.

The order 60007918 of the semifinished material serves 2 orders for the finished material LMPC_FERT_34 on level -1. They have different receipt quantities for the finished material.

The requirements dates of the orders on level -1 result from the requirements dates for the components of the planned independent requirements on level -2. On level -2, the related quantities show how many pieces of finished material from level -1 are assigned to the requirements on level -2: 15 + 2 = 17 pieces required on level -2. Receipt: 15 + 2 = 17 pieces on level -1.

One level further down: The order 60007918 on level 0 has 10 pieces of receipt quantity, which is consumed by the orders for the finished material on level -1. Related quantity here 9 + 1 = 10.

So, looking at the area from level 0 upwards, the related quantity of materials is the link to the level below. In the level 0 area downwards, this is the other way around.

If you want to view the scheduled start times of the orders, you can look at the last columns of the order report. The earliest start of order 60007918 is on March 22, 2019, the earliest end on March 23, 2019. The earliest start and the earliest end dates are the times from the capacity requirements of the order. The earliest start is read from the first operation and the earliest end of the operation is read from the last operation, in order to illustrate the entire production period of an order.

> → Remember
>
> If the operations of the respective order are open in the HJPT planning table, the times for the capacity requirement are determined from the simulative data and show the current planning status. If the operations are not open, the data is read from the database.

The required quantity field shows the quantity of material required by the elements in the next higher level.

There is another field that is not shown in this example: The requirement quantity of the components. This field specifies how much of the components that are one level lower is required. In the case of planned independent requirements, this field displays the required quantities of the material. This field is only filled upwards to determine the data, since the data is unique here. This field is not filled downwards since several components can exist for a material to be produced.

In the "Requirement Date Components" column, the desired dates for the materials are displayed for planned independent requirements. These desired dates for the planned independent requirements also correspond to the requirements date for the elements that lie one level lower.

There are still two fields for the buffer time for the subsequent element, which are not shown in this example. In these fields, the linear time between the end of the last operation of an order and the start of the subsequent pegged requirement is calculated. For more details about these fields, see the following section: Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476]

You can use the settings for the chart to deactivate the calculation of the buffer time to save runtime. C05 Transaction /LMPC/CUSTOREL: Settings for the List of Order Relations

Another field, which is also not shown, displays the number of the first requirements element for the respective order. You can use this field to create a reference to the pegged requirement if several elements exist at a level.

If an order in the HJPT planning table is rescheduled to a different date, the order relations may also change, since the order is likely to serve other requirements. Planning takes place in simulation mode. The list of order relations is designed for this purpose. The receipt dates, requirement dates, available quantities, and start times of orders opened adapt to the changed data.

⚠ Caution

- The order relations are only displayed correctly if the orders use the same units of measure across the levels. An automatic quantity conversion is not planned.
- Calculating the order relations using the different low-level codes is very runtime intensive. We recommend that you keep the list of order relations closed when you open the planning table and only open it if you need it.

⚠ Restriction

- The order relations chart only depicts data constellations for which it has been developed. This is make-to-stock production within a plant and make-to-order production within a plant.
  It does not map every customizable use case in the SAP software. If the data for a use case is not displayed correctly, this is not an error. This is a scenario that is not supported. Scenarios that are not supported include cross-plant planning or co-product manufacturing.
- In co-production, the co-products and by-products for the respective order are not displayed. Likewise, the pegged requirements of the co-products and by-products are not taken into account when the requirement date is calculated. If other orders use the co-products or by-products as consumables, the links are only displayed in the direction from the finished material to the source material. In the other direction with the order of the co-product as the starting point in the direction of the consumption of the co-products, the links are not generated.
- There are also restrictions for displaying simulative orders. Since simulative orders do not exist in the database, no rescheduling date and no error messages from transaction MD04 can be determined for these orders. S_CRORD Create Simulative Order [page 156]
- However, any other cases that are not described in this documentation are not supported either.

Related Information

C05 Transaction /LMPC/CUSTOREL: Settings for the List of Order Relations

2.5.1.6 Equipment Check

The equipment check chart shows the overlaps between maintenance orders for equipment of the orders and the dispatching dates of the orders.

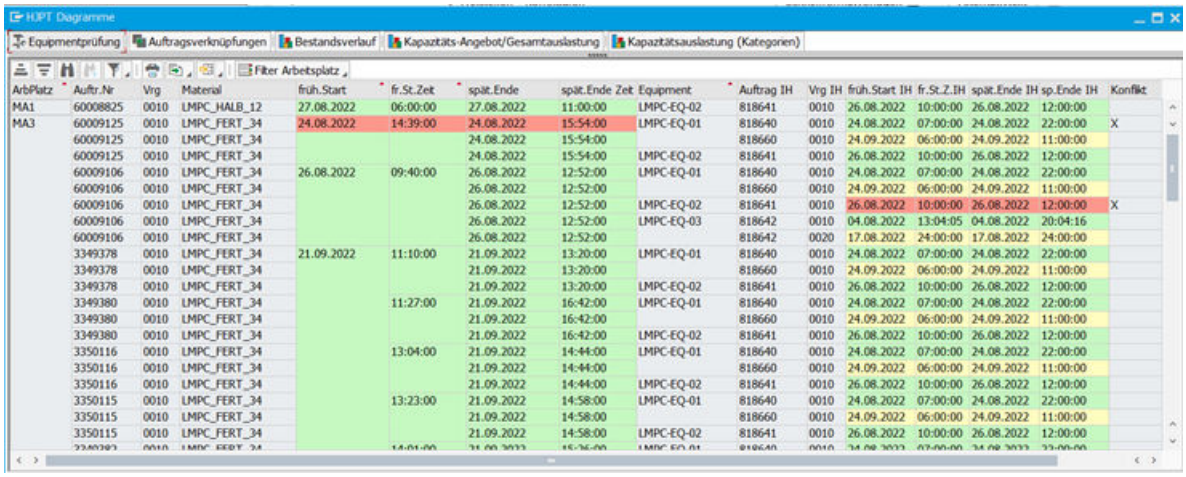
This chart enables you to check the usability of equipment in orders.

To exclude a piece of equipment from use for a certain period of time, a maintenance order is created for this piece of equipment. This is created as a normal maintenance order for the equipment, for example, using transaction IW31. Creation takes place outside of the HJPT planning table.

In the period of the maintenance order, an operation of a planned order or production order that uses this equipment must not be dispatched for production.

The chart compares the operation times of the produced orders with the maintenance orders of the equipment used. If there is an overlap, the system issues a colored warning.

The chart can remain open at all times during planning in the HJPT planning table. It updates itself with each planning operation.



ArbPlatz	Auftr.Nr	Vrg	Material	früh.Start	fr.St.Zeit	spät.Ende	spät.Ende Zeit	Equipment	Auftrag IH	Vrg IH	früh.Start IH	fr.St.Z.IH	spät.Ende IH	sp.Ende IH	Konflikt
MA1	60008825	0010	LMPC_HALB_12	27.08.2022	06:00:00	27.08.2022	11:00:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	
MA3	60009125	0010	LMPC_FERT_34	24.08.2022	14:39:00	24.08.2022	15:54:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	X
	60009125	0010	LMPC_FERT_34			24.08.2022	15:54:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	60009125	0010	LMPC_FERT_34			24.08.2022	15:54:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	
	60009106	0010	LMPC_FERT_34	26.08.2022	09:40:00	26.08.2022	12:52:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	
	60009106	0010	LMPC_FERT_34			26.08.2022	12:52:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	60009106	0010	LMPC_FERT_34			26.08.2022	12:52:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	X
	60009106	0010	LMPC_FERT_34			26.08.2022	12:52:00	LMPC-EQ-03	818642	0010	04.08.2022	13:04:05	04.08.2022	20:04:16	
	60009106	0010	LMPC_FERT_34			26.08.2022	12:52:00		818642	0020	17.08.2022	24:00:00	17.08.2022	24:00:00	
	3349378	0010	LMPC_FERT_34	21.09.2022	11:10:00	21.09.2022	13:20:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	
	3349378	0010	LMPC_FERT_34			21.09.2022	13:20:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	3349378	0010	LMPC_FERT_34			21.09.2022	13:20:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	
	3349380	0010	LMPC_FERT_34		11:27:00	21.09.2022	16:42:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	
	3349380	0010	LMPC_FERT_34			21.09.2022	16:42:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	3349380	0010	LMPC_FERT_34			21.09.2022	16:42:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	
	3350116	0010	LMPC_FERT_34		13:04:00	21.09.2022	14:44:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	
	3350116	0010	LMPC_FERT_34			21.09.2022	14:44:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	3350116	0010	LMPC_FERT_34			21.09.2022	14:44:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	
	3350115	0010	LMPC_FERT_34		13:23:00	21.09.2022	14:58:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	
	3350115	0010	LMPC_FERT_34			21.09.2022	14:58:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	3350115	0010	LMPC_FERT_34			21.09.2022	14:58:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	

Equipment Check Chart

All maintenance orders are determined for the equipment of the orders:

- Their processing phase is either open, on hold, or released. Other phases, such as technically completed, are not determined since these orders are no longer used.
- Their basic dates overlap with the planning period of the HJPT planning table.

You can use filter settings to make further restrictions with regard to the pieces of equipment and maintenance orders displayed. C17 Transaction /LMPC/PRT_CUST, M06 Transaction /LMPC/PRT_CUSTS: Filter for Production Resources/Tools

For the check, the earliest start dates (date and time) of the capacity requirements of the operations are used as start dates for planned and production orders. The latest end dates (date and time) of the capacity requirements are used as the end dates.

Different fields are used for the operations of the maintenance orders depending on the data situation:

- If there is a constraint that the operation must start or end at a certain time, the basic dates (date and time) of the constraint are used for the comparison.

- If there is no constraint that an operation must start or end at a certain time, the earliest scheduled start for execution (date and time) is used for the operation start. The latest scheduled end for execution (date and time) is used for the operation end.

Data in Chart

The following fields are available in the chart:

- Work Center
- Order Number
- Operation Number for Order
- Material Number
- Earliest Start of Operation (Date)
- Earliest Start Time of Operation
- Latest End of Operation (Date)
- Latest End Time of Operation
- Equipment Number
- Maintenance Order Number
- Maintenance Order Operation
- Earliest Start of Processing of Operation (Date) of Maintenance Order
- Earliest Start Time of Processing of Maintenance Order Operation
- Latest End of Processing of Operation (Date) of Maintenance Order
- Latest End Time of Processing of Operation of Maintenance Order
- Conflict Indicator

The chart shows one row per:

- Order number
- Operation number
- Equipment Number
- Maintenance order number
- Maintenance order operation

> ⚠ Restriction
>
> - There are only entries in the chart if equipment could be determined for the order and if these pieces of equipment have maintenance orders in the planning period.
> - The data is only determined up to operation level. Suboperations are not taken into account.
> - No data can be determined for simulative orders. S_CRORD Create Simulative Order [page 156]

Color Logic

The data in the chart has color logic to indicate problematic situations. The logic colors the entries according to the following rules:

- If there are no errors, the fields for the times (date and time) of the orders and maintenance orders are highlighted in green.
- If the start date of the operation of the maintenance order has a non-fixed start time and this start time does not have the constraint "must start on", the fields of the start date of the maintenance operation are highlighted in yellow. This rule informs the user that the start time of the maintenance order may change.

- If the end date of the operation of the maintenance order does not have a fixed end time and this end time does not have the constraint "must finish on", the fields of the end date of the maintenance operation are highlighted in yellow. This rule informs the user that the end time of the maintenance order may change.
- If the times of production and maintenance are identical, all fields for dates are highlighted in red (rare case).
- If the times of production fall completely within the maintenance times, the fields for the operation times are red and the fields for the maintenance orders are green. The order cannot be produced at the desired time.
- If the maintenance times fall completely within the production times, the production times are green and the maintenance times are red. Maintenance cannot be carried out.
- Left position or left overlap of maintenance: Maintenance starts before production and ends during production or at the same time. Or, maintenance starts at the same time as production and ends during production: Highlight the maintenance start time in green. Highlight both the start time of production and the end time of maintenance in red. The end time of production is green again.
- Right position or right overlap of maintenance. Maintenance starts during production and ends at the same time as production or after production. Or, maintenance starts at the same time as production and ends after production: Highlight the production start time in green. Highlight the maintenance start time in red. Highlight the end time of production in red. The end time of maintenance is green again.
- The conflict indicator is only displayed for a data record that is highlighted in red. Yellow warnings do not create a conflict.

The rules for coloring are fixed and cannot be changed.

→ Tip

- There is a logic for selecting the corresponding entries in the equipment check chart for the data records from the ALV Grid of the HJPT planning table. S_SELEQ Select Data Records in Equipment Check Diagram [page 344]
- You can use the action code S_IW38EQ to change maintenance orders for the equipment of the orders. S_IW38EQ Change Maintenance Orders for Equipment [page 371]
- The data provider CL_DP_USER_103 reads production resources/tools and displays them in fields in the ALV Grid. The equipment check can also be activated for this data provider. In this case, conflicts for pieces of equipment are also displayed in the ALV Grid. Data Provider /LMPC/CL_DP_USER_103 Production Resource/Tool [page 514]
- The LMPC group alert contains an alert for the equipment check that considers the conflict field of the equipment check. Group Alert [page 436]
- The planning function of rule-based planning enables you to consider maintenance orders for equipment and to dispatch the operations at times at which there are no overlaps with maintenance orders of equipment. S_RBPL Rule-Based Dispatching [page 240]

⚠ Restriction

This chart only allows you to check equipment for operations of orders, since maintenance orders can only be created for equipment. No check is possible for other PRTs, such as materials, documents, or miscellaneous PRTs.

2.5.2 Window for Completed Production and Process Orders

Additional Data

Finally confirmed, completed, and technically completed operations of production and process orders cannot be displayed and processed as planning data in the HJPT planning table. This is because either the capacity requirements are missing or the status settings do not allow planning with these orders.

With this additional window, it is possible to display this data.

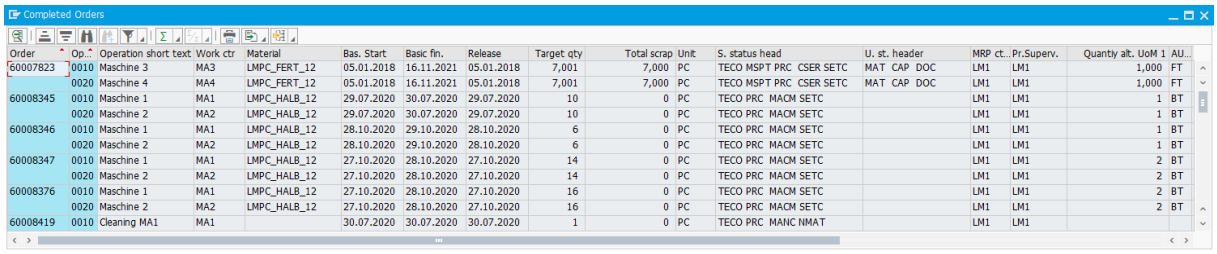
The delivered example configuration is designed so that only data for orders with the statuses completed, technically completed, and confirmed is displayed. By changing the Customizing, you can also display the data for orders with other statuses.

The data in this window is independent of the data processing of the remaining HJPT planning table. The window has its own read routines. The data is read from the database and only displayed.

The selection parameters from the initial screen of the HJPT planning table are used to read the data:

- Plant
- Work Centers
- Time Period from Time Profile

> **⚠ Restriction**
>
> - The data is for display purposes only. You cannot use the window to change this data. Also, no HJPT action codes can be applied to this data.
> - To save runtime, the data is read once only, when the HJPT planning table is started. To refresh the data, you must either save, reload the data (action code S_RELOAD), or exit the planning table and call it again.
> - Only data for production and process orders can be read. Data for other order types, such as planned orders, is not read.
> - The data is displayed at the level of operations of the orders. Data for individual phases of process orders is not displayed.



Order	Op.	Operation short text	Work ctr	Material	Bas. Start	Basic fin.	Release	Target qty	Total scrap	Unit	S. status head	U. st. header	MRP ct.	Pr.Superv.	Quantity alt.	UoM 1	AU.
60007823	0010	Maschine 3	MA3	LMPC_FERT_12	05.01.2018	16.11.2021	05.01.2018	7,001	7,000	PC	TECO MSPT PRC CSER SETC	MAT CAP DOC	LM1	LM1	1,000	FT	
	0020	Maschine 4	MA4	LMPC_FERT_12	05.01.2018	16.11.2021	05.01.2018	7,001	7,000	PC	TECO MSPT PRC CSER SETC	MAT CAP DOC	LM1	LM1	1,000	FT	
60008345	0010	Maschine 1	MA1	LMPC_HALB_12	29.07.2020	30.07.2020	29.07.2020	10	0	PC	TECO PRC MACM SETC		LM1	LM1	1	BT	
	0020	Maschine 2	MA2	LMPC_HALB_12	29.07.2020	30.07.2020	29.07.2020	10	0	PC	TECO PRC MACM SETC		LM1	LM1	1	BT	
60008346	0010	Maschine 1	MA1	LMPC_HALB_12	28.10.2020	29.10.2020	28.10.2020	6	0	PC	TECO PRC MACM SETC		LM1	LM1	1	BT	
	0020	Maschine 2	MA2	LMPC_HALB_12	28.10.2020	29.10.2020	28.10.2020	6	0	PC	TECO PRC MACM SETC		LM1	LM1	1	BT	
60008347	0010	Maschine 1	MA1	LMPC_HALB_12	27.10.2020	28.10.2020	27.10.2020	14	0	PC	TECO PRC MACM SETC		LM1	LM1	2	BT	
	0020	Maschine 2	MA2	LMPC_HALB_12	27.10.2020	28.10.2020	27.10.2020	14	0	PC	TECO PRC MACM SETC		LM1	LM1	2	BT	
60008376	0010	Maschine 1	MA1	LMPC_HALB_12	27.10.2020	28.10.2020	27.10.2020	16	0	PC	TECO PRC MACM SETC		LM1	LM1	2	BT	
	0020	Maschine 2	MA2	LMPC_HALB_12	27.10.2020	28.10.2020	27.10.2020	16	0	PC	TECO PRC MACM SETC		LM1	LM1	2	BT	
60008419	0010	Cleaning MA1	MA1		30.07.2020	30.07.2020	30.07.2020	1	0	PC	TECO PRC MANC NMAT		LM1	LM1			

Window for Completed Orders

There is one row in the ALV Grid for each order number and operation of the order.

Above the ALV Grid there is a toolbar that can be used to execute standard functions of the ALV Grid:

- Details
- Sort in ascending order
- Sort in descending order
- Find

- Set filters
- Print
- Export
- Layout settings

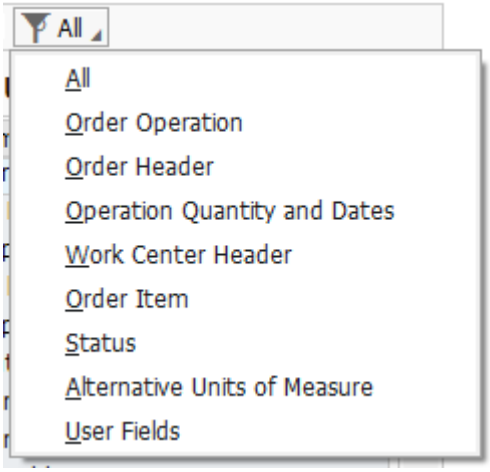
You can use the layout settings to show or hide fields. 145 fields are available.

The fields are divided into the following layout groups:

- Order Operation
- Order Header
- Operation Quantities and Dates
- Work Center Header
- Order Item
- Status
- Alternative Units of Measure

This division corresponds to the tables from which the data is read. The group of user fields is usually empty. This group contains fields only if enhancements have been made to the data in the customer system in the customer namespace.

This makes it easier to find and select fields.



Layout Groups

For the window to be displayed, it must be attached to the HJPT overall profile. For instructions, see the LMPC Configuration Guide. HJPT Window Configuration

It is possible to color fields or rows of the ALV Grid. Data providers are used to color and read the data. If certain data is not required, individual data providers can be deactivated. The example configuration delivered for the data providers is designed so that only data for orders with the statuses completed, technically completed, and finally confirmed is displayed. By changing the Customizing settings, you can also display the data for orders with other statuses.

For instructions on configuring the coloring and the data providers, see the Configuration Guide. C14 Transaction /LMPC/VIEW: Settings for Additional Windows

→ Tip

The HJPT planning table remembers the position and size of the window each time you save. The planning table also remembers whether the window was closed and no longer opens the window the next time you start the planning table. The closed window can be reopened using the action code S_RESSIZ. S_RESSIZ Open or reset all HJPT dialog boxes [page 410]

Related Information

HJPT Window Configuration
C14 Transaction /LMPC/VIEW: Settings for Additional Windows
S_RESSIZ Open or reset all HJPT dialog boxes [page 410]

2.6 Action Codes - Functions of the HJPT Planning Table

Functions of LMPC HJPT Detailed Scheduling Planning Board

LMPC has a large number of functions (>140), known as action codes. The following description of the LMPC functions is not intended to be exhaustive. For a list of all possible action codes, see the LMPC Configuration Guide.Catalog of Action Codes

The labels and icons used for the functions are taken from the standard LMPC delivery. Depending on the settings in your system, the labels and icons in your system may differ; the functions may also behave differently. The following descriptions each reflect prototypical behavior of the functions. If you have any questions about functions, please contact your LMPC consultant.

Action codes can be called in different ways:

- The function keys in the header of the ALV Grid enable you to perform the corresponding actions after selecting orders.
- You use the right-hand mouse button to access the functions defined in the context menu of the ALV Grid.
- You can double-click or click the hotspot on individual ALV Grid fields to call functions.
- You can use the key combinations Ctrl + function keys 1-12 to call action codes.
- You can right-click on a graphical element to call functions in the context menu of the graphic.
- In the menu bar of the capacity planning table, you can execute standard functions of the capacity planning table as well as LMPC functions.
- In the capacity planning table, you can use drag and drop to dispatch, reschedule, and deallocate the operations of orders. Bar Chart Menu Bar Functions [page 53]

For instructions on configuring each access option, see the context profiles in the LMPC Configuration Guide. HJPT Context Profiles

The action codes are divided into the following 6 groups according to their nature:

- Creating, Displaying, and Changing Operations and Orders [page 106]

- Planning Functions [page 180]
- Selection Functions [page 337]
- Action Codes for Mass Processing [page 348]
- Transaction Calls [page 358]
- LMPC HJPT Support Functions [page 381]

2.6.1 Locking Mechanism for Changed Data

The HJPT planning table uses the lock management of the standard SAP system for editing data.

In the HJPT planning table, the operations of orders are planned and changed. The data is loaded from the database into the internal memory at the start of processing. The data is changed in the simulation in the internal memory. Changes in the simulation are not visible in the database. At the end of the planning process, the data is written to the database again when you save.

Locks are used to protect the data from being changed while a user or program is working with this data. Locking helps to ensure the consistency of the data.

In the standard delivery, the HJPT planning table is set in such a way that it only locks the data if changes are made to the data. The locks are always set at order level. Therefore, if an operation of an order is changed, a temporary lock is set in the system for the order number, which remains until the next time the data is saved, the data is reloaded, or the application is exited.

You can use Customizing for the graphic to change the locking behavior of the HJPT planning table in such a way that all loaded production orders or process orders are locked automatically when the planning table is called. Planned orders cannot be locked automatically. G03 Transaction /LMPC/OPDE: Control Profile

It is still possible to include an action code in the call of the planning table that locks all orders, including planned orders, when planning is called. S_LOCK Temporarily Lock Orders [page 402]

In the ALV Grid of the HJPT planning table, the status of the locks can be displayed in a column with the description “Lock”.

Lock	Dispatched	Ord. Nr.	Op...	Firming
	X	60009827	0010	
	X	3324399	0010	X
	X	3402569	0040	X
	X	3628891	0010	X
		60009830	0010	
		60009830	0020	
		60009830	0030	
		3403606	0010	X

Example Locks

There are self-locks, which are symbolized by an open lock, and external locks, which are symbolized by a closed lock.

Self-locks are set by the application in the current GUI window. External locks originate from GUI windows of the same or another production planner that are open in parallel or from automatic programs in background processing.

An empty field indicates that there is no lock on the order. Neither by this application nor by any other application.

To display the locks, the data provider CL_DP_ENQUEUE must be activated. Data Provider /LMPC/CL_DP_ENQUEUE Order Locks (Icon) [page 474]

Users can use this display to identify possible lock conflicts. You can see which orders cannot currently be processed.

The lock management of planned orders is not as strongly defined as the lock management of production and process orders.

Lock Management of Production and Process Orders

If an operation of a production order or process order is dispatched deallocated, or rescheduled, the order receives a self-lock at the level of the order number. Even if data for an order is changed, such as the quantity or standard values, a self-lock is set.

Orders with self-locks can be processed further by the user who set the self-lock.

An order cannot be changed in parallel by other users or programs in the system as long as a lock is set. An operation of a production or process order that has an external lock cannot be dispatched, deallocated, or rescheduled. No other changes can be made to this order either.

Lock Management for Planned Orders

In the standard system, planned orders are only locked if the order data is changed. For example, in the case of a quantity change.

No locks are set for planning activities such as dispatching, deallocation, or rescheduling. The SAP standard planning function does not check for locks for planned orders. In contrast to production orders, planned orders can be planned despite being locked. As a result, planned orders are not protected from changes that are made in parallel by other users in the system.

For this reason, there is a function in the HJPT planning table that executes the setting of a self-lock on the relevant planned order for each planning action.

Each LMPC HJPT planning function checks whether there are external locks on the orders in the selection and terminates dispatching if locks exist.

As a result, planned orders in the HJPT planning table behave in a similar way to production orders and process orders.

However, the lock check of the HJPT planning table cannot prevent locked planned orders from being moved if another operation is inserted before an operation of the locked planned order. If operations are to be prevented from being moved, the insertion of operations in the strategy profile of the planning functions must not be activated. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

Since other applications outside of the HJPT planning table may not check for the locks of the planned orders and do not set any locks themselves, planned orders can be changed by these applications even though a lock exists from the HJPT planning table. Without an external lock, the HJPT planning table cannot recognize that a planned order is currently being processed by another application.

The setting of locks on planned orders for planning activities and the check for external locks for planning activities can be deactivated using the settings of the control table. C16 Transaction /LMPC/STEU LMPC: Control Parameter

If the setting of the locks and the check are deactivated, a planned order can be dispatched, deallocated, or rescheduled despite an external lock. Since a planning activity does not then set a lock, other users cannot recognize in the system that this planned order is currently being planned. For this reason, this setting is not recommended.

In HJPT background processing, the check for external locks of the planned orders must be activated using the settings. Here you can define whether locked orders are removed from processing or whether processing terminates when locks occur. Program /LMPC/HJPT Background Processing [page 26]

Locks for action codes when processing data at the same time

When designing the planning processes, we recommend that you ensure that no users work with the same data in parallel. This can be achieved, for example, by assigning specific groups of work centers to individual production planners. Background processing using the program /LMPC/HJPT should only be executed at times at which no production planners work with the data, for example at night. Program /LMPC/HJPT Background Processing [page 26]

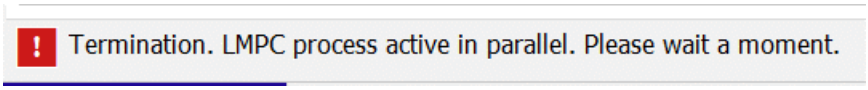
The HJPT planning table contains additional lock management that prevents the simultaneous execution of functions (action codes) on the same data in different modes.

When an action code is executed, a lock is generated for the combination of work center and plant of the processed data records, which is active for as long as the execution of the action code takes.

While an action code is running, neither another user in the dialog nor an automatic program in the background can process data records for the same plant and work center with an action code. Dispatching and rescheduling an operation can affect all dispatched operations of a work center. Therefore, the entire work center is locked for the short time of processing.

These locks are necessary to ensure consistency of data and they cannot be deactivated.

Action codes usually run only for a few seconds, which means that the locked time is relatively short. If there is a lock, an action code terminates with the following error message:



Error message when trying to process identical data at the same time

⚠ Restriction

- The lock check for simultaneous processing of data takes place only when executing LMPC-specific functions, the action codes. The locks do not affect other SAP applications. They are only effective for the HJPT planning table.
- When you reschedule in the graphic using drag and drop, the system does not perform a check.

Self-locks and external locks of orders when working with the same data in parallel

The planning table of an instance receives information about the lock status of orders. It only recognizes that an order is in process. However, it cannot recognize which changes were made to the orders as long as these changes were not saved. It does not know the simulative changes to the dispatching status, the time position of operations, or, where applicable, a change of work center.

As soon as a user saves, a time stamp is set for each work center and plant. This time stamp is checked before an action code is executed. Therefore, if a save has been executed in a parallel instance since the data for this

work center was called, the planning table notes this and informs the user that the data is obsolete during the next action. The details of the check are described in a separate chapter. Check for Outdated Data [page 103]

However, locking and checking for obsolete data cannot prevent certain effects that result from instances opened in parallel processing the data in the simulation. Only a complete omission of parallel work on the data by designing processes without overlaps can prevent this.

Parallel processing of orders in background processing should also not be executed when production planners work with the data. Jobs for background processing should only be dispatched outside of regular working time. Program /LMPC/HJPT Background Processing [page 26]

> ⚠ Caution
>
> If the data of two or more production planners is processed simultaneously, the following effects may occur, which are explained using two users (A and B):
>
> - User A does not process order 1. User B processes order 1 and saves. When user A saves or refreshes the data, order 1 moves to another work center, to another time, or has a different dispatching status (dispatched or deallocated). The data has changed in the background and will be reloaded.
> - User A dispatches order 1 on date Z. User B dispatches order 2 on date Z. Both save the data. The capacity is assigned twice. Two different orders were dispatched at the same time.
> - If the additional locks of the HJPT planning table for planned orders are deactivated, two users can edit a planned order at the same time: User A dispatches planned order 1 on date X. User B dispatches planned order 1 on date Y. User A saves, user B saves. The planned order is on date X, user B is wondering why the planned order is now on a different date.

You can only prevent these effects when working with the same data at the same time by not planning in the simulation and by saving immediately after each change. The action code S_SAVE can be configured as a subsequent action code to execute a save after each planning action. Concatenation with S_SAVE [page 426]

As an alternative, automatic saving can be used at short time intervals, which is activated with the help of the timer function. Timer Function

2.6.2 Check for Outdated Data

Each time an action code is called or bars are dragged and dropped in the graphic, the system checks whether the data that is processed in the HJPT planning table is still current.

It could be that while planner 1 is working in the planning table, another planner 2 opens the planning table with the same data, changes the data and saves.

To ensure that planner 1 is informed about changes that they cannot see, the system checks whether the data is up to date each time action codes are executed.

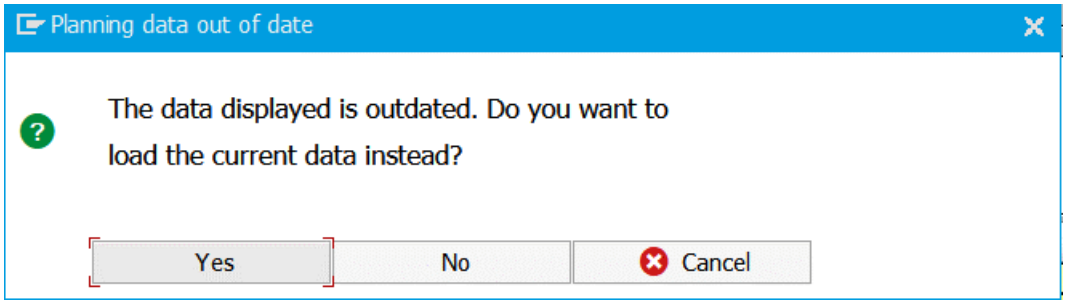
The planning table remembers when the user last updated the data, whether by calling the planning table, saving, or reloading the data. This is done using a time stamp.

When you save the data using the planning table, the system uses a time stamp to record in a database table when the data was last saved for each plant and work center.

When an action code is executed, the latest data record of the time stamp for each work center and plant is read from the database and compared with the time stamp available in the consulting solution.

If the time stamp is older than the time stamp in the database, this indicates that the data has changed in the meantime.

The user is informed and asked whether they would prefer to update the data rather than execute the action code.



Information on Outdated Data

If the user agrees, the action code currently called is not executed and the data is reloaded instead.

If the user rejects the reload of the data, the action code is executed anyway.

If the user terminates, the function is terminated.

The check on outdated data does not take place:

- When executing the action code S_RELOAD to reload the data, since in this case the user wants to reload the data.
- If the save is executed because the data is updated when the data is saved.

The check for obsolete data can be deactivated in the settings for the control table. C16 Transaction /LMPC/STEU LMPC: Control Parameter

> ⚠ Caution
>
> We do not recommend that you deactivate the check for outdated data or continue working with outdated data. Inconsistencies may occur in planning if you are working with outdated data. For example, duplicate assignments, gaps in planning, shifts of operations, or other scheduling errors can occur. Errors due to outdated data are not subject to LMPC support.

Please also refer to the chapter on the locking mechanism, which explains what happens if production planners change operations of orders at the same time. Locking Mechanism for Changed Data [page 100]

> ⓘ Note
>
> Two or more users working with the same data at the same time can be avoided through the structuring of the planning processes in the company. Users who work with the same data at the same time can obstruct each other through locks. S_LOCK Temporarily Lock Orders [page 402]

2.6.3 Action Code Limits

Check Data Before Execution of Action Code

You can use Customizing settings to limit the execution of action codes.

The limit is made by evaluating rules. The rules check values of fields of the operations in the ALV Grid.

For details on defining rules, see the LMPC Configuration Guide. Action Code Limitation

The rule evaluation takes place directly after the selection of operations before executing the logic of the action code.

You can make settings such that if a rule tests positive:

- Processing is terminated
- The operation in question is removed from the quantity of the selected operations

Examples of rules:

- Sort out dispatched operations so that only operations that have not been dispatched are processed.
- Block the execution of an action code if an operation has a specific status
- Allow execution of action codes only for a specific material group
- Allow execution of action codes only for a specific order type
- Define a time limitation for action codes. Allow conversion of planned orders to production orders only within a certain time horizon.

The limitation of action codes works for certain types of call known as action code triggers:

- ALV Grid menu toolbar
- ALV Grid context menu
- Double click or hotspot click
- ALV Grid keyboard command
- Menu bar: Capacity planning table
- Drag and Drop in the ALV Grid
- Graphic bar context menu
- Dragging and dropping in the capacity planning table
- Navigation profile

Only the listed triggers are supported. All other triggers cannot be used with the action code limitiation. Action Code Trigger

The limitation of action codes can also be applied in LMPC HJPT background processing. Program /LMPC/ HJPT Background Processing [page 26]

⚠ Restriction

- Before action codes are executed, the rules are evaluated only for the operations that have been selected. If the logic of action codes still reads other orders, these orders are not taken into account in the evaluation.
- The limitation of action codes checks only for the selected operations and removes them from the selection if necessary. However, it cannot prevent other non-selected operations from being moved in the planning process. This happens, for example, when operations are inserted into the production plan.
- Dragging and dropping operations in the graphic to dispatch, deallocate, or reschedule these operations is not action code processing. Therefore, the restriction of action codes for dragging and dropping in the graphic does not work. The action code restriction only works if drag and drop is replaced in the graphic by an HJPT action code. Action Code Trigger

2.6.4 Creating, Displaying, and Changing Operations and Orders

Overview of the action codes for creating, displaying, and changing operations and orders in the SAP LMPC HJPT detailed scheduling planning board.

2.6.4.1 Adjusting Setup Times

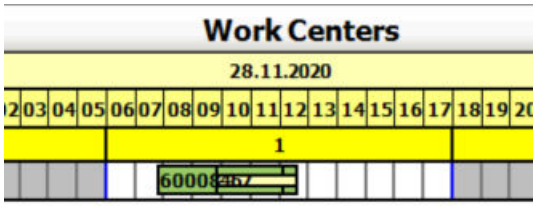
Options for adjusting the setup times of operations

In the HJPT planning table, there are three action codes for adjusting the setup times of operations:

- S_AVRR Change Setup Time Manually [page 108]
- S_AVRU Adjust Setup Time Automatically [page 111]
- S_OSC Optimum Adjustment of Setup Times [page 115]

There are various ways of reading the setup times of the operations in the HJPT planning table.

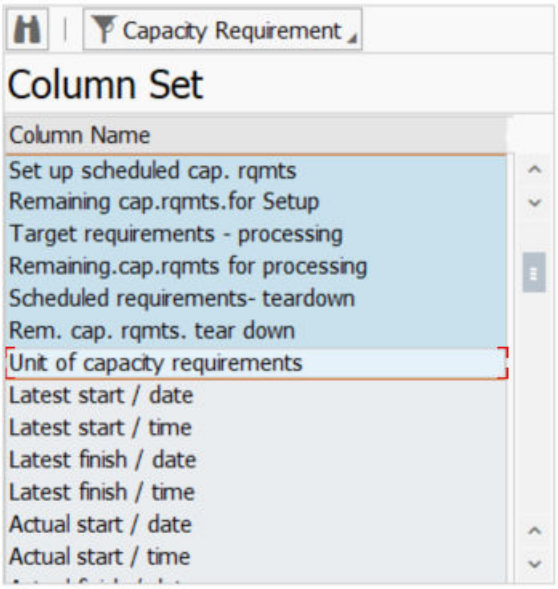
In the graphic, you can see the setup time for PP planned orders and production orders on the bar of the operation. The bar has a separator between the setup time and the processing time.



Operation of a Request in the Graphic

All Orders in PP

You can read the capacity requirements for setup using the capacity requirements fields.





Capacity Requirements Fields

Setup Schd.	Remaining cap.rqmts.for Setup	Target requirements - processing	Rem.rqmts-Processing	Teardn.Sch	Rem.TearDn	Unit
2.000	2.000	5.333	5.333	0.000	0.000	H
0.500	0.500	29.000	29.000	0.500	0.500	H
2.000	2.000	1.867	1.867	0.000	0.000	H
0.000	0.000	1.867	1.867	0.000	0.000	H
0.500	0.500	0.400	0.400	0.500	0.500	H
0.333	0.333	0.800	0.800	0.000	0.000	H

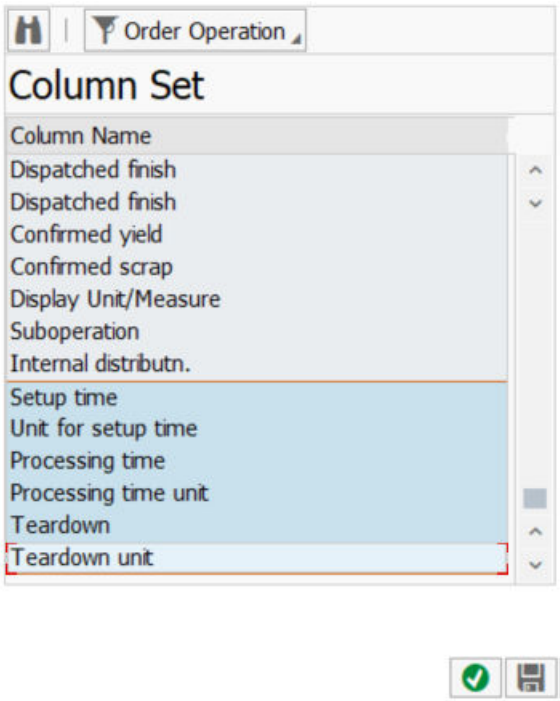
Capacity Requirements in the ALV Grid

> → Remember
>
> For all orders in PP-PI, only the capacity requirements for processing are filled because only one field for capacity requirements exists in PP-PI. The setup times are not displayed separately.

Production Orders in PP

You can branch to the order display. There, you can find the setup times in the detail data for the operation.

You can find this data for the ALV Grid in the field group for the order operation.



Fields for the Times of the Capacity Requirements in the Order Operation

Setup time	Set...	Processing time	Un.	Teardown	Tea...
30.000	MIN	24.000	MIN	30.000	MIN
0.000	MIN	8.000	MIN	0.000	MIN
30.000	MIN	12.000	MIN	30.000	MIN
0.000	MIN	4.000	MIN	0.000	MIN
30.000	MIN	1740.000	MIN	30.000	MIN

Fields in the ALV Grid

However, these fields are only filled for production orders. For planned orders, these fields remain empty.

> → Remember
>
> For PP-PI process orders, only the fields for the processing time are filled from these fields, since only one field for the processing time exists in PP-PI.

2.6.4.1.1 S_AVRR Change Setup Time Manually

Change setup time of operations

Use

You can use the action code Setup tme (S_AVRR) to adjust the setup time of operations manually by direct input. For this purpose, the system displays a popup window with the selected operations, in which you can adjust the setup times.

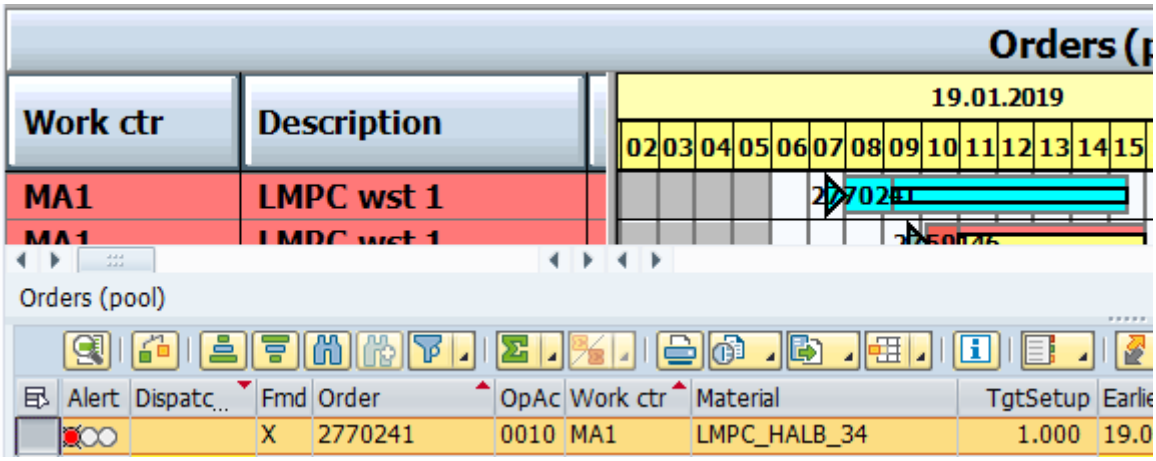
The popup window is displayed for each work center. All selected operations for each work center are displayed in a window.

Since adjusting the setup time results in the deallocation of the corresponding operations, the function automatically dispatches previously dispatched operations back to their old position. Automatic dispatching can be deactivated using a parameter.

> ⚠ Caution
>
> - The setup time adjustment is not available for PI planned orders.
> - For PI setup optimization, the routing-relevant standard values are determined from the setup matrix (transaction OPDA). Incorrectly maintained setup transitions can therefore result in the system displaying the wrong standard values. The standard values for setup transitions are read in the setup matrix with the material group of the order material via the field subsequent setup group (= material group).

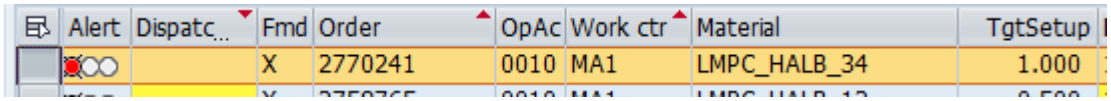
Procedure

- Situation at start:

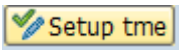


Initial Situation

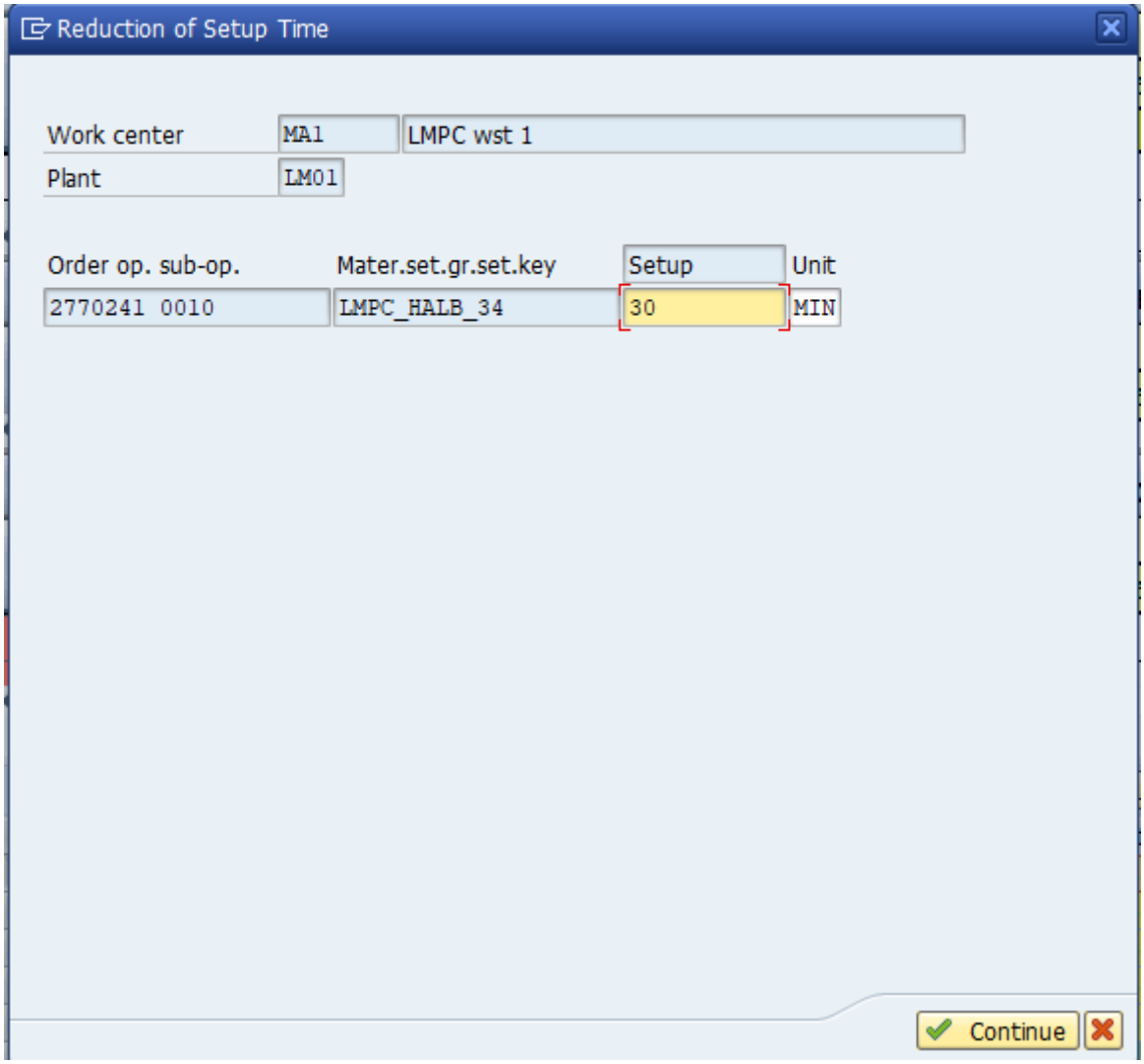
- Order 2770241 operation 0010 has a setup capacity requirement of 1 hour. In the orders pool, you can see a partial bar that is slightly longer than 1 hour. Since the machine only has 80% availability, the partial bar is slightly longer than 1 hour.
- Select the desired operation in the ALV Grid of the LMPC planning table.



Selection of Operation

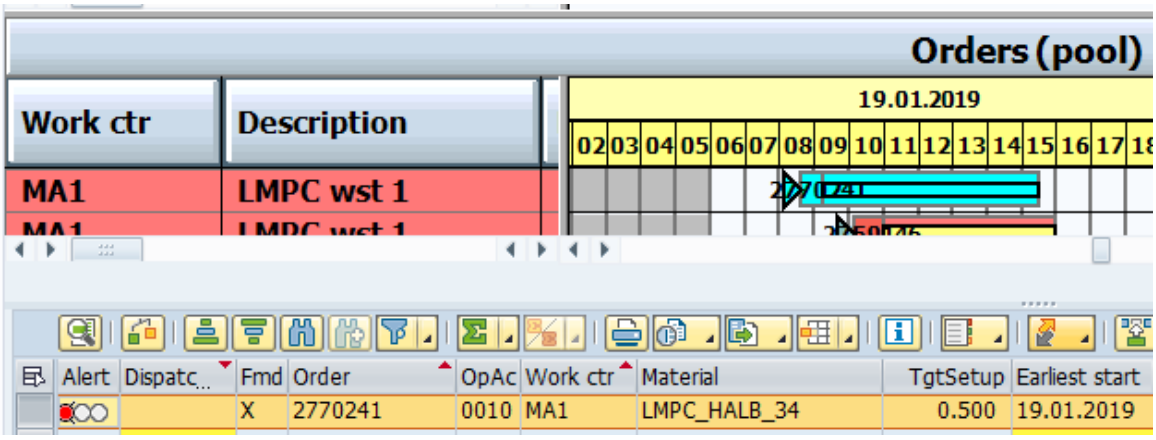
- Execute the action code 

(S_AVRR).
- The system displays a popup window in which you can enter the new setup requirement.



Popup Window for Adjusting the Setup Requirement

- Enter the desired new setup time, and confirm the window. In this case, we cut the setup time in half.
- Result:



Result

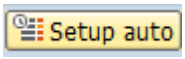
The partial bar for the setup time has become shorter. The setup target field displays the requirement of 0.5 hours.

> ⓘ Note
>
> This guide shows the procedure for a PP scenario. In PP-PI, this is almost identical. However, there is no separate bar for the setup time for process orders.

2.6.4.1.2 S_AVRU Adjust Setup Time Automatically

Adjust the setup time of orders automatically

Use

The action code 

(S_AVRU) is used for automatic setup time adjustment. It changes the setup time automatically based on the setup matrix for all selected dispatched operations. The setup times are adjusted for all selected operations. The first selected order operation is also adjusted. This is either adjusted according to the preceding, unselected operation or, if there is no predecessor, set to the initial setup time.

When the setup time is changed, the standard SAP system cancels dispatching. However, the action code executes immediate dispatching again so that the orders remain dispatched.

If the operations were planned without gaps before the adjustment, a sequence without gaps will also be created after the adjustment. If the operations are shorter due to the setup time change, the connections are retained and the subsequent operations are brought forward. However, this only applies to a production plan without gaps.

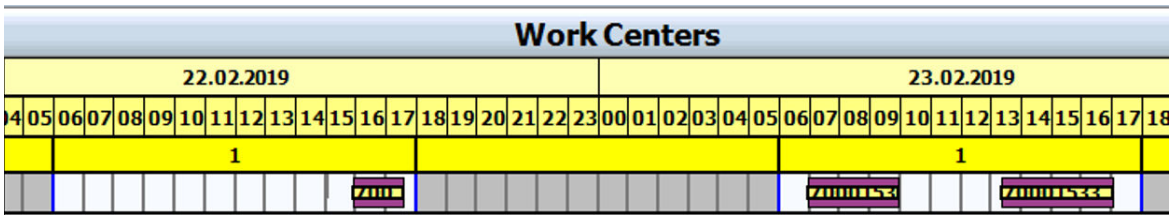
If there are gaps between the operations before the adjustment, these are retained. For a production plan with gaps, the operations are dispatched to the same start time again and the gaps are retained if the gaps are not filled by extending the operations.

> ⚠ Restriction
>
> - Setup times are only adjusted for dispatched operations. The function has no effect for operations not yet dispatched.
> - It is not possible to change the setup time for operations in the past. The operations are rescheduled during the adjustment. Therefore, when the function is executed on past operations, these operations shift to the present.
> - The setup time adjustment is not available for PI planned orders.

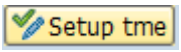
> → Remember
>
> - Automatic redispatching requires a strategy profile, which is transferred to the action code via a Customizing parameter. The LMPC standard delivery includes a strategy profile with a corresponding configuration.
> - The prerequisites of action code S_EPRST are also valid here.

Procedure

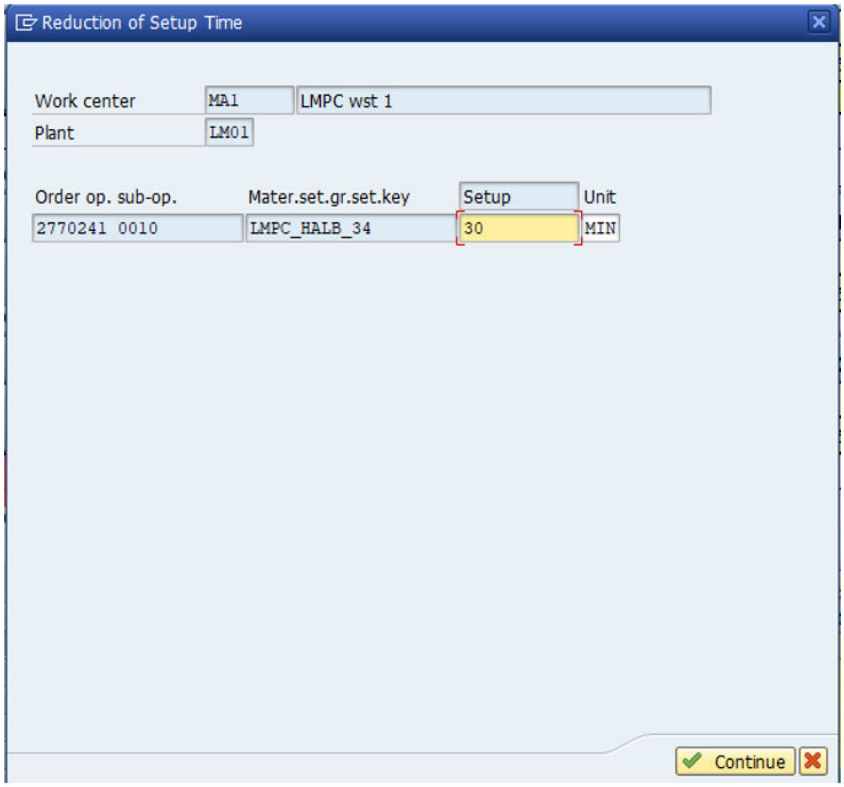
- Situation at start:



Initial Situation

- To check the setup time, execute action code 

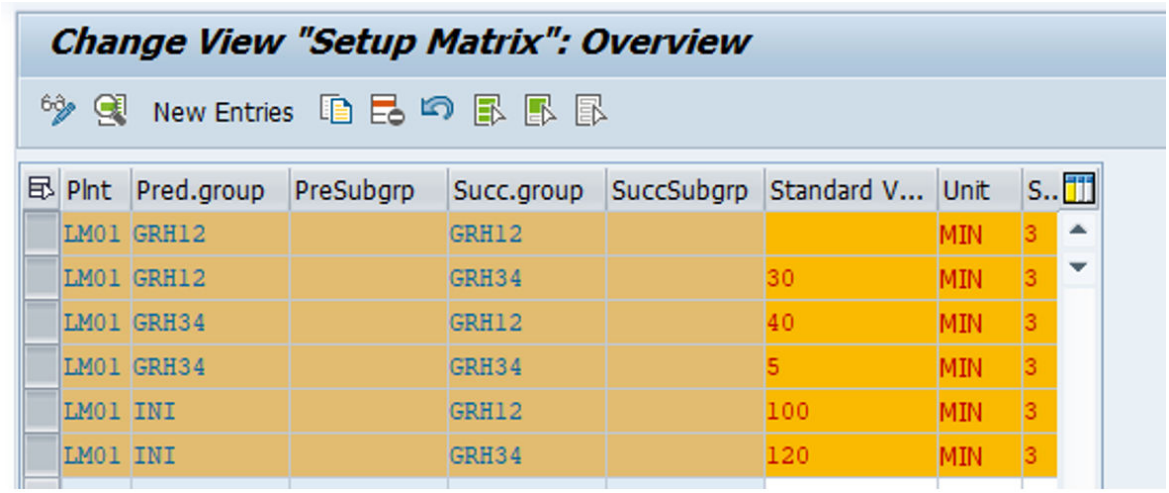
(S_AVRR) to adjust the setup time manually.



Information on Current Setup Time

The current setup time for the order operations is displayed. The function is canceled because the setup time should not be changed manually.

- Settings in setup matrix (Transaction OPDA):



Plnt	Pred.group	PreSubgrp	Succ.group	SuccSubgrp	Standard V...	Unit	S..
LM01	GRH12		GRH12			MIN	3
LM01	GRH12		GRH34		30	MIN	3
LM01	GRH34		GRH12		40	MIN	3
LM01	GRH34		GRH34		5	MIN	3
LM01	INI		GRH12		100	MIN	3
LM01	INI		GRH34		120	MIN	3

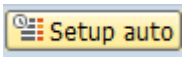
Setup Matrix

A look at the setup matrix (transaction OPDA) shows the setup times for the transitions. The groups here have the same names as the materials.

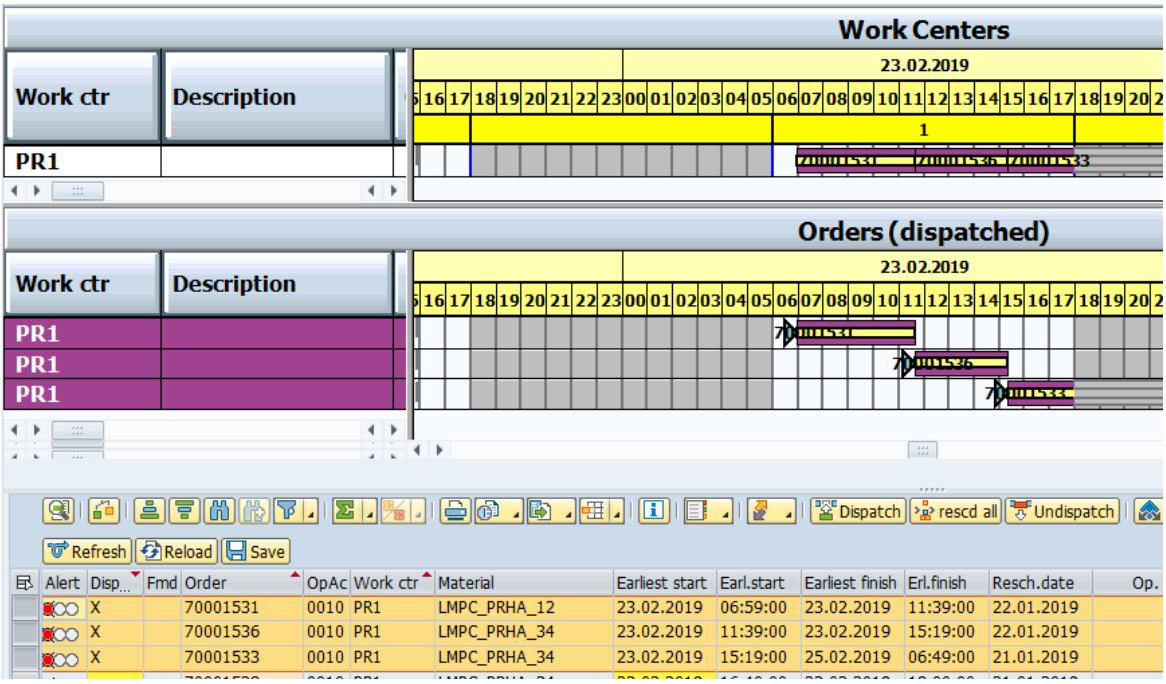
- Select the operations for which the setup time is to be adjusted automatically on the basis of the setup matrix settings.

Alert	Disp...	Fmd	Order	OpAc	Work ctr	Material	Earliest start	Earl.start
	X		70001531	0010	PR1	LMPC_PRHA_12	23.02.2019	06:59:00
	X		70001536	0010	PR1	LMPC_PRHA_34	23.02.2019	08:39:00
	X		70001533	0010	PR1	LMPC_PRHA_34	23.02.2019	11:39:00

Selection of Operations

- Execute the action code 

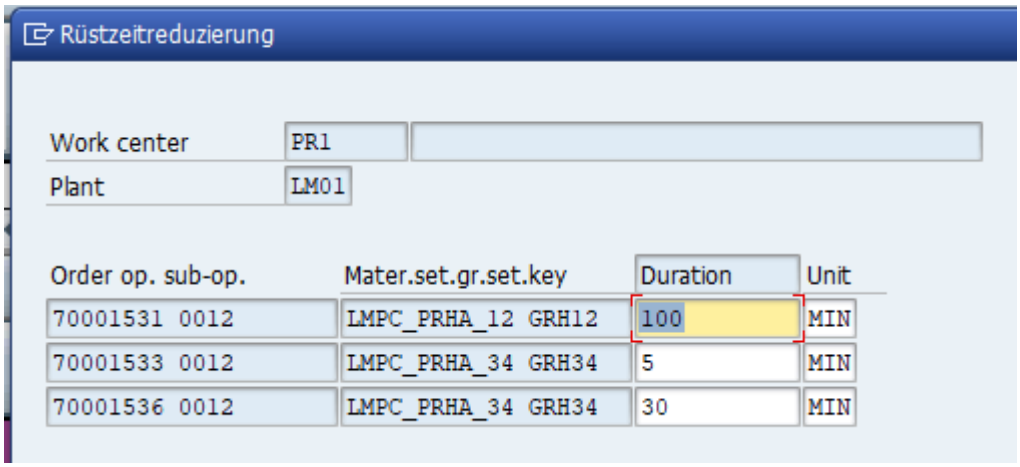
(S_AVRU).
- Result:



Result of Adjustment

The setup times of the operations have been adjusted.

- You can use the action code Setup tme (S_AVRR) for the manual setup time adjustment to check the new setup times.



Check Changes

Compared with the setup matrix, you can see that the setup times have been adjusted according to the defined settings.

2.6.4.1.3 S_OSC Optimum Adjustment of Setup Times

Adjust setup times according to freely definable rules.

Use

You use the action code S_OSC to change the setup times of previously dispatched operations. The rules for the setup time change are defined in Customizing. S_OSC works in a similar way to S_AVRR except that the rules for adjusting the setup times can be freely defined and are not based on the setup matrix.

The action code can be used in a scenario in which a production plan was created manually by the planner. After dispatching has been carried out, the correct setup time of the operations is calculated with the action code S_OSC and the orders are shifted accordingly so that the plan remains gap-free.

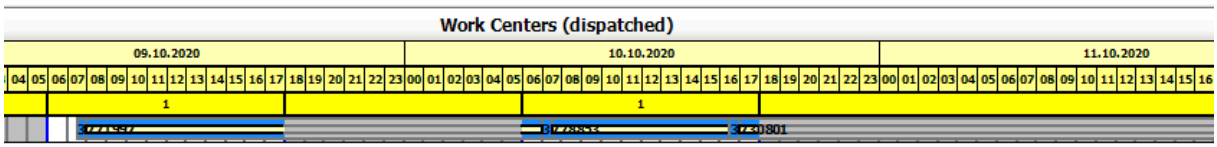
This function can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

> ⚠ Restriction
>
> - Setup times are only adjusted for dispatched operations. The function has no effect for operations not yet dispatched.
> - It is not possible to change the setup time for operations in the past. The operations are rescheduled during the adjustment. If the function is executed on past operations, these operations shift to the present.
> - For process orders, the requirements for the design of the individual phases apply in the same way as for PP-PI optimum dispatching.
> - The setup time adjustment is not available for PI planned orders.
> - The function cannot process parallel operations. The operations must be dispatched to the capacity sequentially.
> - The adjustment is carried out for each selected work center. Rules are not taken into account across work centers.

> → Remember
>
> When you change the setup times, the operations are deallocated and then rescheduled. If the operations were previously dispatched without gaps, they are dispatched again without gaps. This prevents gaps from occurring when the setup time is reduced.
>
> Automatic redispatching requires a strategy profile, which is transferred to the action code via a parameter. The LMPC standard delivery includes a strategy profile with a corresponding configuration.

Procedure

Operations are dispatched to the work center.



Planning Situation in the Graphic

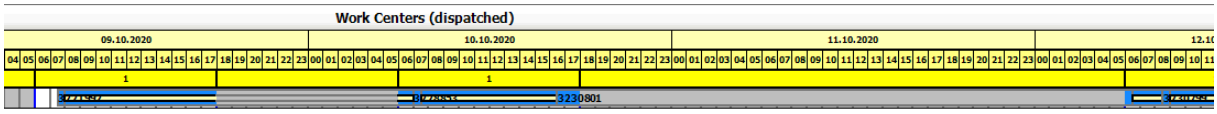
Select the operations for which the setup times are to be adjusted.

Alert	Dis...	F...	Sequence	Order Number	OpAc	WrkCntr...	Material	Work ctr	Cat	Order Quantity	UoM	TgtSetup	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X		3221992	0010	10003967	LMPC_FERT_12	MA3	001	11	PC	0.500	09.10.2020	07:30:00	10.10.2020	07:00:00
	X	X		3228853	0010	10003967	LMPC_FERT_12	MA3	001	9	PC	0.500	10.10.2020	07:00:00	10.10.2020	16:30:00
	X	X		3230801	0010	10003967	LMPC_FERT_KE	MA3	001	2	PC	0.500	10.10.2020	16:30:00	12.10.2020	07:00:00
	X	X		3230799	0010	10003967	LMPC_FERT_KE	MA3	001	9	PC	0.500	12.10.2020	07:00:00	12.10.2020	16:30:00
				3230800	0010	10003967	LMPC_FERT_KE	MA3	001	33	PC	0.500	06.10.2020	06:00:00	08.10.2020	15:30:00

Selection of Operations

Execute the action code OptSetupTm (S_OSC).

Result:



Result of the Setup Time Adjustment in the Graphic

Alert	Dis...	F...	Sequence	Order Number	OpAc	WrkCntr...	Material	Work ctr	Cat	Order Quantity	UoM	TgtSetup	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X		3221992	0010	10003967	LMPC_FERT_12	MA3	001	11	PC	0.500	09.10.2020	07:30:00	10.10.2020	07:00:00
	X	X		3228853	0010	10003967	LMPC_FERT_12	MA3	001	9	PC	0.500	10.10.2020	07:00:00	10.10.2020	16:30:00
	X	X		3230801	0010	10003967	LMPC_FERT_KE	MA3	001	2	PC	2.000	10.10.2020	16:30:00	12.10.2020	08:30:00
	X	X		3230799	0010	10003967	LMPC_FERT_KE	MA3	001	9	PC	0.500	12.10.2020	08:30:00	12.10.2020	18:00:00
				3230800	0010	10003967	LMPC_FERT_KE	MA3	001	33	PC	0.500	06.10.2020	06:00:00	08.10.2020	15:30:00

Result of the Setup Time Adjustment in the ALV Grid

The setup times were adjusted. You can see this in the column for the target setup times. You can also see the adjusted setup times when looking at the adjusted bars in the graphic.

Planning remains gap-free.

For instructions on configuring the function, see the LMPC Configuration Guide. S_OPL, S_OSC Configuration: Optimized Dispatching and Optimized Adjustment of Setup Time

2.6.4.2 S_AK02 Change Order

Function for changing planned, production, and process orders.

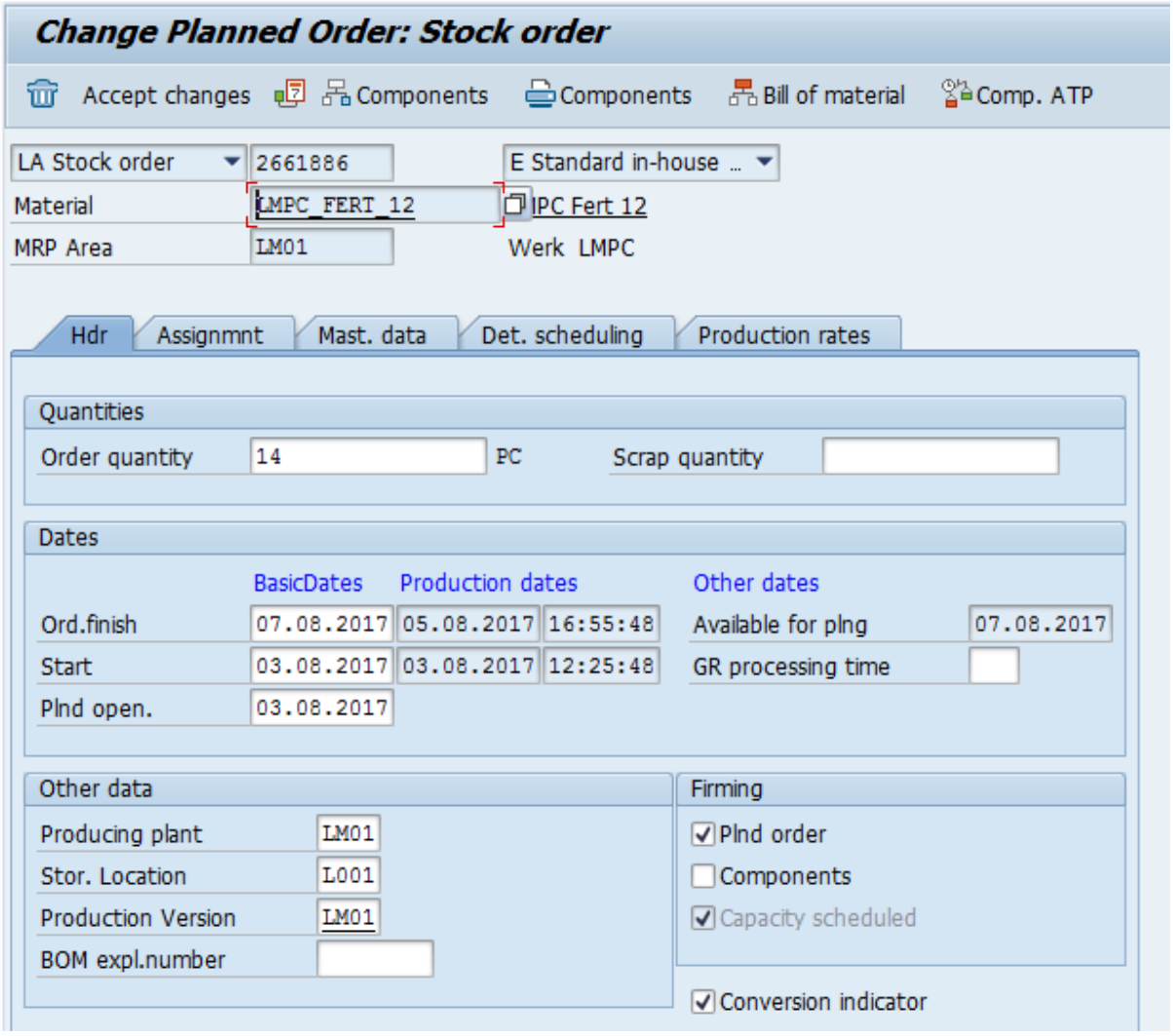
Select an operation of an order, for example, by means of the ALV Grid.

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish	Nu...
	X	X	MA4	1329483	2		0	LMPC_FERT_12	0020		02.08.2017	13:36:51	04.08.2017	09:36:51	
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48	
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	14:55:48	
	X	X	MA4	1329484	2		0	LMPC_FERT_12	0020		04.08.2017	09:36:51	05.08.2017	07:36:51	
	X	X	MA4	2661884	2		0	LMPC_FERT_12	0020		05.08.2017	07:36:51	10.08.2017	09:36:51	

Select Order Operation

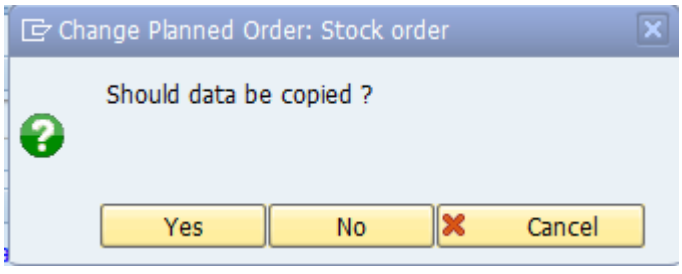
Execute the action code chg ord (S_AK02) or double click or hotspot click on the order number.

The system displays a screen with the order header data. The data can now be changed, for example, the quantity.



Order Header

Choose the Back button to exit the screen for changing the order. For planned orders that have already been dispatched, you may have to confirm the changes.



Popup Window Data Transfer

Result:

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X	MA4	1329483	2		0	LMPC_FERT_12	0020		02.08.2017	13:36:51	04.08.2017	09:36:51
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48
	X	X	MA4	1329484	2		0	LMPC_FERT_12	0020		04.08.2017	09:36:51	05.08.2017	07:36:51
	X	X	MA4	2661884	2		0	LMPC_FERT_12	0020		05.08.2017	07:36:51	10.08.2017	09:36:51
	X		MA3	60007633	1	10	0	LMPC_FERT_KE	0010		09.08.2017	12:36:51	12.08.2017	09:06:51
	X	X	MA4	2661885	2		0	LMPC_FERT_12	0020		10.08.2017	09:36:51	11.08.2017	07:36:51

Result Action Code S_AK02

The order has been changed. If the operation was dispatched previously, it remains dispatched.

If the order operation was dispatched before the change, the change by the standard SAP system cancels the dispatching. This is necessary because the change executes rescheduling that recalculates the capacity requirements. To ensure that the operations remain dispatched, this function executes automatic dispatching again. The operation is returned to the dispatching function with its original date.

> ⓘ Note
>
> When you return to the HJPT planning table, the changes to the data must be processed. To do this, all data providers for the changed data records are run once and the ALV Grid is refreshed. Dispatching the operation again, if necessary, and loading the changed data may require a certain runtime.

If a quantity change is made, this can affect a production plan without gaps:

- If the quantity is reduced, the duration of the operation is reduced. If the operation is within a group of dispatched operations, this results in a gap in the production plan.
- If the quantity is increased, the duration of the operation becomes longer. If the operation is within a group of dispatched operations, all subsequent operations move into the future because this operation requires more capacity.

If an order is for a date in the past and is changed, rescheduling results in the order receiving a new start time. This new start time will be in the present because an operation cannot be dispatched in the past. As a result, it moves in planning. To prevent this, you could, for example, create a rule with the function of restricting the action code, which prevents orders that are in the past from being changed. Action Code Limits [page 104]

The action code can be executed for one or more operations. For execution in multiple processing, the configuration must be converted. Action Codes: Creating, Displaying, and Changing Operations and Orders

Multiple processing is executed as if the function were individually called several times in succession. The current date of the first operation is read. The change screen is called. After the change, the first operation is redispatched to the previously read date. Afterwards, the second operation is processed. The current date of the second operation is read, and so on.

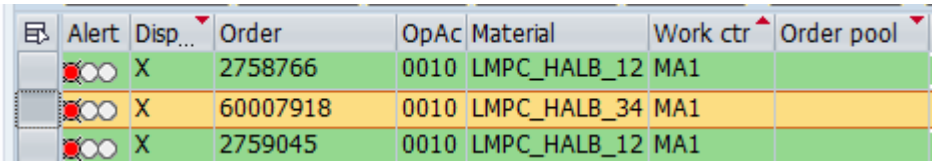
> → Remember
>
> It is not possible to change externally locked orders. It is also not possible to change orders with fixed operations. If there are externally locked orders or fixed operations in the selection, the function terminates with an error message.

You can use a setting in Customizing to deactivate dispatching after changes. Previously dispatched operations are then deallocated after a change.

2.6.4.3 S_AK05 Displaying an Order

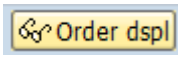
You can use this action code to branch to the display of the details for the order header.

- Select an order operation, for example, using the ALV Grid.

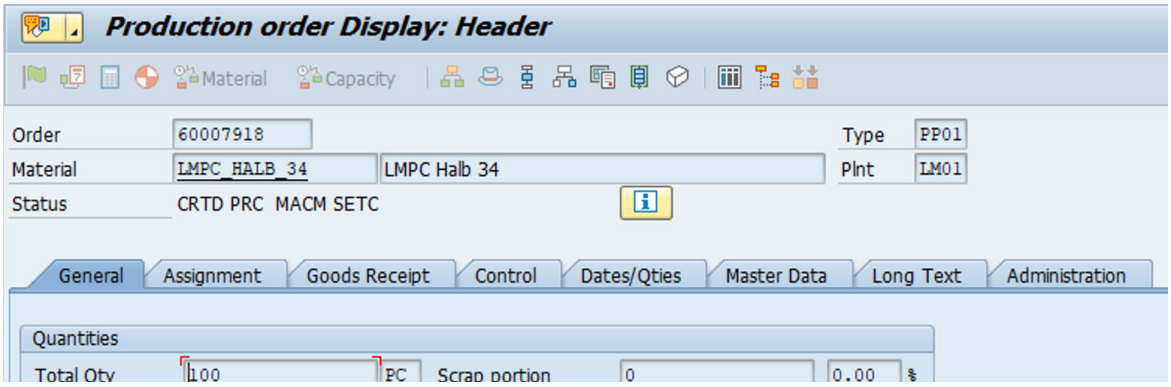


Alert	Disp...	Order	OpAc	Material	Work ctr	Order pool
	X	2758766	0010	LMPC_HALB_12	MA1	
	X	60007918	0010	LMPC_HALB_34	MA1	
	X	2759045	0010	LMPC_HALB_12	MA1	

Select Order Operation

- Execute the action code 

(S_AK05).
- Result:



Display of the Selected Order

The detailed data for the order is displayed. The data cannot be changed.

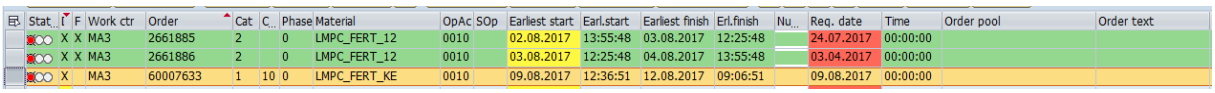
2.6.4.4 S_AUTEXT Change the Long Text of Production Orders and Process Orders

Application

You use this action code to change the long text of production or process orders.

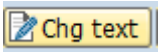
Procedure

Select an operation of a production order or process order, for example, by means of the ALV Grid.



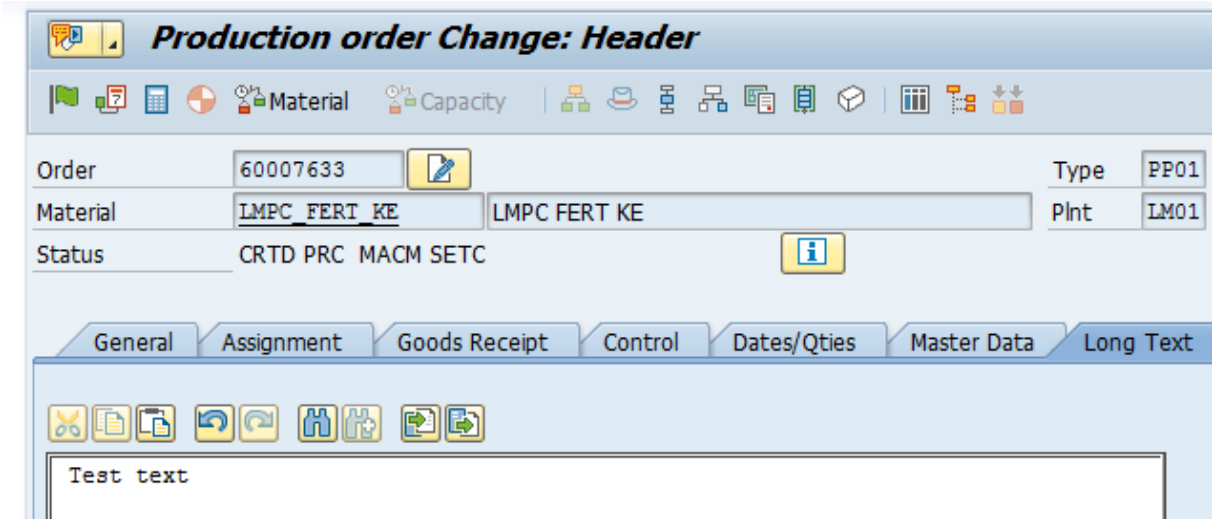
Stat.	I	F	Work ctr	Order	Cat	C.	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish	Nu...	Req. date	Time	Order pool	Order text
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48		24.07.2017	00:00:00		
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48		03.04.2017	00:00:00		
	X		MA3	60007633	1	10	0	LMPC_FERT_KE	0010		09.08.2017	12:36:51	12.08.2017	09:06:51		09.08.2017	00:00:00		

Select Order Operation

Execute the action code 

(S_AUTEXT).

You can now change the long text for the order.



Display Long Text

Use the *Back* button to return to the LMPC planning table. The changes are adopted.

Result:

Stat.	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish	Nu...	Req. date	Time	Order pool	Order text
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48		24.07.2017	00:00:00		
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48		03.04.2017	00:00:00		
	X		MA3	60007633	1	10	0	LMPC_FERT_KE	0010		09.08.2017	12:36:51	12.08.2017	09:06:51		09.08.2017	00:00:00		Test text

Result

The system displays the newly entered text in the field for the order text.

> ⓘ Note
>
> Special feature of process orders: If the long text is still empty, the system automatically displays the order short text. You can simply change the text, which has no effect on the order short text.

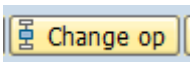
> ⚠ Restriction
>
> The system only displays the first 72 characters of the first row of the text in the ALV Grid of the HJPT planning table.

2.6.4.5 S_AV02 Changing Operations of the Production Order or Process Order

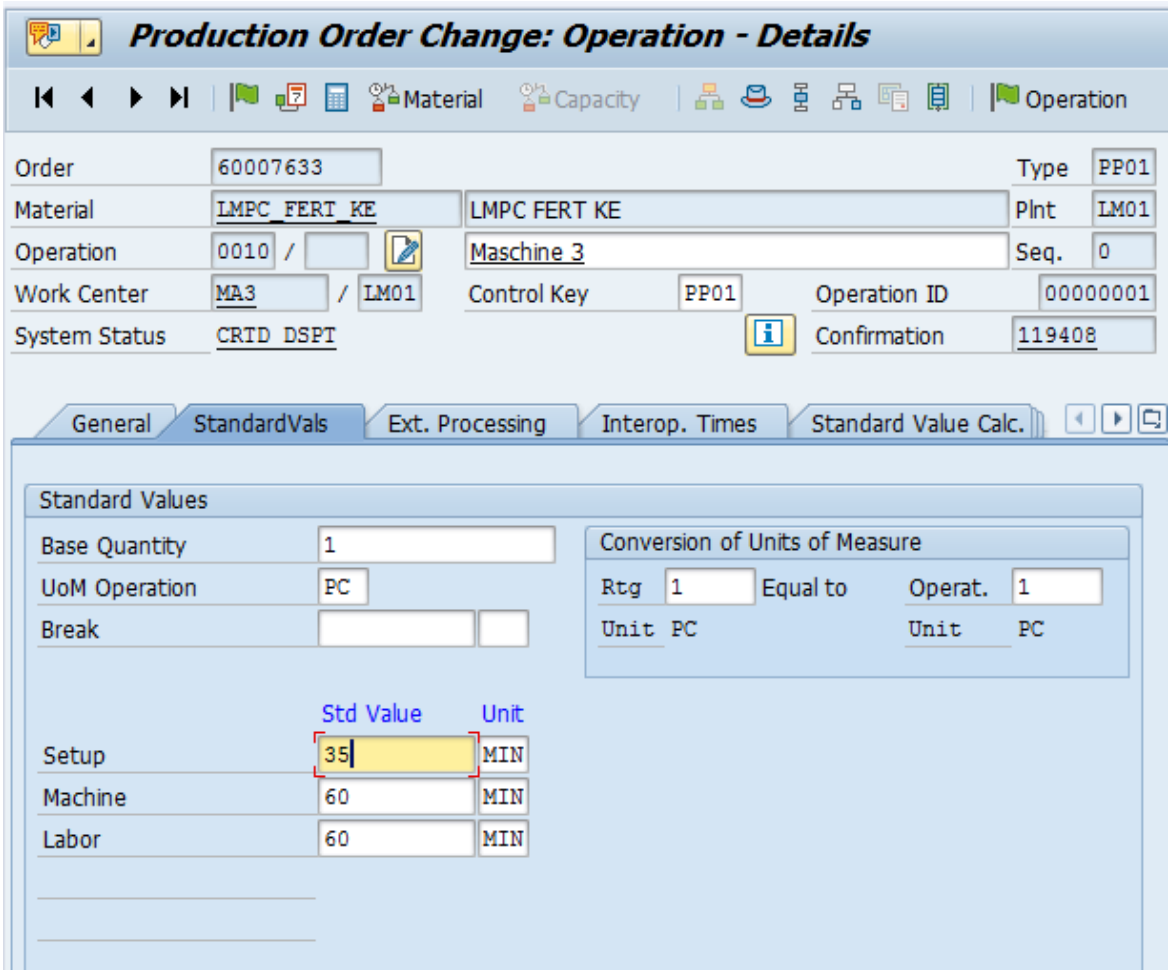
- Select an order operation, for example, using the ALV Grid.

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X	MA4	1329483	2		0	LMPC_FERT_12	0020		02.08.2017	13:36:51	04.08.2017	09:36:51
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48
	X	X	MA4	1329484	2		0	LMPC_FERT_12	0020		04.08.2017	09:36:51	05.08.2017	07:36:51
	X	X	MA4	2661884	2		0	LMPC_FERT_12	0020		05.08.2017	07:36:51	10.08.2017	09:36:51
	X		MA3	60007633	1	10	0	LMPC_FERT_KE	0010		09.08.2017	12:36:51	12.08.2017	09:06:51
	X	X	MA4	2661885	2		0	LMPC_FERT_12	0020		10.08.2017	09:36:51	11.08.2017	07:36:51

Selection of an Order Operation

- Execute the action code 

(S_AV02).
- You can now change the data of the operation.



Operation Detail

- You use the Back button to return to the LMPC planning table. The changes are adopted.
- Result:

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X	MA3	1331027	2		0	LMPC_FERT_34	0010		05.08.2017	12:25:48	08.08.2017	09:55:48
	X	X	MA3	2661887	2		0	LMPC_FERT_12	0010		08.08.2017	09:55:48	08.08.2017	17:25:48
	X	X	MA3	2661891	2		0	LMPC_FERT_12	0010		08.08.2017	17:25:48	09.08.2017	09:55:48
	X		MA3	60007633	1	10	0	LMPC_FERT_KE	0010		09.08.2017	12:36:51	12.08.2017	09:06:51

Result

The operation has been changed and remains dispatched, if it has already been dispatched.

> ⚠ Restriction
>
> - The action code only works for production orders and process orders.
> - The action code can only be executed for one order.

2.6.4.6 S_AV77 Change Network

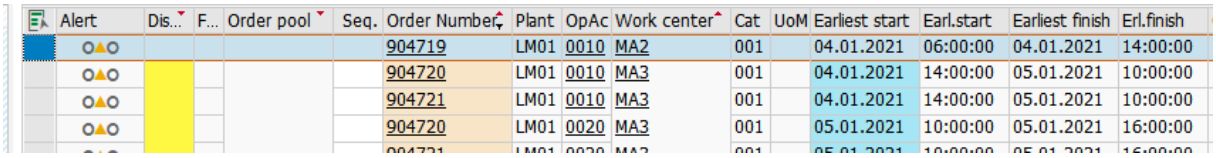
Change network operations

Usage

You can use the action code S_AV77 to branch to the change mode of the operation view of networks.

Procedure

Select an operation of a network in the ALV Grid of the HJPT planning table.



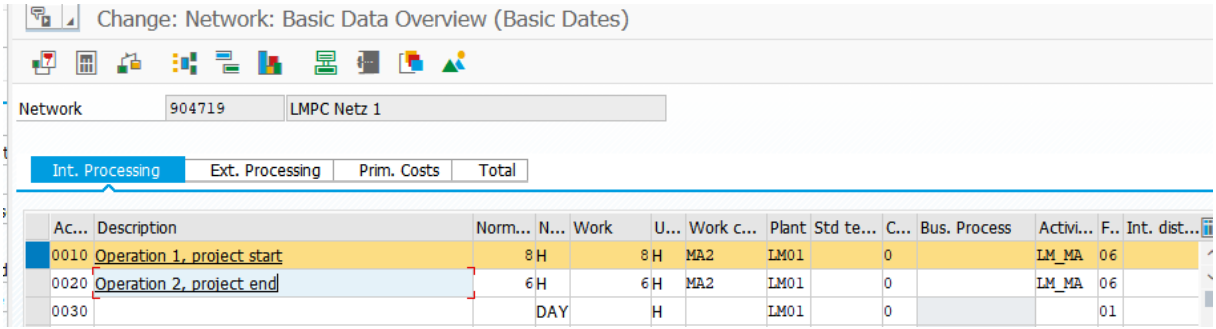
Alert	Dis...	F...	Order pool	Seq.	Order Number	Plant	OpAc	Work center	Cat	UoM	Earliest start	Earl.start	Earliest finish	Erl.finish
					904719	LM01	0010	MA2	001		04.01.2021	06:00:00	04.01.2021	14:00:00
					904720	LM01	0010	MA3	001		04.01.2021	14:00:00	05.01.2021	10:00:00
					904721	LM01	0010	MA3	001		04.01.2021	14:00:00	05.01.2021	10:00:00
					904720	LM01	0020	MA3	001		05.01.2021	10:00:00	05.01.2021	16:00:00

Network Operation Selection

Execute the action code 

(S_AV77).

The operation overview of the network appears.



Ac...	Description	Norm...	N...	Work	U...	Work c...	Plant	Std te...	C...	Bus. Process	Activi...	F..	Int. dist...
0010	Operation 1, project start	8	H	8	H	MA2	LM01		0		LM_MA	06	
0020	Operation 2, project end	6	H	6	H	MA2	LM01		0		LM_MA	06	
0030			DAY		H		LM01		0			01	

Execute Network Changes

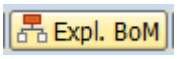
You can make the required changes there.

> → Tip
>
> For the processing of networks, see the notes in the section on the project system. LMPC and Project System (PS) [page 566]

2.6.4.7 S_BOMEXP Bill of Material Explosion and Component Quantity Update for Planned Orders

Bill of material explosion and component quantity update for planned orders

Use

The action code 

(S_BOMEXP) performs a BOM explosion and a component quantity update for planned orders. It can be used as a stand-alone action code, or as a follow-up action code for planning functions.

The BOM explosion and quantity update of the components takes place for dispatched orders with the help of a range of standard SAP function modules. If an order has been dispatched, the BOM explosion and quantity update take place with the planning data of the planned order. If the action code is applied to planned orders, which have not yet been dispatched, the BOM explosion takes place on the date that the MRP run has specified for the order.

> ⚠ Restriction
>
> - If the date of an order is in the past, the BOM explosion takes place on the current date. An explosion for times in the past is not possible.
> - The action code works for planned orders only. If the action code is applied to other order types, such as production orders or process orders, there is no BOM explosion. Orders of these order types are simply ignored.
> - The action code was developed to update the component quantities. Other changes to the BOM, such as changing the item category of BOM elements, are not supported.

4 use cases:

- S_BOMEXP as a standalone action code
- S_BOMEXP as the subsequent action code for planning functions
- S_BOMEXP when moving operations in the graphical planning table
- S_BOMEXP in background processing Program /LMPC/HJPT Background Processing [page 26]

The explosion date can be displayed in the ALV Grid of the HJPT planning table. The technical field name for the field with the explosion date is PLAUF_KO. It is located in the fields for the capacity requirements header.

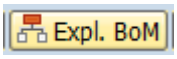
Procedure S_BOMEXP as a Standalone Action Code

- Select one or more operations in the ALV Grid of the LMPC HJPT planning table.

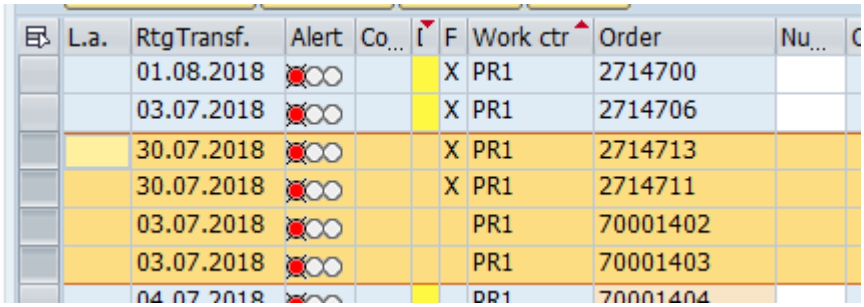
L.a.	RtgTransf.	Alert	Co...	I	F	Work ctr	Order	Nu...	Ord
	01.08.2018				X	PR1	2714700		
	03.07.2018				X	PR1	2714706		
	06.07.2018				X	PR1	2714713		
	05.07.2018				X	PR1	2714711		
	03.07.2018					PR1	70001402		
	03.07.2018					PR1	70001403		
	04.07.2018					PR1	70001404		

Selection of Order Operations

Two planned orders (order numbers 2714713 and 2714711) and two production orders (70001402 and 70001403) are selected. The second column displays the explosion date of the bill of material. The operations have not been dispatched.

- Execute the action code 

(S_BOMEXP).
- Result:



L.a.	RtgTransf.	Alert	Co...	I	F	Work ctr	Order	Nu...
	01.08.2018				X	PR1	2714700	
	03.07.2018				X	PR1	2714706	
	30.07.2018				X	PR1	2714713	
	30.07.2018				X	PR1	2714711	
	03.07.2018					PR1	70001402	
	03.07.2018					PR1	70001403	
	04.07.2018					PR1	70001404	

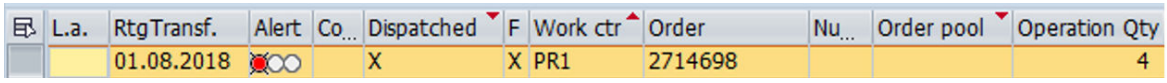
Result S_BOMEXP

The result shows that the BOM explosion has been performed for the planned orders. The explosion date has changed. The selected production orders have not changed.

Procedure S_BOMEXP as the Subsequent Action Code for Planning Functions

For example, you use Customizing settings to combine the action code S_MANPL for manual planning with the action code S_BOMEXP.

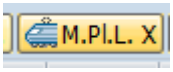
- Situation before dispatching:



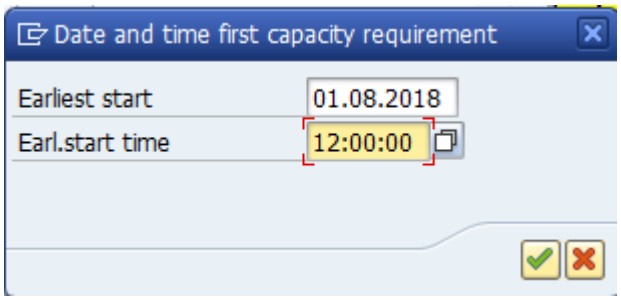
L.a.	RtgTransf.	Alert	Co...	Dispatched	F	Work ctr	Order	Nu...	Order pool	Operation Qty
	01.08.2018			X	X	PR1	2714698			4

Situation Before Dispatching

The order operation from order 2714698 has not been dispatched. The date of the last explosion BOM is June 29, 2018.

- The operation is selected in the ALV Grid of the LMPC HJPT planning table.
- The action code 

(S_MANPL) with automatic successor action code S_BOMEXP is executed.
- The desired dispatching date is entered.



Start Date and Start Time for Dispatching

- Result:

L.a.	RtgTransf.	Alert	Co...	Dispatched	F	Work ctr	Order	Nu...	Order pool	Operation Qty
	01.08.2018			X	X	PR1	2714698			4

Dispatching Result

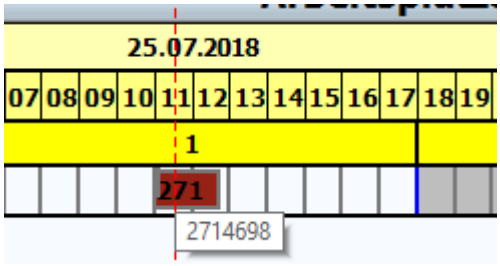
The operation of order 2714698 has been dispatched on the desired date. The BOM explosion also took place on this date.

> ⚠ Caution
>
> This combination of action codes does not exist in the LMPC delivery and must be configured in the system if required.

Concatenation with S_BOMEXP [page 423]

Procedure S_BOMEXP When Moving Operations in the Graphical Planning Table

- Initial situation:



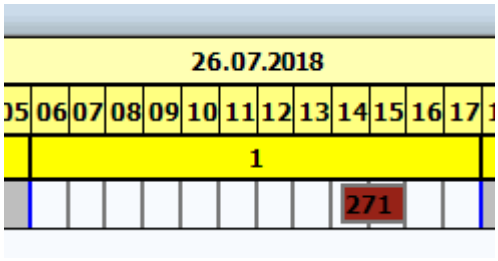
Initial Situation Graphical Planning Table

L.a.	RtgTransf.	Alert	Co...	I	F	Work ctr	Order	Nu...	Order pool	Operation Qty
	06.07.2018			X	X	PR1	2714713			31

Initial Situation in the ALV Grid

The order operation from order 2714698 is dispatched on July 25, 2018. The BOM explosion date is June 29, 2018.

- Move the dispatched order in the Dispatched Orders chart to a different date.



Drag and Drop to a New Date

- Result:

L.a.	RtgTransf.	Alert	Co...	I	F	Work ctr	Order	Nu...	Order pool	Operation Qty
	30.07.2018			X	X	PR1	2714713			31

Result in the ALV Grid

The BOM has been exploded again. The explosion date is the same date as the new dispatching date.

> ⚠ Caution
>
> The action code S_BOMEXP is configured for this use case with the trigger for rescheduling in the graphical planning table. This is not supported in the standard delivery of LMPC and must first be configured in the relevant system.

Related Information

S_BOMEXP Configuration: BOM Explosion and Component Quantities

2.6.4.8 S_CHORD Change Orders via Input Window

Use

You can use this action code to change the quantities and start times for production and process orders.

The changes are entered in a dialog box. This differentiates this action code from the action codes S_AK02 and S_AV02, for which there is a jump to the relevant order. S_AK02 Change Order [page 116]S_AV02 Changing Operations of the Production Order or Process Order [page 120]

This action code uses the same class as the action code for creating simulative production orders and process orders. S_CRORD Create Simulative Order [page 156]

You can use this action code to change both simulative orders that were created with the action code S_CRORD and persistent orders that already exist in the database.

Procedure

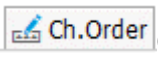
Select an operation of a production order or process order in the ALV Grid.



Selection

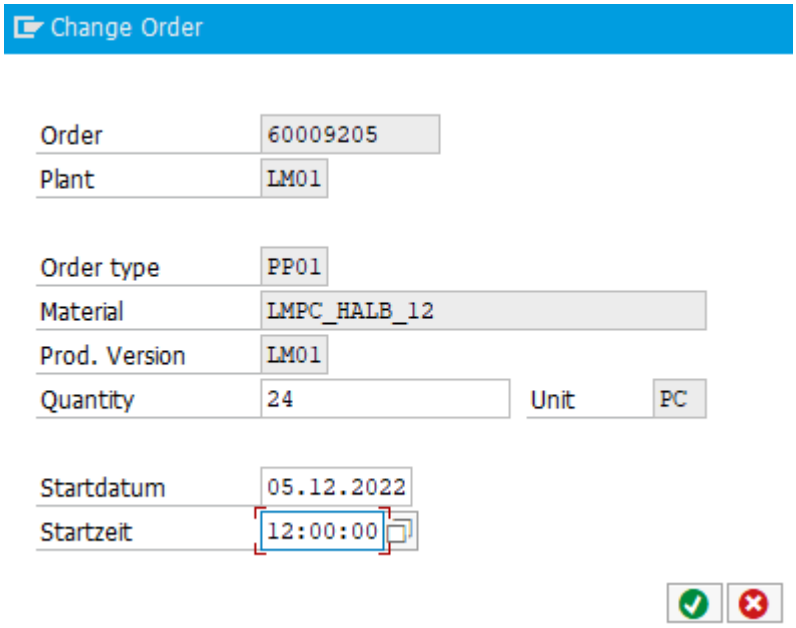
You can only select and change one assignment at a time.

You must select an operation of a production order or process order, otherwise the function terminates with an error message.

Execute the action code 

(S_CHORD).

The system displays a dialog box in which you can enter the changes.



Enter Changes

You can enter the quantity of the order and the desired start date.

The other fields on the screen are for information purposes only. These values cannot be changed.

When you confirm, the changes are made.

The system checks the change of data. If no data has been changed, processing is terminated.

There is a check routine for the start date. It is not possible to schedule into the past. If you enter a date in the past, the system displays an error message.

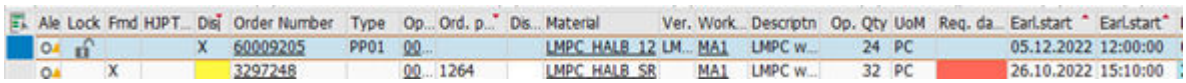
If changes are made, the order must be rescheduled. Dispatching is lost due to scheduling.

In a first step, the order is scheduled in such a way that the basic start date is set to the entered date.

If the selected operation has been dispatched previously and dispatching is set, the entire order is dispatched in the second step. All operations of orders that are open in the planning table are dispatched. The first operation is dispatched to the start time entered. If the order has multiple operations, they are dispatched one after the other, meaning that each operation does not start until the predecessor has been completed. The operations are planned sequentially – parallel planning is not supported.

Dispatching operations can adjust the basic dates of the order.

Result:



Result

The operation of the order was dispatched again after the change. The start time of the order and the total order quantity have changed.

⚠ Restriction

- Only the total order quantity can be changed. The operation quantities automatically adjust to the total order quantity.

- It is a simple function to change the order quantity with reduced functionality. The check routines that run for the action codes S_AK02 and S_AV02 when you move through the change screens of the orders are not processed with this function. For example, the system does not check the availability of the components.

2.6.4.9 S_CHSDV Change Standard Values

Change Standard Values of Operations

Usage

You can use the action code S_CHVGW to change the standard values of the selected operations. This changes the duration and capacity requirements of operations (depending on the formulas for scheduling).

The capacity requirements and durations of operations are usually dependent on the quantity produced. However, there may be a requirement to adjust the durations of individual operations independently of the production quantity.

For example, when a new product is introduced, production may take longer initially because workers need to learn the production process. Induction into production is required, which slows down production.

To ensure that the routings of the material do not have to be changed in this initial phase, this action code enables you to adjust the duration and capacity requirements of operations for individual orders.

→ Remember

The standard values are changed within the (planned) order operation, not in the routing itself. The change only takes place for the selected operations. The routings involved remain unchanged.

You can use this function to change the following orders:

- Planned orders in discrete manufacturing (PP-ERP)
- Production orders in discrete manufacturing (PP-ERP)
- Planned orders in repetitive manufacturing (PP-REM)
- Process orders in the process industry (PP-PI)

You cannot use this function to change the following orders:

- Planned orders in the process industry (PP-PI).
- Maintenance orders (order category 30)
- Operations of externally locked orders.
- Operations that cannot be processed due to inconsistencies in the standard value configuration.
- All other order types not listed here.

When you call planned orders in the process industry and for externally locked orders, the data is only displayed. When you select maintenance orders, the function terminates with an error message.

Procedure

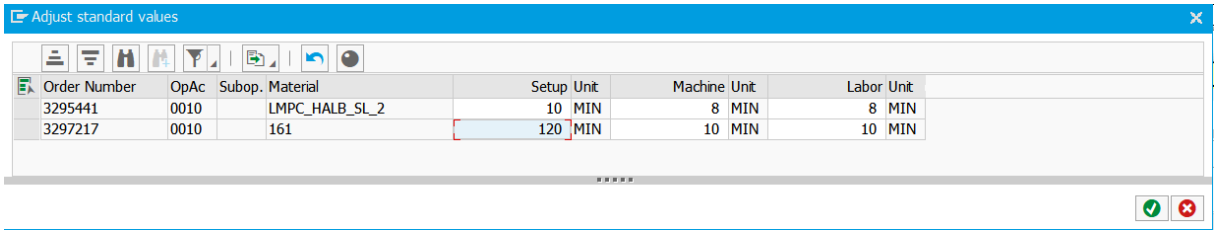
Select one or more operations that are to be changed in the ALV Grid of the HJPT planning table.

Alert	Lock	Dis...	Order Number	OpAc	Subop.	Material	Work center	Short description	Latest start	Lat. start time	Latest finish	Lat.finish
		X	3295441	0010		LMPC_HALB_SL_2	MA1	LMPC wst 1	03.02.2022	10:20:53	04.02.2022	16:50:53
		X	3297217	0010		161	MA1	LMPC wst 1	04.02.2022	16:50:53	05.02.2022	12:20:53
			3297244	0010		LMPC_HALB_SR	MA1	LMPC wst 1	24.01.2022	06:00:00	24.01.2022	09:01:15
			3297220	0010		161	MA1	LMPC wst 1	24.01.2022	06:00:00	24.01.2022	08:30:00

Selection of Operations

Execute the action code Chg.StdVal (S_CHVGW).

A dialog box appears in which the standard values of the selected operations are displayed. You configure which of the standard values of the operations are displayed and which of these standard values can be changed via Customizing for the function. S_CHSDV Configuration: Change to Standard Value



Dialog Box for Changing Standard Values

Only columns for standard values that exist in at least one of the operations are displayed. If the standard value descriptions are identical for all selected operations, they are used as the header of the editable columns, otherwise the columns are labeled with the relevant standard value number.

Enter the desired standard values. During entry, the input rules configured at the respective work center are checked and, if necessary, displayed for the user as a message.

When you confirm the dialog box, the changes are made.

The confirmation can be executed by clicking the mouse or by pressing the F8 or Enter key. You can cancel the window by clicking the mouse or pressing the ESC key.

When the change is made, the operations are rescheduled. The following applies to operations that have already been dispatched: When you change the standard values, the dispatching status is reset. To ensure that the operations remain dispatched, the function dispatches them again on the original start date.

Result:

Alert	Lock	Dis...	Order Number	OpAc	Subop.	Material	Work center	Short description	Latest start	Lat. start time	Latest finish	Lat.finish
		X	3295441	0010		LMPC_HALB_SL_2	MA1	LMPC wst 1	03.02.2022	10:24:54	04.02.2022	14:37:24
		X	3297217	0010		161	MA1	LMPC wst 1	04.02.2022	16:50:53	05.02.2022	14:50:53
			3297244	0010		LMPC_HALB_SR	MA1	LMPC wst 1	24.01.2022	06:00:00	24.01.2022	09:01:15
			3297220	0010		161	MA1	LMPC wst 1	24.01.2022	06:00:00	24.01.2022	08:30:00

Result

By changing the start times, you can see that the duration of the operations has changed.

The changes are made in the simulation. They only become persistent when they are saved.

Special feature of the process industry:

If operations of process orders are selected, the individual phases of the respective operation are listed in the dialog box. The phases of planned orders of the process industry whose change is not supported are displayed but cannot be changed.

Additional Functions

There are three additional functions in the popup window:

- Resetting standard values 
- Setting standard values to zero 
- Calculating a duration in minutes 

The functions are only executed on selected values. You can make the selection by:

- selecting one or more rows
- selecting one or more columns
- selecting one or more cells

You can make a multiple selection by pressing the CTRL key while making the selection.

If you do not make a selection and execute one of the functions, the function is executed on the cell in which the cursor is positioned at this time. This is the first input-enabled field when the window is called.

When you reset the standard values, the standard values are reset to the values of the routing on the explosion date that is in the order header. If this date is in the past, the explosion is carried out with the current date.

In the case of setting the standard values to zero, the selected standard values are set to zero.

Resetting and zeroing standard values is only possible for input-enabled standard values. You use the Customizing settings for the function to define the input enablement for standard values. S_CHSDV Configuration: Change to Standard Value

Calculating a Duration

When you execute the function for calculating a duration, the system displays input fields for the start time and end time.



Entry of Period

The date fields are prefilled with the current date. The fields for the times are prefilled with 00:00 or 23:59.

This function calculates the linear time between the two specified times in minutes.

When the window is confirmed, the duration is calculated and transferred to the previously selected standard values.

The result is calculated as an integer. Any resulting decimal places are omitted.

> ⚠ Caution
>
> Only the linear duration between two times is calculated. The system does not take available capacity or a plant calendar into account. The time specifications are only used to calculate the duration. Entering times does not mean that the changed operations then have exactly this duration or that they start or end at

the specified times. The actual duration of the operations is determined by the scheduling formulas that process the entered standard values.

Processing Without Dialog Box

Resetting and placing zeroes before standard values can also be done without a dialog box. Corresponding settings need to be made in Customizing for this. S_CHSDV Configuration: Change to Standard Value

When processing without a dialog box, all standard values that are flagged as changeable in Customizing for the action code are reset or set to zero.

Recording of Changes

As soon as a standard value of an operation is changed, the planning table remembers this change. A change indicator is set and the change time and the user who made the change are saved. You can see this in the following fields:

Changed Standard Value	Standard Value Change Created By	Standard Values Last Changed By	Standard Values First Changed On	Standard Values Last Changed On
X	D056579	D056579	15.09.2021 12:18:27	15.09.2021 12:18:27

Fields for Displaying a Standard Value Change

The fields are in the layout settings in the group of HJPT help fields.

The data provider /LMPC/CL_DP_OP_ADD must be activated for the display to work correctly. Data Provider / LMPC/CL_DP_OP_ADD Additional Data for Operations [page 486]

→ Remember

If the changes to the standard values were made using the function for resetting standard values for all standard values of an operation, the standard values were reset to the values of the work center. In this case, the fields for displaying a standard value change are emptied. This is because the operation has the original values again.

If only individual standard values are reset to the values of the routing and other standard values of the same operation do not correspond to the values of the routing, the fields for recording changes are not reset because there are still changes to the operation.

If the function for setting the standard values to zero creates the values of the routing, the fields for displaying the change are also emptied.

If the user randomly enters the original standard values through a manual entry, the change is not reset because this is a manual change made by a user.

The information about the changes is stored for one year and is then deleted automatically.

⚠ Caution

- Changing the standard values can lead to inconsistencies if, for example, the standard values are changed in such a way that they do not match the scheduling formulas used. This may mean that operations can no longer be scheduled, no longer dispatched, or that the operations can no longer be processed in the HJPT planning table. The user is responsible for maintaining the standard values correctly.
  The LMPC logic supports the user with a basic check of the rules for input for the standard value. However, incorrect entries cannot be excluded.
- This function dispatches the operations back to their original start times after the standard values have been changed. However, it does not take the sequence of the operations into account. If several

operations are changed at the same time, this can result in a shift in the sequence of operations. For example, if three operations are changed, the first two could take significantly longer, meaning that the start time of the second operation is later than the original start time of the third operation. In this case, the third operation would be dispatched between the first two operations. To avoid this, the parameter for closing the gaps can be activated. S_CHSDV Configuration: Change to Standard Value

- You can use this function to set standard values to zero. Not all standard values of an operation can be set to zero at the same time, since this could result in the capacity requirements of an operation becoming zero. Without capacity requirements, an operation cannot be processed in the HJPT planning table. There is no check that prevents this setting of all standard values to zero. The user must check this themselves.
- Only the standard values of the operations are changed. Not the actual durations of the operations. The duration of operations results from the evaluation of the scheduling formulas when changing the operations.
- In the input-enabled ALV Grid of the popup window, you can use the remove button to delete an entire row. This is a generic function of the ALV Grid and cannot be suppressed. Using the remove button to delete a row is not a supported function. The user is not allowed to use the remove button when maintaining the standard values. If you accidentally press this button, cancel the change of the standard values by closing the window. Then restart.
- The duration for the standard values is only calculated in the time unit minutes. If standard values with other units are used, minutes are not converted to other time units.

→ Tip

By creating rules for coloring the bars in the graphic or for coloring the ALV Grid, the change of standard values can be indicated visually.

- Coloring of Bars of the Bar Chart [page 50]
- Coloring the ALV Grid [page 71]

The action code can also be used for background processing using the program /LMPC/HJPT, to reset standard values or to set them to zero. Program /LMPC/HJPT Background Processing [page 26]

Related Information

Concatenation with S_CHSDV [page 424]
Concatenation with S_SETSEL [page 426]

2.6.4.10 S_COPTXT LMPC HJPT Operation Text

Usage

You can use this action code to save a 72 character long text for each operation in the LMPC HJPT detailed scheduling planning board. If an order has several operations, several texts can be saved for each order, one text for each operation.

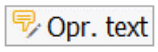
If you only want to create one text per order, use the functionality of the LMPC order text. S_CORTXT LMPC HJPT Order Text [page 134]

Procedure

Select one or more order operations in the ALV Grid.

	G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Ord. Q...	UoM	Work ctr	Material
	●○○				X	60009927	0010	3	PC	MA1	LMPC_PARALL_1
	●○○				X	60010120	0010	12	PC	MA3	LMPC_FERT_12
	○▲○				X	60010122	0010	34	PC	MA3	LMPC_HALB_34
	○▲○				X	60010122	0020	34	PC	MA3	LMPC_HALB_34

Selecting an Order Operation

Execute the action code 

(S_COPTXT).

A dialog box appears in which you can enter the operation text.



Input Window

Confirm the dialog box.

Result in the ALV Grid:

LMPC Operation Text	Created By	Created On	Op.Text Last Changed by	Operation Text Last Changed On
	D056579	08.07.2025 16:33:01	D056579	08.07.2025 16:33:01
Text 72 Characters	D056579	08.07.2025 10:37:09	D056579	08.07.2025 16:40:02
	D056579	08.07.2025 13:19:54	D056579	08.07.2025 16:33:01

Result of Input

The operation text is displayed for the corresponding field in the ALV Grid.

If you have selected more than one operation, the text is written to all selected operations. This allows you to change text for several operations at the same time.

There are 4 more fields for the LMPC HJPT order text:

- LMPC HJPT Operation Text Created By
- LMPC HJPT Operation Text Last Changed By
- LMPC HJPT Operation Text Created On
- LMPC HJPT Operation Text Last Changed On

During the conversion of planned orders to production orders or process orders, the operation texts of the planned order are automatically copied to the newly generated production order or process order.

The texts are not language-dependent. For each operation of an order, you can only maintain one text that is independent of the logon language.

The texts are saved with the key of the order number and operation number in the LMPC table /LMPC/OP_ADD. The respective latest end date of the operation is saved as a comparison field for the cleaning routine. Records older than 365 days are deleted. This prevents the database table from overflowing in the long term and removes superfluous entries.

→ Tip

Also see the function for the tasks. If you are looking for an opportunity to define even more information for the order, this function may be better suited. S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]

Related Information

S_COPTXT Configuration: LMPC Operation Text

2.6.4.11 S_CORTXT LMPC HJPT Order Text

LMPC Order Text

Use

With this action code, a text of 72 characters can be saved for each order in the LMPC HJPT detailed scheduling planning board.

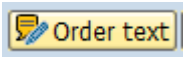
If you want to save a text for each operation of an order, use the LMPC operation text. S_COPTXT LMPC HJPT Operation Text [page 132]

Procedure

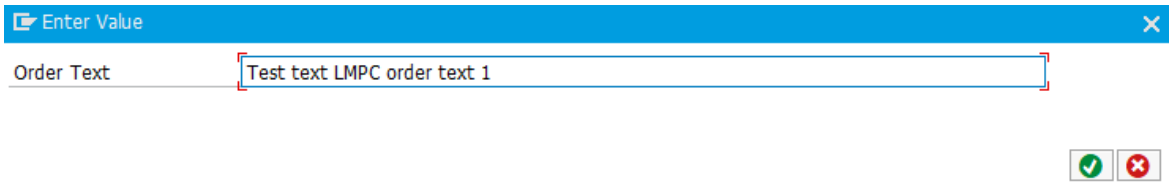
- Select an order operation in the ALV Grid.

Alert	Dispatched	F...	CTC	Order pool	Lock	Nu...	Order Number	OpAc	Cat	Material	Work ctr	Total Order Quantity	UoM	Tmtbl StD	Tmtbl ...	Earliest start	E
							60008411	0020	001	LMPC_FERT_12	MA4	2	PC		00:00:...	16.07.2020	1
		X					3221990	0020	001	LMPC_FERT_12	MA4	4	PC		00:00:...	18.07.2020	1

Select Operation

- Execute the action code 

(S_CORTXT).
- A popup window appears, in which you can enter the order text.



Dialog Box

- Confirm the dialog box.
- Result in the ALV Grid:

LMPC Order Text	Created By	Changed By	Created On	Changed On
Test text LMPC order text 1	D056579	D056579	21.07.2020 15:37:58	21.07.2020 16:58:33

Result of the Entry

The text is displayed for the associated field in the ALV Grid.

- There are 4 additional fields for the LMPC HJPT order text:
  - Created by
  - Changed by
  - Created on
  - Changed on

> → Remember
>
> - When converting planned to production or process orders, the text of the planned order is automatically adopted for the newly generated production or process order.
> - The texts are saved immediately to the database. Simulated processing does not take place

The texts are saved with the key of the order number in the LMPC table /LMPC/CORDTEXT. The basic end date of the order is saved as a comparison field for the clean-out routine. During the run of the data provider for reading the data, the system checks the age of the data records. Data records that are older than 180 days are deleted. This prevents the database table from overflowing in the long term and removes superfluous entries.

> → Tip
>
> Also see the function for the tasks. If you are looking for an opportunity to define even more information for the order, this function may be better suited. S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]

Related Information

S_CORTXT Configuration: LMPC Order Text

2.6.4.12 S_CPV2 Change Production Version and Dispatch

Change the production version of an order.

Use

You can use this function to change the production version of an order.

When changing production orders, the BOM and the routing can also be re-exploded (not possible for planned orders).

When you change the production version, the standard SAP system revokes dispatching. Therefore, if the parameter settings are set appropriately, this action code can re-dispatch the order immediately.

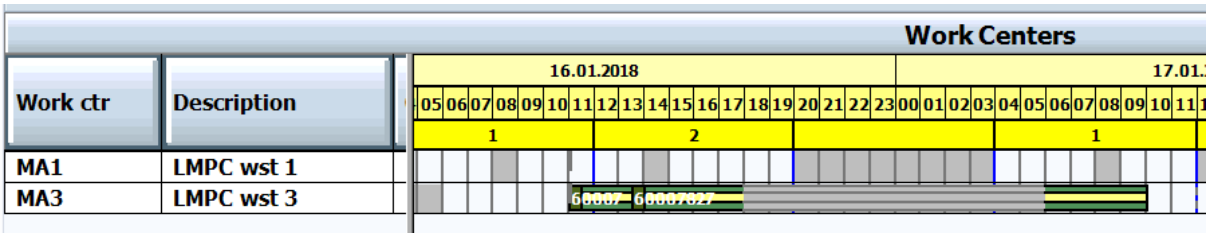
In addition, parameter settings can be used to exclude the processing of certain order types. For example, you can exclude the changing of the production version for production orders (PP01).

There is also a status check to prevent changes to orders with certain statuses.

In contrast to action code S_CPV1, which calls the standard function of the graphical planning table to change the production version of a planned order, this action code can also be executed for production orders and process orders.

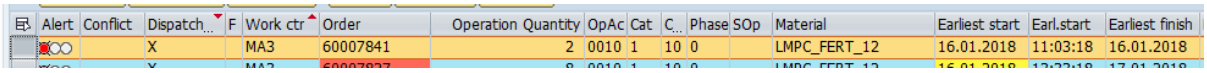
> **Note**
>
> Since the S_CPV2 function is an enhancement of the S_CPV1 function, there is no separate documentation for the S_CPV1 function. The difference being that S_CPV1 only works for planned orders and does not allow re-dispatching.

Procedure

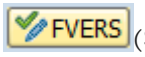


Position of the Orders for the Capacities Before the Change

Select an operation of the order that you want to change:



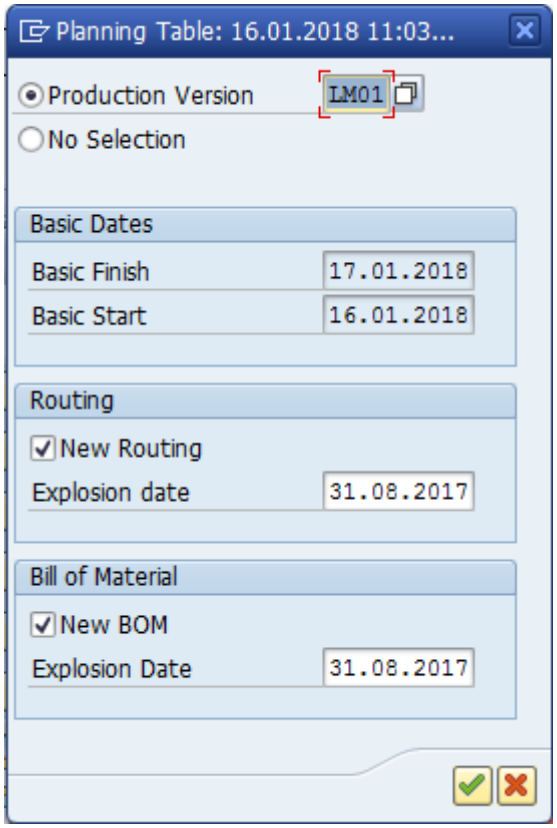
Selection of an Order Operation

Execute the action code 

(S_CPV2).

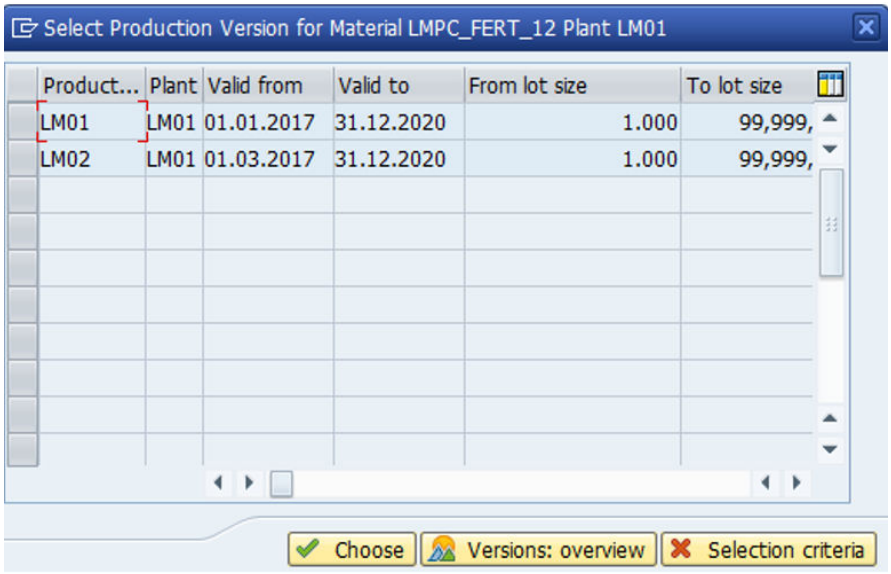
For production/process orders: If the order operation contains a status that is not allowed (setting via Customizing), the function terminates at this point. If the status check is positive, a selection window for the production version appears next.

Select a production version in the popup window.



Popup Window for Changing the Production Version

You can use the F4 help to display the possible alternatives:



Selection of Production Version

Decide whether the BOM and the routing are to be exploded.

> ⚠ Restriction
>
> This example shows the change of a production order. For planned orders, you do not have the option of exploding the BOM and routing. The date for exploding the BOM and the date for exploding the routing cannot be specified for a planned order either.

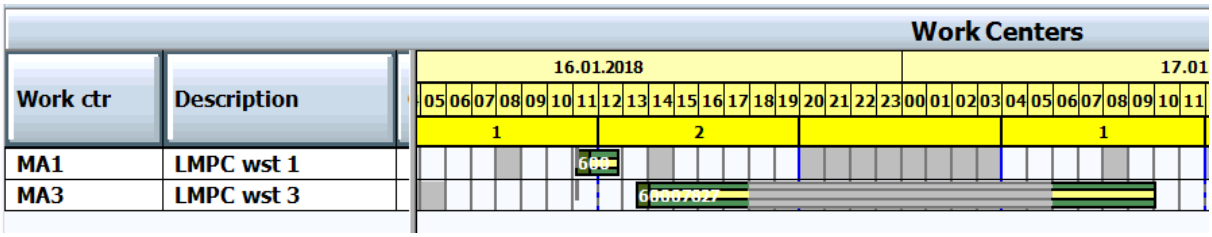
Confirm the window.

Result:

Alert	Conflict	Dispatc...	F	Work ctr	Order	Operation Quantity	OpAc	Cat	C...	Phase	SOp	Material	Earliest start	Earl.start	Earliest finish
		X		MA1	60007841	2	0010	1	10	0		LMPC_FERT_12	16.01.2018	11:09:26	16.01.2018
		X		MA3	60007827	8	0010	1	10	0		LMPC_FERT_12	16.01.2018	13:33:18	17.01.2018

In the new production version, the execution takes place in another work center. The order is now in a different work center and has been dispatched again immediately. The prerequisite is that this work center is open in the LMPC HJPT planning table.

Result



Position of the Orders After the Change

> ⚠ Restriction
>
> - It is possible to process several orders at the same time, but a selection window for changing the production version appears for each order.
> - The production version can be changed for planned, production, and process orders. Dispatched operations remain dispatched. If new operations are added when the production version is changed, these are not dispatched. Only those operations that existed before the change are dispatched again. Identification is made using the operation number of the respective order.
> - Only valid production versions can be used for the switch. It is not possible to switch to invalid production versions.

Related Information

S_CPV2 Configuration: Change Production Version and Reschedule

2.6.4.13 S_CRCLOR Create LMPC Cleaning Orders

Generate LMPC cleaning orders.

You can use this action code to create cleaning orders in the HJPT planning table.

The LMPC cleaning orders block capacity at the relevant work center. The LMPC cleaning orders are standard production orders or process orders that are used as placeholders to create time for necessary cleaning in the capacities.

The LMPC cleaning orders can be used as an alternative to maintenance orders. Maintenance orders must be created individually by the user using transaction IW31. The LMPC cleaning orders, on the other hand, can be created simultaneously in any number according to predefined rules.

The use of LMPC cleaning orders is useful if no rigid cleaning cycles are required on the machines, for example if cleaning is to be carried out when a material group is changed or after a certain number of operations.

LMPC cleaning orders can be created in three different ways:

- Creation of cleaning orders during material group transitions [page 140]
- Creation of Cleaning Orders After a Number of Operations [page 144]
- Creation of Cleaning Orders After Time Interval [page 147]

If you choose the variant with material groups, the cleaning times when transitioning between materials of one material group to materials of another material group are stored in the transition matrix. The cleaning orders are created based on these times for the transitions.

When creating the cleaning orders according to number of operations, the cleaning orders are always inserted into the production plan after a certain number of operations.

When creating the cleaning orders by time, the cleaning orders are created periodically at the respective work center at predefined time intervals.

Special feature of planning with suboperations: The cleaning orders can only be created between the operations. No cleaning orders can be created between suboperations. During processing for the creation of cleaning orders, only the operations are taken into account. The corresponding suboperations are not taken into account.

→ Tip

- It is possible to execute the action code using a nightly planning run in the background using the program /LMPC/HJPT. This is only possible for the creation of cleaning orders by operation number and time interval. Background processing is not possible during the transition of material groups. During background processing, the cleaning orders are created in the entire planning period. Program /LMPC/HJPT Background Processing [page 26]
- If an individual cleaning order is to be created manually at a specific time, the rule set of the action code S_CRCLOR is too time-consuming. To create an individual order with cleaning material, you can also use the function for creating simulative orders. S_CRORD Create Simulative Order [page 156]

For information on settings for the LMPC cleaning orders, see the LMPC Configuration Guide. S_CRCLOR Configuration: LMPC Cleaning Orders

The action codes S_6_CLMA, S_6_CLOR, S_8_COMT, S_8_CONR, and S_8_COTM are variants of the action code S_CRCLOR that are configured for use in the HJPT test profiles LMPC_T06 [page 36] and LMPC_T08 [page 44].

ⓘ Note

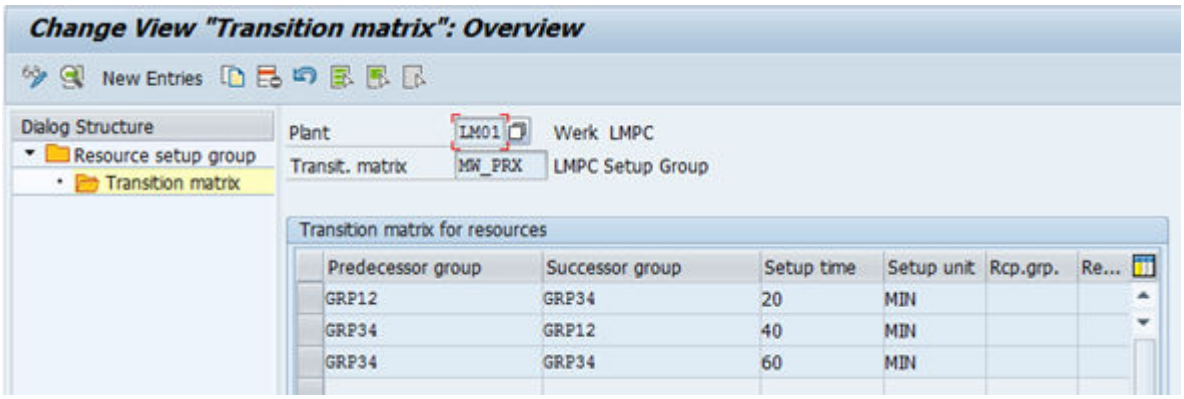
The topic of cleaning orders is very complex. Extensive Customizing settings and correct master data are required to achieve the desired result. We recommend that you request the support of LMPC consulting for the setup.

2.6.4.13.1 Creation of cleaning orders during material group transitions

LMPC cleaning orders by material group transitions.

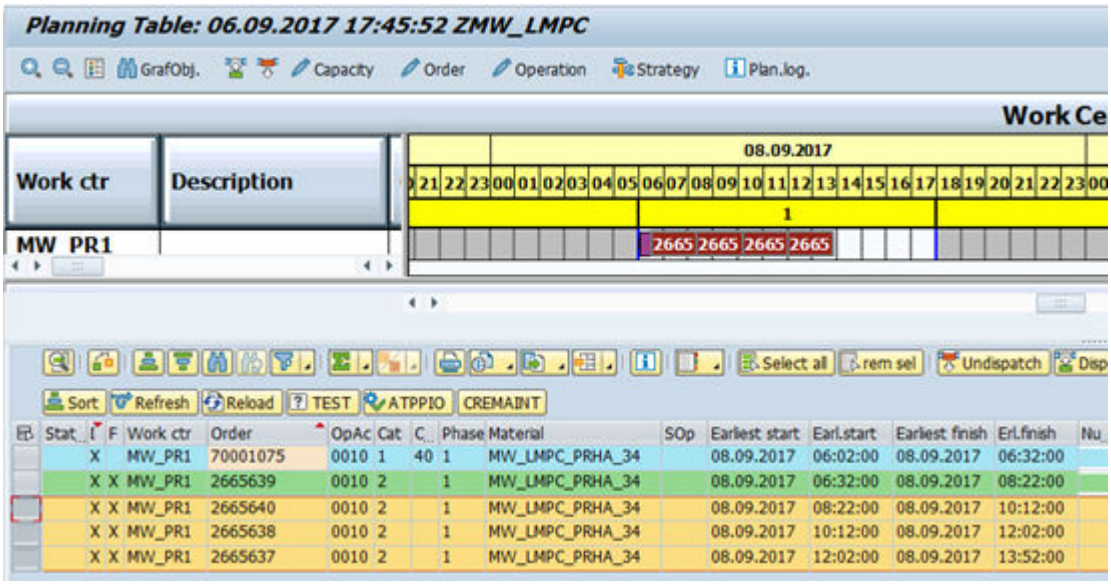
In the transition matrix, the cleaning times for the transitions from one material group to the next are maintained for each work center.

View of the transition matrix:



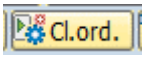
Example Transition Matrix

Select at least two consecutive dispatched orders in the LMPC planning table. The logic checks the transitions of the material groups from the operations of the selection. Cleaning orders are only created between selected operations.



Selection of Operations

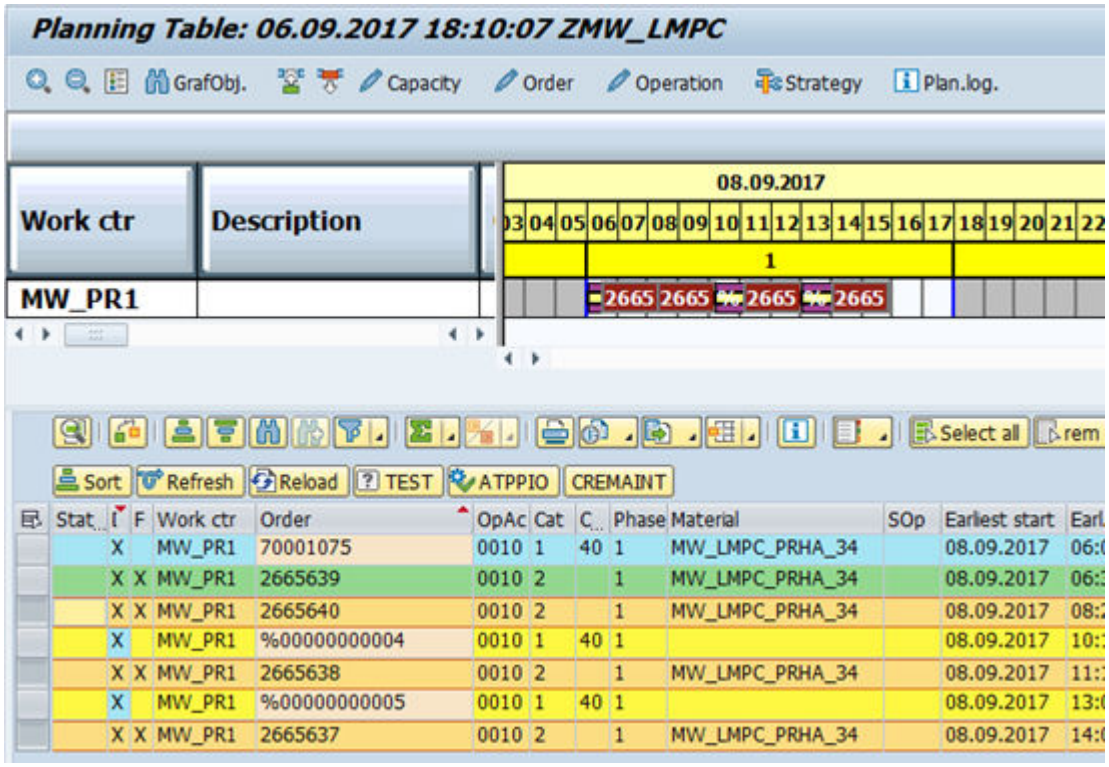
> ⚠ Restriction
>
> The action code generates cleaning orders only between dispatched orders within the same plant and the same work center.

Execute the action code 

(S_CRCLOR).

The cleaning orders are created and dispatched according to the settings in Customizing.

Result:

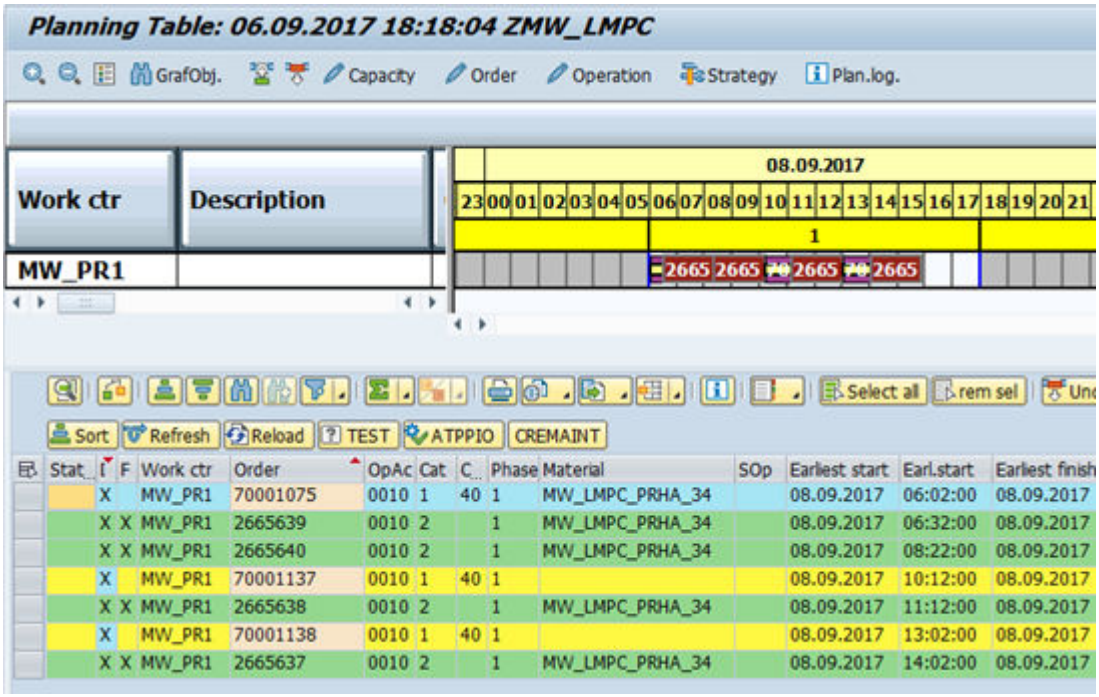


Two Temporary Cleaning Orders Have Been Created.

The created cleaning orders are inserted between the existing orders. They are temporary until the planning is saved by the user. The temporary order numbers indicate this. You can delete them by reloading the planning data. After you save the data, the orders are assigned specific numbers.

Save the planning.

Result after saving the planning:



Stat.	I	F	Work ctr	Order	OpAc	Cat	C..	Phase	Material	SOp	Earliest start	Earl.start	Earliest finish
	X		MW_PR1	70001075	0010	1	40	1	MW_LMPC_PRHA_34		08.09.2017	06:02:00	08.09.2017
	X	X	MW_PR1	2665639	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	06:32:00	08.09.2017
	X	X	MW_PR1	2665640	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	08:22:00	08.09.2017
	X		MW_PR1	70001137	0010	1	40	1			08.09.2017	10:12:00	08.09.2017
	X	X	MW_PR1	2665638	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	11:12:00	08.09.2017
	X		MW_PR1	70001138	0010	1	40	1			08.09.2017	13:02:00	08.09.2017
	X	X	MW_PR1	2665637	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	14:02:00	08.09.2017

Cleaning Orders After Saving

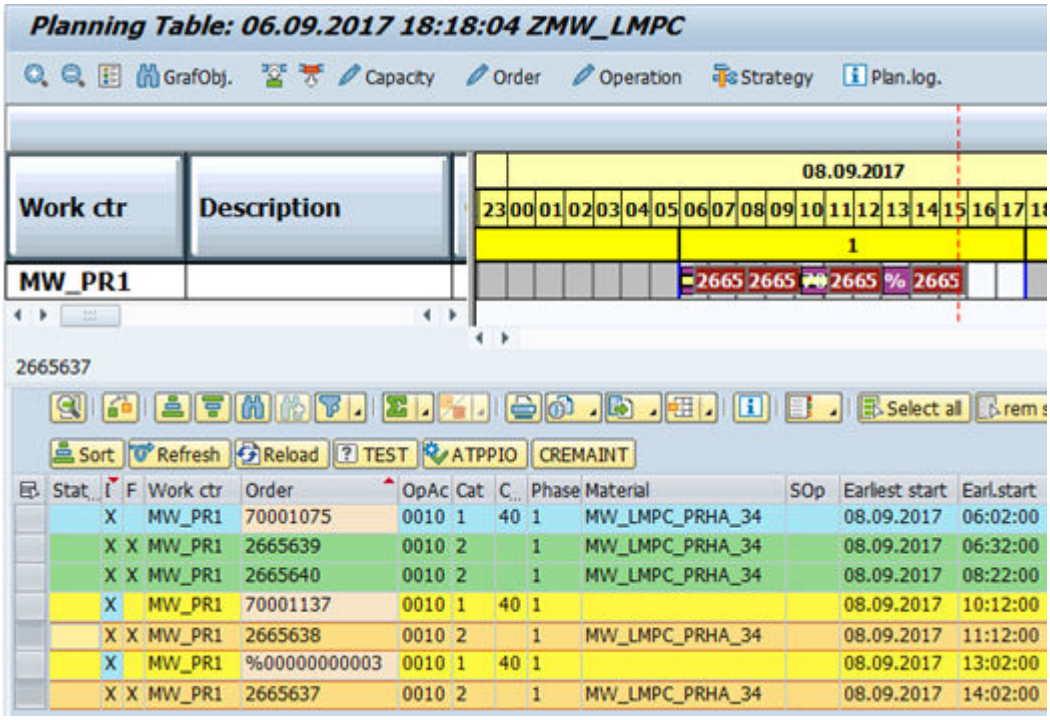
The cleaning orders have been assigned concrete order numbers.

It is possible to replace existing cleaning orders with new cleaning orders. To do this, the the parameter `REMOVE` must be activated in Customizing for the action code.

Select the existing cleaning orders together with the dispatched orders.

Execute the action code again.

Result:



Stat	I	F	Work ctr	Order	OpAc	Cat	C	Phase	Material	SOp	Earliest start	Earl.start
	X		MW_PR1	70001075	0010	1	40	1	MW_LMPC_PRHA_34		08.09.2017	06:02:00
	X	X	MW_PR1	2665639	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	06:32:00
	X	X	MW_PR1	2665640	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	08:22:00
	X		MW_PR1	70001137	0010	1	40	1			08.09.2017	10:12:00
	X	X	MW_PR1	2665638	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	11:12:00
	X		MW_PR1	%00000000003	0010	1	40	1			08.09.2017	13:02:00
	X	X	MW_PR1	2665637	0010	2		1	MW_LMPC_PRHA_34		08.09.2017	14:02:00

New Temporary Cleaning Orders

The existing cleaning orders have been completed technically and new temporary cleaning orders have been created.

Logic for Two-Level Planning

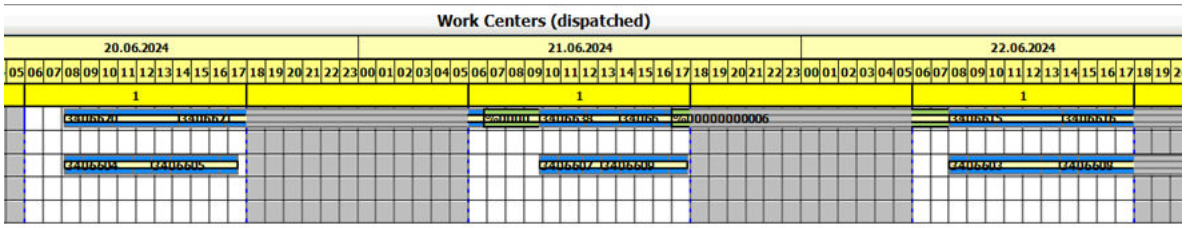
There is a logic for creating cleaning orders between order pools in two-level planning.

> → Remember
>
> This is a standalone logic for material group transitions and can only be used for material group transitions.

The order pools must already be dispatched before the cleaning orders are created. It is not possible to use this logic to reschedule order pools that have not been dispatched.

The cleaning orders are dispatched between the last operation of the first level of the previous order pool and the first operation of the first level of the subsequent order pool. No cleaning orders are created between the operations of the second level.

The order pools are moved by the duration of the cleaning orders if insufficient free capacity is available between the operations.



Cleaning Orders Between Order Pools

Rescheduling order pools takes place using the logic of the action code S_EPBKFG. The date on which the first operation of an order pool is already dispatched is used as the target time for rescheduling.

An action code for two-level planning (S_EPBKFG) must be defined in Customizing for the action code S_CRCLOR. The settings for planning are transferred from this action code.

The cleaning orders are created between the order pools whose operations are contained in the selection. Order pools that are not contained in the selection do not receive any cleaning orders.

In addition, all order pools after the first selected order pool are rescheduled. This ensures that the relationships between the first and second levels of an order pool are correct after the cleaning orders have been inserted.

Related Information

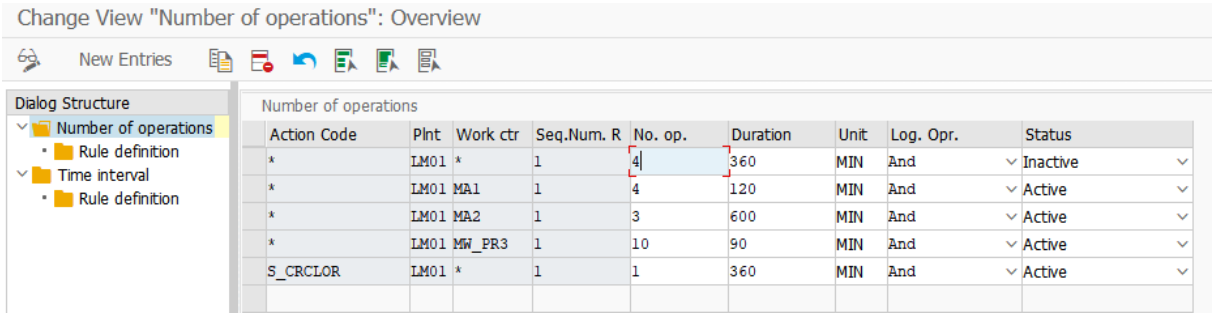
S_CRCLOR Configuration: LMPC Cleaning Orders
S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

2.6.4.13.2 Creation of Cleaning Orders After a Number of Operations

Cleaning orders after a number of operations.

> → Remember
>
> When creating cleaning orders after a number of operations, only dispatched operations at the work centers are taken into account. The logic only creates cleaning orders between already dispatched operations.

Settings for counting operations have already been made in Customizing for LMPC cleaning orders.
Maintenance of Number of Operations



Example of Customizing Settings for Number of Operations

The HJPT planning table has been opened. There are already dispatched operations at the work centers.

There are two options for using the settings to define how the period in which cleaning orders are to be created is to be determined:

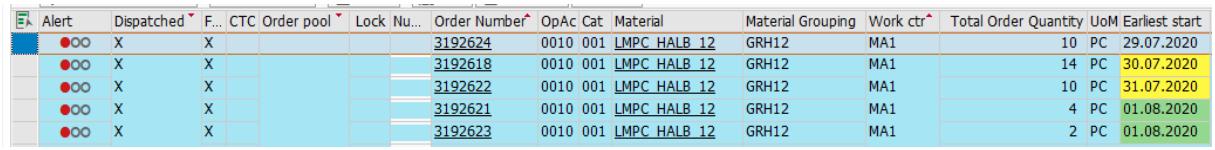
- By selecting operations in the ALV Grid
- Using a manual entry in a dialog box

If the function is configured in such a way that no dialog box appears for querying the period, the period is determined using the selected operations. In this case, the period starts with the earliest start time of the first selected operation and ends with the latest end time of the last selected operation.

For the description of the specification of the period using the selection of operations, see the section on logic 3 of the creation of cleaning orders by time intervals. Logic 3: Creation After Duration of Operations with Rule Check [page 153]

In this example, it is configured that the function queries the period for the creation of cleaning orders using a dialog box. In this case, only one operation needs to be selected.

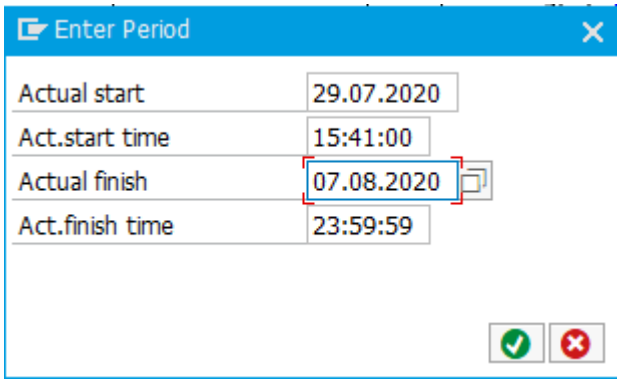
Select the operation from which the logic should start counting the operations.



Select Operation

Execute the action code Cl.ord. (S_CRCLOR).

The system displays a dialog box for querying the period in which the operations and cleaning orders are to be created.



Dialog Box for Period Selection

The fields in the dialog box are prefilled. The start date and start time of the selected operation are entered as the start date and start time. The end date is the end of the current planning period. The end time is 23:59:59.

> → Remember
>
> The selected operations are only used as information providers for the work centers and the start time of processing. The period over which processing is to take place is defined in the dialog box and not by the selected operations.

The period can be changed by the user. You can select a date in the past. The counting of operations can start from this date. However, no cleaning orders can be created in the past.

If the result of the function is that a cleaning order is to be created in the past, it does not create it.

When you confirm the window, the rules are read from Customizing. This is used to calculate the times at which a cleaning order is to be created.

By selecting several operations from different work centers, you can also simultaneously create cleaning orders for different work centers. The dialog box appears only once. The data in the dialog box is prefilled with the data of the first selected operation. The evaluation period entered is valid for all work centers in the selection.

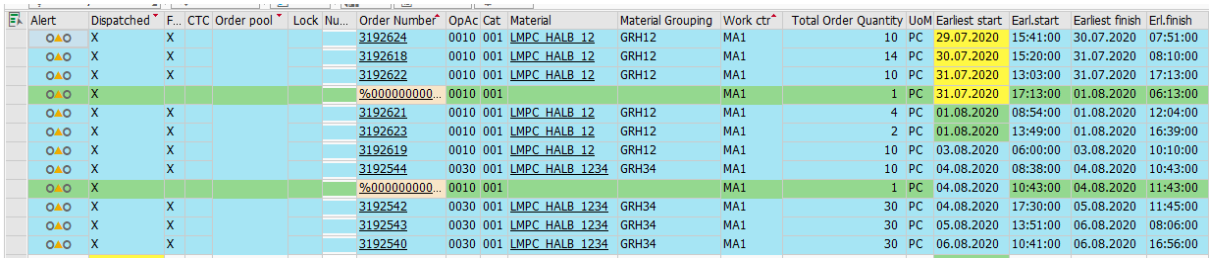
The logic works through the work centers from the selection one after the other.

The logic reads all dispatched operations in the selection period and applies the check routines defined in the settings. A check routine can have several rules.

You can use the rules to define which operations are to be taken into account during counting. The rules for a check routine can be linked with AND or OR. AND linked means that all rules for a check routine must apply for an operation to be counted. OR linked means that one of the rules must apply for an operation to be counted. If no counting rules are defined in the check routines, each operation is counted. In this case, rules are not checked. For details on creating the rules, see the LMPC Configuration Guide. Maintenance of Number of Operations

Whenever the logic has determined the last operation of a counting group, it reads the end time of that operation. This end time is used as the start date/time for dispatching the cleaning order. The cleaning order is created and dispatched on this date. It moves between the operations that have already been dispatched. The prerequisite for this is that the settings for the strategy profile have been made accordingly ("Insert operation").

Result:



Alert	Dispatched	F...	CTC	Order pool	Lock	Nu...	Order Number	OpAc	Cat	Material	Material Grouping	Work ctr	Total Order Quantity	UoM	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X					3192624	0010	001	LMPC_HALB_12	GRH12	MA1	10	PC	29.07.2020	15:41:00	30.07.2020	07:51:00
	X	X					3192618	0010	001	LMPC_HALB_12	GRH12	MA1	14	PC	30.07.2020	15:20:00	31.07.2020	08:10:00
	X	X					3192622	0010	001	LMPC_HALB_12	GRH12	MA1	10	PC	31.07.2020	13:03:00	31.07.2020	17:13:00
	X						%000000000...	0010	001			MA1	1	PC	31.07.2020	17:13:00	01.08.2020	06:13:00
	X	X					3192621	0010	001	LMPC_HALB_12	GRH12	MA1	4	PC	01.08.2020	08:54:00	01.08.2020	12:04:00
	X	X					3192623	0010	001	LMPC_HALB_12	GRH12	MA1	2	PC	01.08.2020	13:49:00	01.08.2020	16:39:00
	X	X					3192619	0010	001	LMPC_HALB_12	GRH12	MA1	10	PC	03.08.2020	06:00:00	03.08.2020	10:10:00
	X	X					3192544	0030	001	LMPC_HALB_1234	GRH34	MA1	10	PC	04.08.2020	08:38:00	04.08.2020	10:43:00
	X						%000000000...	0010	001			MA1	1	PC	04.08.2020	10:43:00	04.08.2020	11:43:00
	X	X					3192542	0030	001	LMPC_HALB_1234	GRH34	MA1	30	PC	04.08.2020	17:30:00	05.08.2020	11:45:00
	X	X					3192543	0030	001	LMPC_HALB_1234	GRH34	MA1	30	PC	05.08.2020	13:51:00	06.08.2020	08:06:00
	X	X					3192540	0030	001	LMPC_HALB_1234	GRH34	MA1	30	PC	06.08.2020	10:41:00	06.08.2020	16:56:00

Result: Insertion of Cleaning Orders

The cleaning orders have been created in the simulation. The temporary order numbers indicate this. The cleaning orders only become persistent in the database when you save.

Depending on the settings, the function can behave differently.

For example, existing cleaning orders can be deleted when the function is executed and replaced by new cleaning orders.

The function can also be set up in such a way that it closes gaps in the production plan when the cleaning orders are inserted, to enable continuous planning.

You can use another setting option to check whether another cleaning order already exists at the point at which a cleaning order is to be created, and skip the creation of this order.

The counting function can also be influenced. It is possible to choose whether operations that do not comply with the rules are simply ignored or whether such operations cause the counter to be reset and counting to be restarted at this point (strict function execution).

> ⓘ Note
>
> If you have questions about the settings, please contact your LMPC consultant. The LMPC Configuration Guide can also be of help. S_CRCLOR Action Code Customizing

> → Tip
>
> It is possible to execute the action code using a nightly planning run in the background using the program / LMPC/HJPT. During background processing, the cleaning orders are created in the entire planning period. Program /LMPC/HJPT Background Processing [page 26]

2.6.4.13.3 Creation of Cleaning Orders After Time Interval

With this type of creation, the cleaning orders are created at regular intervals at the work centers.

There are three different logics for creating cleaning orders after time intervals:

- Logic 1: Creation by Time Interval Without Rule Check [page 148]
- Logic 2: Creation After Time Interval with Rule Check [page 150]
- Logic 3: Creation After Duration of Operations with Rule Check [page 153]

The logic is selected using the parameter **LOGIC** in the settings for the action code.S_CRCLOR Action Code Customizing

> → Tip
>
> It is possible to execute the action code using a nightly planning run in the background using the program / LMPC/HJPT. During background processing, the cleaning orders are created in the entire planning period. Program /LMPC/HJPT Background Processing [page 26]

2.6.4.13.3.1 Logic 1: Creation by Time Interval Without Rule Check

Regular cleaning after certain time intervals.

The cleaning orders are created according to the time interval without a rule check regardless of whether operations have already been dispatched at the relevant work center. Dispatched or non-dispatched operations are not taken into account by the logic.

The cleaning orders are created and dispatched strictly after a certain time interval, without checking the position of other orders. They are created in the simulation. The orders are not written to the database until the planning is saved.

In Customizing for cleaning orders in transaction /LMPC/CLOR_CUST, the time interval and the duration of the cleaning order have already been maintained for the work center used.

With this logic, the time interval is maintained in number of days.

For the creation of the orders, you can specify a start time for the operations. If no start time is specified, 00:00 is specified as the start time for the operations. The operations are therefore dispatched to the earliest available capacity on the day.

If a start time is specified, the specified start time for dispatching is specified. If there is sufficient free capacity for dispatching at the desired time, the cleaning orders are dispatched at this time. If no capacity is available, the orders are dispatched on the next possible date.



Customizing Time Interval Cleaning Orders

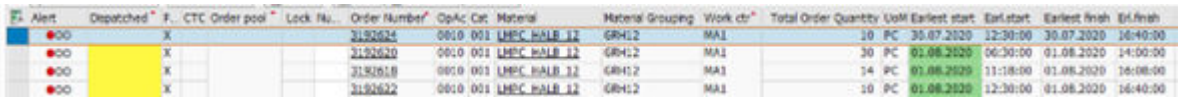
There are two options for using the settings to define how the period in which cleaning orders are to be created is to be determined:

- By selecting operations in the ALV Grid
- Using a manual entry in a dialog box

If the function is configured in such a way that no dialog box appears for querying the period, the period is determined using the selected operations. In this case, the period starts with the earliest start time of the first selected operation and ends with the latest end time of the last selected operation.

In this example, it is configured that the function queries the period for the creation of cleaning orders using a dialog box. In this case, only one operation needs to be selected.

Select an operation in the ALV Grid of the HJPT planning table.

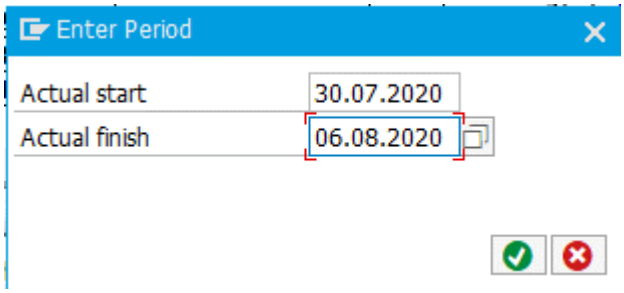


Operation Selection

This operation informs the logic of the work center at which the cleaning orders are to be generated and the day on which creation is to be started.

Execute the action code Cl.ord. (S_CRCLOR).

The system displays a dialog box for entering the period in which the cleaning orders are to be created.



Period for Creation of Cleaning Orders

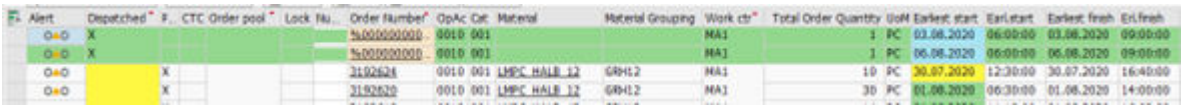
The fields in the dialog box are prefilled. The start date of the selected operation is entered as the start date. The end date is the end of the current planning period.

The period can be changed by the user. The planner can select a date in the past. The calculation of the time intervals can start from this date. However, no cleaning orders can be created in the past.

If the result of the function is that a cleaning order is to be created in the past, it does not create it.

When you confirm the window, the rules for the time intervals are read from Customizing. This is used to calculate the days on which a cleaning order is to be created.

The cleaning orders are created and dispatched for the desired duration, on the calculated day, at the specified time.



Newly Created Cleaning Orders

> ⚠ Caution
>
> The system does not check on which days capacity is available at the work center. When calculating the days, only the days that are entered as working days in the factory calendar are taken into account. The factory calendar used is the factory calendar that is entered in the capacity of the work center.
>
> Therefore, non-working days according to the factory calendar are not taken into account when calculating the intervals. For example, if an interval starts on Friday, lasts for two days, and Sunday is a non-working day, the next cleaning order is created on Monday.

It is important to make sure that days that do not have a capacity offer are also marked as non-working, otherwise the function creates cleaning orders on these days that move to the next day with free capacity due to lack of capacity offer.

You can use the settings for the action code to activate an additional check using the parameter CHK_CLOR. If the check is active, before a cleaning order is created, the system checks whether a cleaning order already exists on that day. If a cleaning order already exists, no new cleaning order is created.

The cleaning orders are created in the simulation. This can be seen from the temporary order numbers. Only when you save the planning do the cleaning orders become persistent in the database.

The cleaning orders are generated after a specific time interval for the respective work center and transferred to the standard dispatching function of the capacity planning table with the time specification from Customizing, or if nothing is maintained then with 00:00:00.

The actual position of the orders depends on the available capacity, the settings of the strategy profile used, and the operations already dispatched on this day.

As a rule, the "Insert Operation" checkmark should be set in the strategy profile for the cleaning orders. If other operations have already been dispatched on the relevant day, use this setting to include the cleaning orders in the production plan at the desired time. If the start time 00:00:00 was specified, they are each the first operation to start on that day.

The actual duration of the cleaning order results from the interaction between the Customizing settings for the duration, the selected scheduling type, and the scheduling formulas at the work center. For details on this, see the LMPC Configuration Guide. Maintenance of Time Interval

By selecting several operations from different work centers, you can simultaneously create cleaning orders for different work centers. The evaluation period entered is valid for all work centers.

Related Information

S_CRCLOR Action Code Customizing

2.6.4.13.3.2 Logic 2: Creation After Time Interval with Rule Check

Logic 2 of creating cleaning orders after time interval creates orders after a certain number of days if all dispatched orders in the time interval at this work center adhere to the specified rules.

In the settings for the cleaning orders, check routines are defined with a duration in days after which a cleaning order is to be created.

In addition to this time interval, you can also maintain rules that check the data of the operations. These can be linked using either AND or OR.

With the AND operation, an operation is valid if all maintained rules apply to it. With the OR operation, an operation is valid if one of the maintained rules applies.

For details on maintaining the configuration, see the LMPC Configuration Guide. Maintenance of Time Interval

There are two options for selecting the operations to be checked:

- A dialog box is used to enter a check period.
- The operations are selected in the ALV Grid.

This can be defined in the settings for the function.

The call variant with dialog box has been described in logic 1, where it can be read. Logic 1: Creation by Time Interval Without Rule Check [page 148]

At this point, the call via the selection of the operations is described.

> → Remember
>
> The check can only be performed using dispatched operations. Operations that have not been dispatched are ignored.

Select the dispatched operations that are to be checked in the ALV Grid.

Alert	Lock	Di...	Fmd	Ord. Nr.	OpAc	SOp	Material	Work...	Description	Cat	Plant	Op. Q...	UoM	Latest start
		X	X	3296724	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	5	PC	06.08.2021
		X	X	3296727	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	18	PC	06.08.2021
		X	X	3296726	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	7	PC	06.08.2021
		X	X	3296729	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	40	PC	06.08.2021

Selection of Operations

Execute the action code Cl.ord. (S_CRCLOR).

The logic reads the check routines and related rules from the settings.

The selected operations are processed for each work center.

For each work center, the determined check routines are processed in sequence. First, the first check routine is processed for all selected transactions, then the second routine, and so on.

The following description explains the process flow of the check of a check routine with several rules.

The number of days that comprise a check period is defined in the check routine.

If operations that are already in the past have been selected, the check starts in the past. However, no cleaning orders can be created in the past. If the result of the logic is that a cleaning order is to be created in the past, this cleaning order will be omitted.

If the parameter for planning without gaps is activated (`CLOSEGAP`), first all selected operations are rescheduled without gaps. The start time of the first selected operation serves as the start time. If this is in the past, the current time is used as the start time.

The check routine reads the first selected operation at this work center. The start date of this operation defines the first day of the check period. The check period comprises the defined number of days maintained, whereby the start day is counted. For example, if the check period is over two days, all operations that start on the day of the start operation and on the next day are checked.

> ⚠ Caution
>
> The check period only includes working days of the factory calendar in the calculation. The factory calendar stored in the work center is used. This means that non-working days, such as a Sunday, are not included

in the check period. The system does not check whether capacity is available at the work center. The calculation is performed only on the basis of the days that are defined as working days in the factory calendar.

When the action code is executed without the popup window, only those operations that were selected are considered on the start day. For example, if an operation is before the first selected operation, this operation is not checked, even if it is on the same start day.

The rule check processes the activities in the check period one after the other. It starts at the first operation. If the rules have an **AND operation**, all rules must apply to this operation for the check to be positive. If the rules have an **OR operation**, then only one rule must apply to this operation for the check to be positive.

If the check fails for the first operation, no cleaning order is created and the logic continues to the next operation. It starts the check again from this operation. In this case, the check period shifts and starts with the next operation. The first operation that fulfills the rule check determines the start day for the check routine.

The start time of the operations is determined using the fields of the capacity requirement. It is either the earliest start time or the latest start time, depending on the scheduling settings (FSTAD_KB, FSTAU_KB, or SSTAD_KB, SSTAU_KB).

All other dispatched operations that start in the check period are checked.

If the rule check is positive for all operations in the check period, a cleaning order is created.

If, during the sequential check, an operation starts in the check period that does not fulfill the rules, the system checks whether the logic has already reached the last day of the check period and whether the previous operation ends on the last day of the check period. In this case, a cleaning order is created after the previous operation. The sequence of the operations that belong together is ended and the condition that all operations in the check period fulfill the rules is met.

If an operation occurs in the sequence of operations that does not fulfill the rules and the last day of the check period has not yet been reached, no cleaning order is created. In this case, the check terminates and the system starts the check again with the next operation in the sequence.

A cleaning order is only created if there is an operation that fulfills the rules on the last day of the check period. If there is no operation on the last day of the check period, no cleaning order is created because the logic assumes that the check period is not completely occupied. A cleaning order is only created for completely occupied periods.

The start time of the cleaning order depends on the following conditions:

- If the last operation considered ends on the last day of the check period, the cleaning order is created after this operation. This means that the end time of the operation is adopted as the start time for the cleaning order.
- If the operation does not end on the last day of the check period because it starts in the check period but lasts longer than one day and ends after the check period, the creation is dependent on the parameter `POSITION`.
    - If the parameter `POSITION` has the value BEFORE, the cleaning order is created at the start time of the last operation. As a result, the cleaning order moves before the last operation in the check period. The check for the next sequence starts with the next operation after the cleaning order. The last operation of the previous period is now the start operation of the next period.
    - If the parameter `POSITION` has the value AFTER, the end time of the operation is used as the start time for the cleaning order. This means that the cleaning order is placed after the last operation

considered. The check then continues to the next operation and starts a new check period with this. The start date of this operation is changed to the start date of the next check period.

You can use the settings for the action code to activate an additional check using the parameter CHK_CLOR. If the check is active, before a cleaning order is created, the system checks whether a cleaning order already exists at the relevant point. If a cleaning order already exists, no new cleaning order is created.

If the end of the calculated check period is greater than the end day of the selection period, the rule evaluation is ended and a cleaning order is no longer created.

Result:

Alert	Lock	Di...	Fmd	Ord. Nr.	OpAc	SOp	Material	Work...	Description	Cat	Plant	Op. Q...	UoM	Latest start	Time	Latest finish	Lat.finish
	X		X	3296724	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	5	PC	06.08.2021	06:00:00	06.08.2021	07:27:30
	X		X	3296727	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	18	PC	06.08.2021	07:27:30	06.08.2021	11:05:00
	X			%000000...	0010			MA1	LMPC wst 1	001	LM01	1	PC	06.08.2021	11:05:00	06.08.2021	14:05:00
	X		X	3296726	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	7	PC	06.08.2021	14:05:00	06.08.2021	15:52:30
	X		X	3296729	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	40	PC	06.08.2021	15:52:30	07.08.2021	11:10:00
	X			%000000...	0010			MA1	LMPC wst 1	001	LM01	1	PC	07.08.2021	11:10:00	07.08.2021	14:10:00

Result of Creation of Cleaning Orders

Cleaning orders have been created between the operations that have already been dispatched.

The cleaning orders are created in the simulation and can be discarded by reloading the data. The system does not write the orders to the database until you choose Save.

Related Information

S_CRCLOR Action Code Customizing

2.6.4.13.3.3 Logic 3: Creation After Duration of Operations with Rule Check

Logic 3 for the Creation of Cleaning Orders by Time Interval.

Logic 3 of the creation of cleaning orders by time interval contains a check for the duration of orders.

In the settings for the cleaning orders, a duration in days, hours, and minutes is defined in the check routine, after which a cleaning order is to be created.

This time is not the capacity requirements of the operations, but the linear duration of the operations.

In addition to this duration, you can also maintain rules that check the data of the operations. For details on maintaining the configuration, see the LMPC Configuration Guide. Maintenance of Time Interval

There are two options for selecting the operations to be checked:

- A dialog box is used to enter a check period.
- The operations are selected in the ALV Grid.

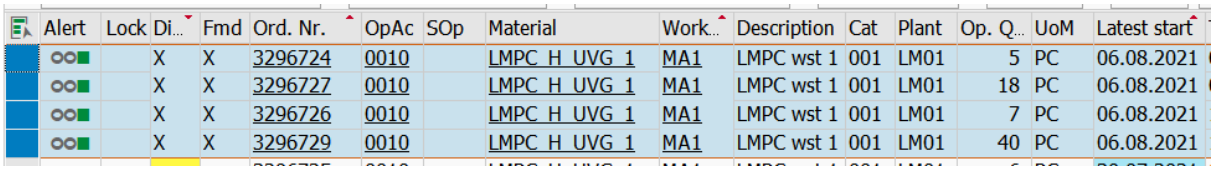
This can be defined in the settings for the function.

The call variant with dialog box has been described in logic 1, where it can be read. Logic 1: Creation by Time Interval Without Rule Check [page 148]

At this point, the call via the selection of the operations is described.

Select the dispatched operations that are to be checked in the ALV Grid.

> **→ Remember**
>
> The check can only be performed using dispatched operations. Operations that have not been dispatched are ignored.



Alert	Lock	Di...	Fmd	Ord. Nr.	OpAc	SOp	Material	Work...	Description	Cat	Plant	Op. Q...	UoM	Latest start
		X	X	3296724	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	5	PC	06.08.2021
		X	X	3296727	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	18	PC	06.08.2021
		X	X	3296726	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	7	PC	06.08.2021
		X	X	3296729	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	40	PC	06.08.2021

Selection of Operations

Execute the action code 

(S_CRCLOR).

If the parameter for planning without gaps is activated (`CLOSEGAP`), first all selected operations are rescheduled without gaps. The start time of the first selected operation serves as the start time. If this is in the past, the current time is used as the start time. If the parameter is not activated, this step is not executed.

In the next step, the logic reads the check routines and related rules from the settings.

The selected operations are processed for each work center.

For each work center, the check routines found are processed in sequence.

The following description explains the process flow of a check for a check routine with several rules.

First, a check period is calculated from the Number of Days, Number of Hours, and Number of Minutes fields, after which a cleaning order is created.

The first selected operation at this work center is checked.

If the setting is such that all rules are linked with AND, the check is only positive if all rules apply to this operation. If the setting is such that all rules are linked with OR, the check is positive if at least one rule applies to the operation. If the check is negative, the logic continues to the next operation.

If the check is positive, the duration of the operation is calculated. The duration is calculated according to the linear time. Depending on the planning setting, the system evaluates either the fields for the earliest start time or the latest start time of the capacity requirements of the operations to calculate the duration. These are the fields FSTAD_KB, FSTAU_KB, FENDD_KB FENDU_KB, or SSTAD_KB, SSTAU_KB. SSEND_KB, SENDU_KB.

> **⚠ Caution**
>
> When calculating the duration, the available capacity at the work center is not taken into account. Only the linear time is calculated from the start time of the operation to the end time of the operation. For example, if an operation starts on a Friday and ends on a Monday and no work is done at the weekend, Saturday and Sunday are still calculated in full for the duration of the operation.

After the calculation of the operation duration, a comparison is made. If the duration is less than the duration of the check period, the next operation is checked.

If the next operation also fulfills one of the rules of the check routine, its duration is calculated and added to the previous total duration of the operations.

A check is carried out again. If the total duration is still smaller than the check period, the next operation is checked, and so on.

However, if the total duration of the two operations is longer than the check period, a cleaning order is created after the second operation.

Afterwards, the counter is reset for the duration and the next selected operation is checked.

If an operation for which the check is negative occurs in this series of operations, the behavior of the function depends on the settings of the action code.

If the parameter STRICT is not set in the settings, the operation is ignored and the next selected operation is checked. In this case, the counter of the duration is not reset.

If the parameter STRICT is set, a strict check takes place, as the parameter implies. If the check is negative for an operation, the check is stopped at this point, no cleaning order is created, and the counter is reset for the duration. The system then proceeds with the search for the next operation for which the check is positive. The check then starts again with this operation.

This check continues until the last selected operation has been processed. If, at the end, the sum of the operation durations is longer than the calculated check period, a cleaning order is created after the last selected operation.

It is possible to check whether a cleaning order is to be created. This can be controlled using parameter CHK_CLOR. If this parameter is active, the system checks whether a cleaning order already exists for this item before each cleaning order is created. If a cleaning order already exists, no new cleaning order is created at this point. Cleaning orders are identified using the parameter ORD_TECH.

All orders that are identified by the function as cleaning orders are not included in the calculation of the duration.

Result:

Alert	Lock	Di...	Fmd	Ord. Nr.	OpAc	SOp	Material	Work...	Description	Cat	Plant	Op. Q...	UoM	Latest start	Time	Latest finish	Lat.finish
	X		X	3296724	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	5	PC	06.08.2021	06:00:00	06.08.2021	07:27:30
	X		X	3296727	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	18	PC	06.08.2021	07:27:30	06.08.2021	11:05:00
	X			%000000...	0010			MA1	LMPC wst 1	001	LM01	1	PC	06.08.2021	11:05:00	06.08.2021	14:05:00
	X		X	3296726	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	7	PC	06.08.2021	14:05:00	06.08.2021	15:52:30
	X		X	3296729	0010		LMPC_H_UVG_1	MA1	LMPC wst 1	001	LM01	40	PC	06.08.2021	15:52:30	07.08.2021	11:10:00
	X			%000000...	0010			MA1	LMPC wst 1	001	LM01	1	PC	07.08.2021	11:10:00	07.08.2021	14:10:00

Result of Creation of Cleaning Orders

Cleaning orders have been created between the operations that have already been dispatched.

The cleaning orders are created in the simulation and can be discarded by reloading the data. The system does not write the orders to the database until you choose Save.

> ### → Remember
>
> Each time operations are rescheduled, the durations of the operations can change. By inserting a cleaning order, an operation shifts in such a way that it goes over a period without capacity offer and therefore becomes longer, for example. Therefore, the function continuously checks the duration of the operations during processing. The durations of the operations are calculated using the position of the operations that results from the insertion of the cleaning orders, not with the position of the operations before the insertion

of the cleaning orders. This ensures that the cleaning orders are dispatched after the desired duration of the operations after the function has been executed.

Related Information

S_CRCLOR Action Code Customizing

2.6.4.14 S_CRORD Create Simulative Order

Use

You can use the action code S_CRORD to create a simulative production order or process order.

You can use this order to continue processing in the HJPT planning table after creation.

The order does not exist in the database and only becomes persistent upon saving. As long as it is not saved, the order can be discarded by reloading the data.

You can use this function to create exactly one order for each call.

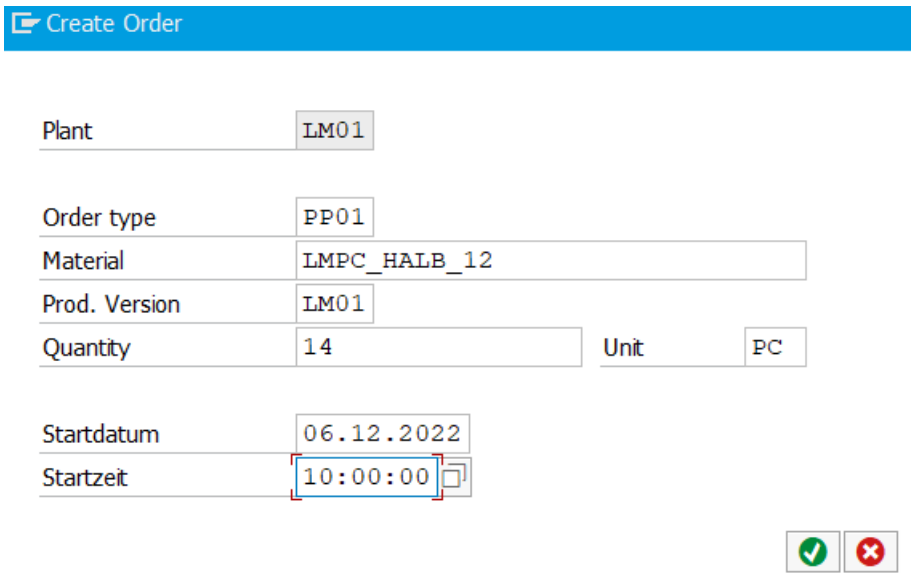
The simulative order cannot be processed with all HJPT functions. See restrictions below.

Procedure

You do not need to make a selection to create an order.

Execute the action code Cr.Order (S_CRORD).

The dialog box for order creation appears.



Input Screen

The fields for material, quantity, unit of measure, start date, and start time are mandatory and must be filled.

Production version and order type are optional. If you do not specify the order type, it is determined automatically.

If you have selected a data record, the data from the selected operation is transferred to the input screen for creating the order. You can duplicate an existing order in this way.

If you do not select anything, the first data record of the ALV Grid is automatically selected and used to prefill the data.

You can deactivate this automatic preassignment through a Customizing setting. S_CRORD and S_CHORD Configuration: Create Simulated Order and Change Order

You can still specify the values for certain input fields using parameters in Customizing. If you maintain parameters, they override the automatic preassignment from the selection.

The field for the plant is for information purposes only and is prefilled. It cannot be changed

Whether the other fields on the input screen are input-enabled also depends on the settings in Customizing for the function.

The production version field is optional and can be left blank. There is an F4 search help for the field, which displays the production versions for the plant and material. All production versions for the material are displayed, regardless of whether they are valid.

To create the order, confirm the input screen.

Check Routines

The order type field can be left blank. If the field is left blank, the order type is determined automatically using the following check hierarchy:

- Reading the production scheduling profile from the material master on the Work Scheduling tab page. Determining the order type for make-to-stock production from the production scheduling profile.
- Reading the production scheduling profile using the production supervisor entered in the material master on the Work Scheduling tab page. Determining the order type for make-to-stock production from the production scheduling profile.
- If an order type for converting planned orders to production orders is entered in the plant-dependent parameters for MRP, the order type for production orders is used.

If the check routine does not find an order type, the system prompts the user to fill the required entry fields.

> **Note**
>
> This check routine has only been developed for the creation of production orders. For the creation of process orders, we recommend that you specify the order type using a parameter or maintain the production scheduling profile in the material master on the Work Scheduling tab page.

You can use Customizing to specify the order types allowed for creating the order. If you have specified order types, they are checked after the input fields are confirmed. The automatically determined order type is also checked.

If the user enters an order type, the system checks whether this order type exists. If the order type entered cannot be found, the function terminates with an error message.

The settlement rule is determined from the order type. The system checks whether the settlement rule used supports the account assignment category for the creation of the production order. When a production order is created, the material is used as the receiver by default. For co-products, on the other hand, the order item is used as the receiver. For standard materials, a settlement rule must therefore be used that allows account assignment to the material. For co-products, a settlement rule must be used that allows account assignment to the order item.

If the user enters a production version, the system checks whether this production version exists. If the production version cannot be found, the function terminates with an error message.

The only permitted units of measure are the base unit of measure and the alternative units of measure from the material master. The system checks the unit of measure entered.

Dispatch

After the simulated order is created, it is dispatched immediately, provided that this is set in Customizing. The first operation of the newly created production order or process order is dispatched to the desired start time. The operation can only be dispatched there if there is sufficient free capacity at the time. If there is not enough capacity, the operation is dispatched to the next item with sufficient free capacity.

If the order has multiple operations, they are dispatched one after the other, meaning that each operation does not start until the predecessor has been completed. Only operations that are open in the planning table can be dispatched. The operations are planned sequentially – parallel planning is not supported.

> ⓘ Note
>
> During order creation, the requested start time is transferred to the order as the basic start date. The start time of the first operation of the order results from standard scheduling. For example, if floats are maintained, the first operation will not start at the same time as the basic start date. For creation without immediate dispatching, the transferred start date is the basic start date of the order.
>
> If immediate dispatching is activated, the first operation of the order with the desired start time is passed to the dispatching function. Scheduling during dispatching can shift both the basic start date and the start dates of the operations. You can only carry out forward scheduling by entering a start time.

Result:

Alert	Lock	Fmd	HJPT firm.	Dispatched	Order Number	Material	Ver.	Work ctr	Latest start	Lat.st.tme
●○○				X	%00000000001	LMPC_HALB_12	LM01	MA1	06.12.2022	10:00:00

Result

A new simulative order is visible. Only one order can be created per function call.

> → Remember
>
> The simulated orders are created using a standard SAP module. If data is required or discrepancies occur (warnings or errors) when the order is being created, an input screen appears for entering or correcting data. For example, if the requested date is not a working day, the module requires separate confirmation.

Restrictions

You use this action code to create simulative production orders or process orders that do not yet exist in the database. Simulative orders are subject to certain restrictions and cannot be executed with all HJPT functions.

⚠ Restriction

- If orders are created and not all machines containing operations for this material are open in HJPT planning table, only the operations in the open machines can be dispatched. Since operations that are not open are not taken into account in scheduling, the chronological sequence may not be correct for these operations.
- This is a simplified function for creating orders with a reduced range of features. The extensive validation routines that are performed in transactions CO01 or COR1 are not present here. Therefore, not all incorrect inputs can be detected by this function. This is not an error, but rather due to the simplicity of the function.
- The functions of the order information system cannot be executed for simulative orders because all functions are executed in the database and these orders do not yet exist in the database. Action Codes for Mass Processing [page 348]
- Transaction calls that read or change the data of orders cannot be performed for simulative orders because the order does not yet exist in the database. Transaction Calls [page 358]
- The equipment check chart cannot process simulative orders. The assignment of the equipment to the orders is read from the database. Since simulative orders do not exist in the database, no data can be determined for these orders. Equipment Check [page 94]
- The requirement date and the order relations can be generated for a simulative order. However, not all data for the order relations chart can be generated because the orders do not yet exist in the database. List of Order Relations [page 86]

The following action codes cannot be used with simulative orders:

- S_ATP ATP Check in Mass Processing [page 349]
- S_ATPPIO ATP Check and Order Conversion [page 351]
- S_AV77 Change Network [page 122]
- S_BED2 Read Requirement Date MD09 [page 382]
- S_BOMEXP Bill of Material Explosion and Component Quantity Update for Planned Orders [page 123]
- S_CO11N Entering Time Tickets [page 361]
- S_CO15 Enter Production Order Confirmation [page 362]
- S_CO24 Missing Parts Info System [page 363]
- S_CO40 Conversion of Planned Order to Production Order [page 364]
- S_CONVPI Mass Conversion of Planned Orders to Process Orders [page 353]
- S_CONVPP and S_CONVPL Mass Conversion of Planned Orders to Production Orders [page 354]
- S_COOIS Information System for Production Orders [page 355]
- S_COOISP Information System for Process Orders [page 356]
- S_COR5 Releasing Individual Process Orders [page 365]
- S_COR7 Creating Process Orders [page 366]
- S_CORTXT LMPC HJPT Order Text [page 134]
- S_CPV1
- S_DELPLA Deleting Planned Orders [page 161]
- S_EPNP Dispatching Operations of Networks [page 202]
- S_MB51 Material Document List [page 372]
- S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
- S_MD4C Order Report [page 374]

- S_MFREI Mass Release of Orders [page 356]
- S_ORDCLM Completing Production Orders Technically in Mass Processing [page 165]
- S_ORDREP LMPC Order Report [page 166]
- S_PHCH Change of Duration of a Phase in Process Order [page 169]
- S_PLVERS HJPT Read/Save Plan Version [page 253]
- S_SARBFV Change of Work Center for Operations by Changing the Production Version [page 175]
- S_SVDBF Save Data to Database Tables [page 416]
- S_SVOPDT Save Operation Dates [page 417]
- S_V_FREI Release of Operation in Production Order [page 357]

The following data providers deliver no data or only restricted data for simulative orders:

- Data Provider /LMPC/CL_DP_AFVG Order Operation Data Planned Order [page 433]
- Group Alert [page 436]
- Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
- Data Provider /LMPC/CL_DP_MEASURES Tasks, Resubmissions, Comments [page 483]
- Data Provider /LMPC/CL_DP_OP_ADD Additional Data for Operations [page 486]
- Data Provider /LMPC/CL_DP_PS_AFAB Relationships [page 489]
- Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]
- Data Provider /LMPC/CL_DP_USER_003 Quantities [page 508]
- Data Provider /LMPC/CL_DP_USER_103 Production Resource/Tool [page 514]

→ Tip

- This action code can be chained with other action codes. For details, see the section on concatenating action codes. Concatenation with S_CRORD [page 424]
- A simulative order can be changed with the action code S_CHORD. S_CHORD Change Orders via Input Window [page 126]
- Simulative orders have a number of disadvantages. To avoid these disadvantages, you can link the action code S_CRORD with the action code S_SAVE for saving the planning data. In this way, when a new order is created, it is immediately saved and receives a permanent order number. S_SAVE Save Planning [page 413]

2.6.4.15 S_DCPD Delete and Create Planning Data

The action code S_DCPD calls the program /LMPC/DCPD of transaction /LMPC/DCPD.

You can use this action code to execute the program for the header materials of the selected data records.

Depending on the settings, the program performs the following steps:

- Deletion of firmed planned orders
- Single- or multilevel MRP run

After processing, the data is reloaded so that the changed data is loaded into the planning table.

> ⚠ Restriction
>
> The action code has no check for changed data. The data is rebuilt and unsaved data is lost.

Depending on the settings, the program can run completely in the background or a screen can be displayed before execution that displays the selected materials. You can also set whether the log of the program is to be displayed or not.

For details on the program, see the following chapter: LMPC Delete and Create Planning Data [page 553]

Related Information

S_DCPD Configuration: Delete and Create Planning Data

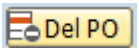
2.6.4.16 S_DELPLA Deleting Planned Orders

Delete planned orders

- Choose one or more planned orders.

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48
		X	MA3	2661884	2		0	LMPC_FERT_12	0010		02.08.2017	06:00:00	07.08.2017	08:30:00
		X	MA3	1329484	2		0	LMPC_FERT_12	0010		03.08.2017	11:06:51	04.08.2017	09:36:51

Selection of Operations

- Execute the action code 

(S_DELPLA).
- Result: The planned orders have disappeared from the LMPC HJPT planning board and are thereby deleted.

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48
		X	MA3	1329484	2		0	LMPC_FERT_12	0010		03.08.2017	11:06:51	04.08.2017	09:36:51
			MA3	60007645	1	10	0	LMPC_FERT_12	0010		04.08.2017	15:30:00	09.08.2017	17:00:00

Result

> → Tip
>
> Deletion works in simulation mode. The orders are only actually deleted if you then save.

2.6.4.17 S_DMOORD Create Planned Orders for Tests

Action Code for Generating Test Data

Use

You can use the action code S_DMOORD to create data for testing functions in the HJPT planning table.

For a work center, S_DMOORD deletes all planned orders loaded to the HJPT planning table and creates new planned orders.

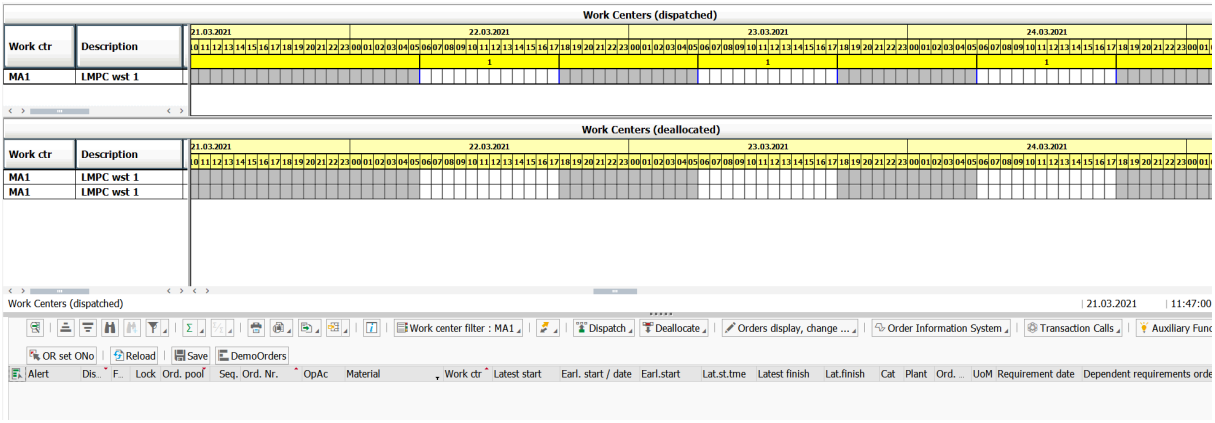
Depending on the settings in the action code, one or more planned orders can be created. The period for creating new orders always starts on the next Monday.

> **→ Tip**
>
> This action code is suitable, for example, for creating data for testing the LMPC timetable.

> **⚠ Restriction**
>
> Since this is a function for generating test data, it is not intended to be used in productive environments.

Procedure

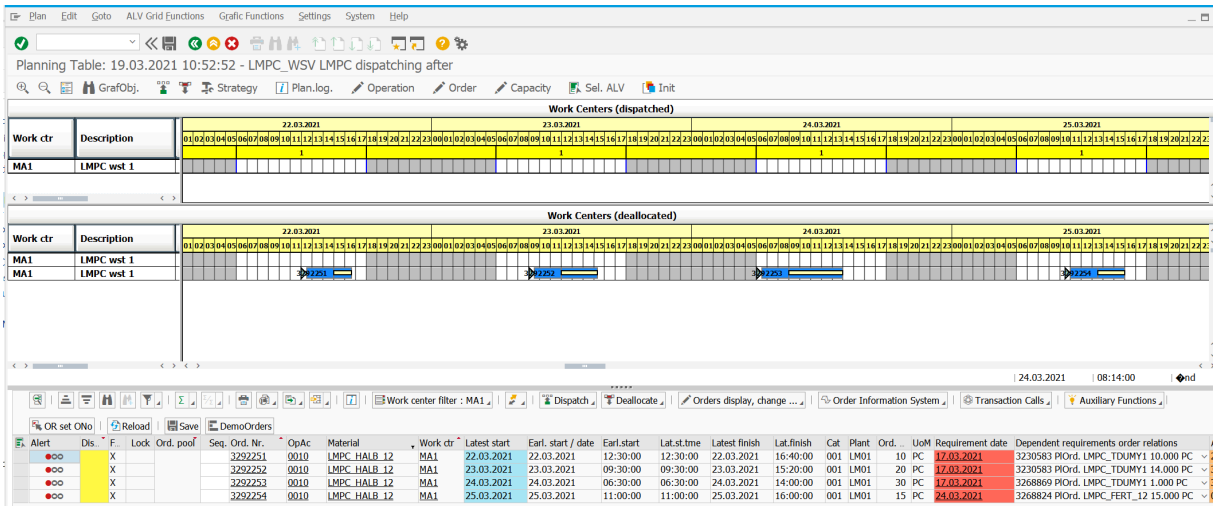
Initially, there are no orders on the machines.



Situation at Start

Execute the action code DemoOrders (S_DMOOR).

Result:



Newly Created Planned Orders

Planned orders have been created.

If the data is to be renewed, the action code can be executed again. If the deletion of planned orders is set in the action code, all planned orders at the work center are deleted before the new creation.

It is not necessary to select operations using the ALV Grid. The action code does not require selection.

If deletion is not set, additional orders can be created.

Related Information

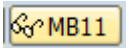
S_DMOORD Configuration: Creating Planned Orders for Testing

2.6.4.18 S_MB11 Displaying Pegged Requirements

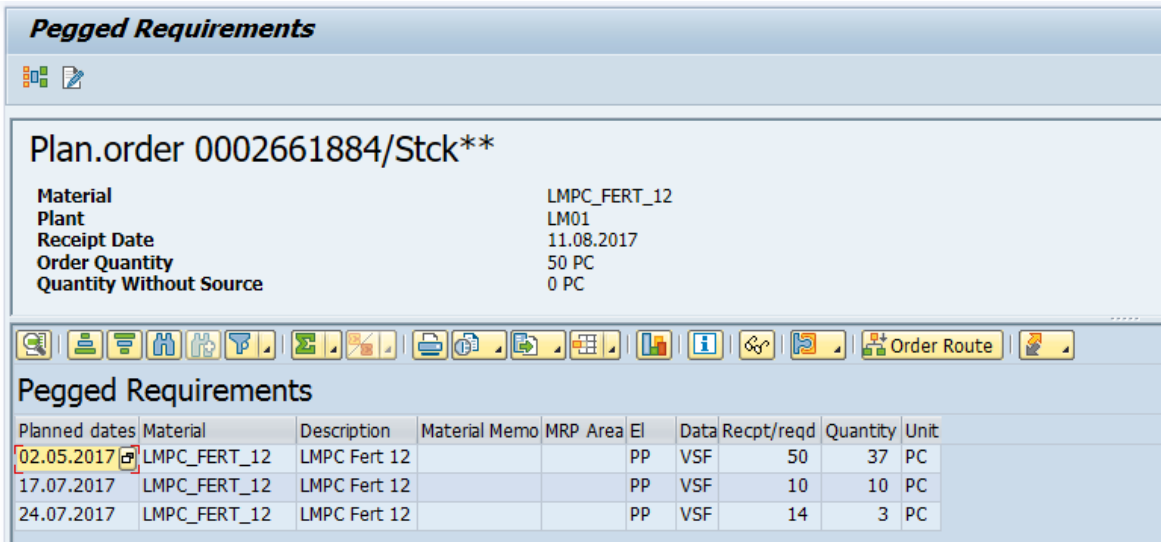
- Select an order operation in the ALV Grid of the LMPC HJPT planning table.

Stat...	I	F	Work ctr	Order	Cat	C...	Phase	Material	OpAc	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X	MA3	2661885	2		0	LMPC_FERT_12	0010		02.08.2017	13:55:48	03.08.2017	12:25:48
	X	X	MA3	2661886	2		0	LMPC_FERT_12	0010		03.08.2017	12:25:48	04.08.2017	13:55:48
	X		MA3	60007633	1	10	0	LMPC_FERT_KE	0010		09.08.2017	12:36:51	12.08.2017	09:06:51
		X	MA3	2661884	2		0	LMPC_FERT_12	0010		02.08.2017	06:00:00	07.08.2017	08:30:00

Select Operation

- Execute the action code 

(S_MB11).
- Result: The pegged requirements are displayed (as in transaction MD09).



Pegged Requirements

> ⚠ Restriction
>
> The action code can only be executed for one order.

2.6.4.19 S_ORDCL Closing Individual Production Orders or Process Orders Technically

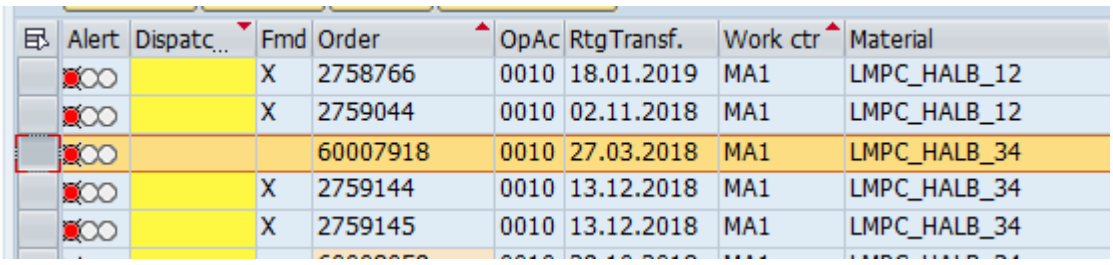
Technical Completion of Orders

Use

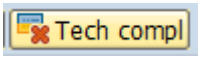
You can use the action code S_ORDCL to technically close production orders or process orders individually.

Procedure

- Select an operation of a production order or process order.



Selection of Operation

- Execute the action code 

(S_ORDCL).
- A popup window appears, which shows that the order has been completed since there are no capacity requirements.



Order Completion Message

- Result: The order has disappeared from the LMPC planning table.

Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material
		X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12
		X	2759044	0010	02.11.2018	MA1	LMPC_HALB_12
		X	2759144	0010	13.12.2018	MA1	LMPC_HALB_34
		X	2759145	0010	13.12.2018	MA1	LMPC_HALB_34

Result

→ Tip

The orders are closed in simulation mode and this is only written to the database when you save.

2.6.4.20 S_ORDCLM Completing Production Orders Technically in Mass Processing

Mass Processing: Technical Completion

Use

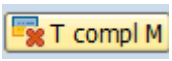
You can use the action code S_ORDCLM to technically complete any number of production orders at the same time. However, the action code S_ORDCPI contains the same function for process orders.

Procedure

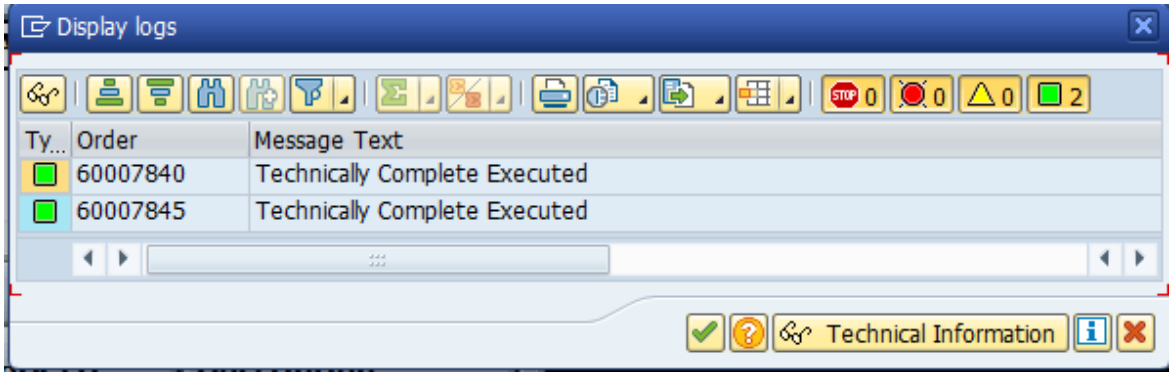
- Select one or more production orders in the HJPT ALV Grid.

Alert	Conflict	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	SOp	Material
				MA3	60007840	0010	1	10	0		LMPC_FERT_12
				MA3	60007845	0010	1	10	0		LMPC_FERT_12

Selection of Production Orders

- Execute the action code 

(S_ORDCLM).
- A popup window displays the log for mass processing.



Log with Confirmation in Popup Window

The orders have been completed.

- Confirm the log. The LMPC HJPT planning table executes a reload. The orders then disappear.

2.6.4.21 S_ORDREP LMPC Order Report

LMPC Order Report

Use

For a production order, the LMPC order report shows an overview of the upstream planned and production orders for all low-level codes of the materials used. It has a similar structure to the material tree of the standard SAP transaction MD4C. You can only access it via a production order. It is not possible to display data for planned and process orders. The order report is called either via the action code S_ORDREP in the LMPC planning table, or via transaction /LMPC/ORDER_REP.

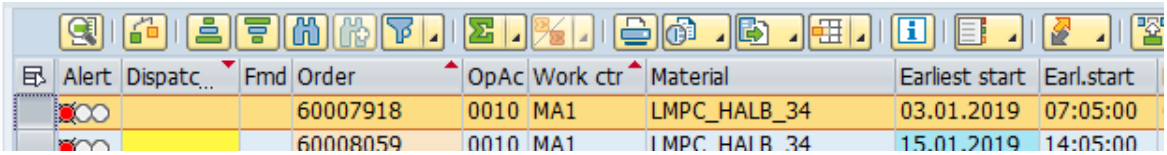
In the LMPC standard delivery, the LMPC order report shows the same data as transaction MD4C. However, the difference lies in the fact that an extension is possible via data providers and field enhancements of the underlying ALV structure.

It is possible to color entire rows, as well as individual fields of the ALV Grid. There are 5 status fields that are filled with the status information of the orders depending on the settings made.

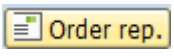
> → Tip
>
> The enhancement and settings options enable the customer to make flexible modifications to the transaction.

Procedure

- Select an operation for a production order in the ALV Grid of the LMPC HJPT planning table.

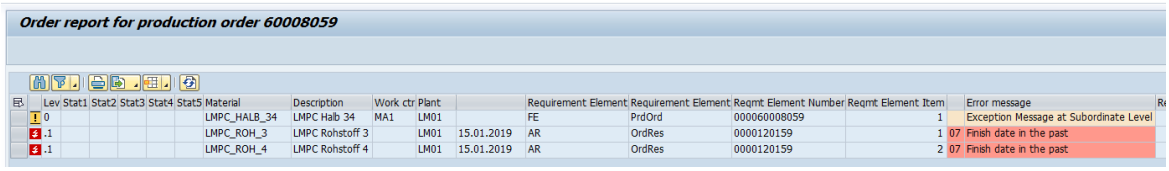


Selection

- Execute the action code 

(S_ORDREP).

- Result:



LMPC Order Report

The LMPC order report is displayed.

2.6.4.22 S_PCONV Partial Conversion of Planned Orders with Subsequent Dispatching

Partial conversion of planned orders

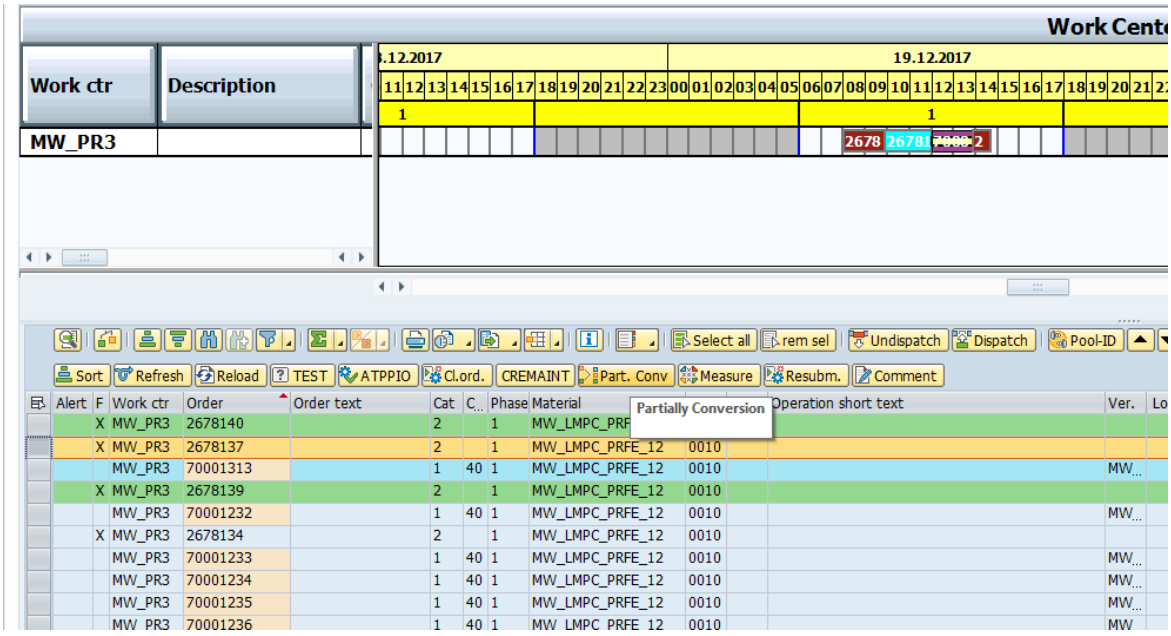
Use

You use the action code S_PCONV to convert planned orders into either process orders or production orders. If the planned order was dispatched previously, the newly generated process order or production order is also dispatched after conversion.

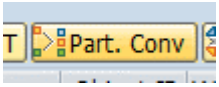
Procedure

- Select an operation of a planned order in the LMPC ALV Grid.

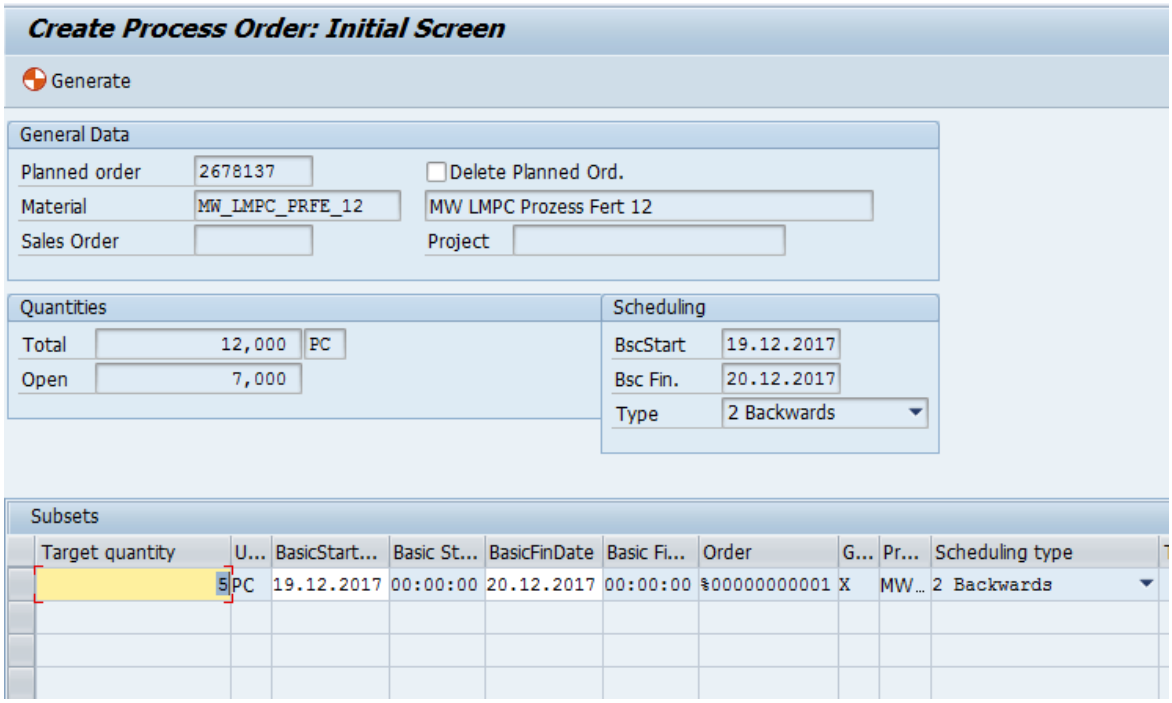
> **Restriction**
>
> Only one planned order can be converted at a time.



Select Planned Order for Conversion

- Execute the action code 

(S_PCONV).
- The transaction for the partial conversion (either COR7_PC or CO48, depending on Customizing and the scenario) is called.
- Define the quantity of the partial conversion.



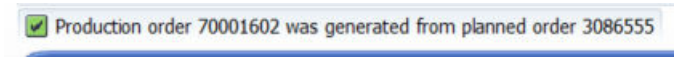
Execute Partial Conversion

- Save the partial conversion and confirm the popup window.



Information Message

- The transaction sends a confirmation message with the new order number.



Conversion Message

- You use the *Back* button to return to the LMPC planning table.
- Now, automatic dispatching is performed, provided the `SKIP` parameter is not set in Customizing.
- Result: The two orders (newly generated order and existing planned order) are dispatched at the start time at which the planned order was scheduled previously. First the new process/production order is dispatched, then the planned order. These make use of the same capacity as the planned order on its own did previously. The two orders are then selected automatically, to make them more visible in the ALV Grid.

Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material
		X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12
		X	2759044	0010	02.11.2018	MA1	LMPC_HALB_12
		X	2759144	0010	13.12.2018	MA1	LMPC_HALB_34
		X	2759145	0010	13.12.2018	MA1	LMPC_HALB_34

Result of the Conversion

→ Tip

If the parameter BOMEXPL is set, then after dispatch, a new BOM explosion is performed for the planned order with the remaining quantity on the dispatching date.

Related Information

S_PCONV Configuration: Partial Conversion of Planned Orders

2.6.4.23 S_PHCH Change of Duration of a Phase in Process Order

Change Phase Duration of PP-PI Process Orders

Use

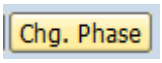
You can use this action code to change the duration of standard values of phases in process orders. In Customizing, you configure which phase of a process order is to be changed, and which standard value in the phase. Several standard values can be changed at the same time.

Procedure

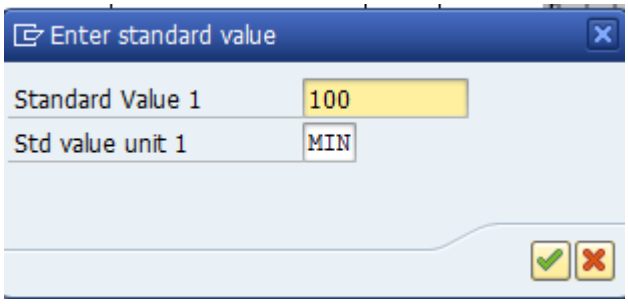
- Select an operation of a process order in the ALV Grid of the LMPC HJPT planning table.

Alert	Dispa...	F...	Ord. p...	Number	Order	OpAc	Material	Work ctr	Earliest start	Earl.start
		X			3086479	0020	LMPC_PRHA_12	PR2	31.10.2019	23:50:00

Selection

- Execute the action code 

(S_PHCH).
- The system displays a popup window in which you can enter the standard values.



Popup Window for Standard Values

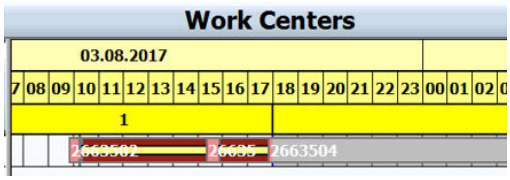
- Here, you can change the time and the unit of the standard value.
- Confirm the popup window.
- Result: The changes are visible immediately in the graphical section of the planning table. This means that the order length is adjusted.

→ Tip

- The changes are made in the buffer of the capacity planning table and only come into effect when the planning result is saved. Changes may be discarded by exiting the planning table without saving, or by reloading the data.
- When a phase is changed, it is deallocated automatically. You can make settings in Customizing so that automatic rescheduling takes place when the change is made.

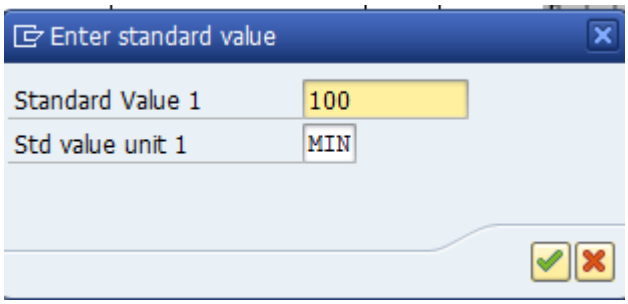
Example

- Order length before change:

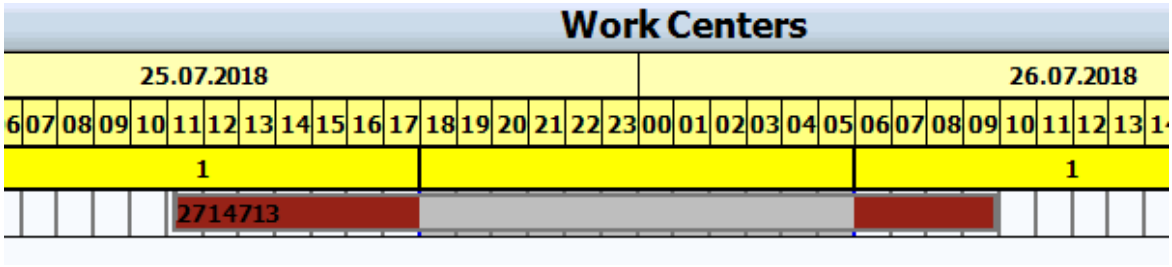


Order Before Change

- Change:



- Result:



Operation after the Change

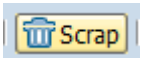
2.6.4.24 S_PLOSS Enter Production Scrap in Order

Adjust the Production Scrap in the Order

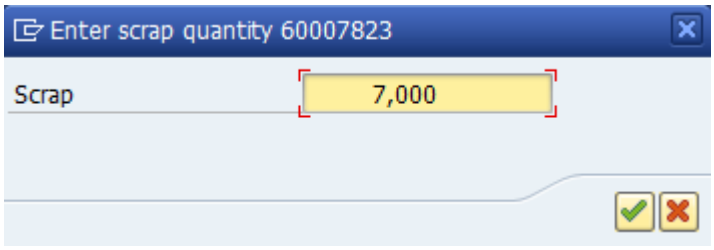
Use

This action code enables you to enter a firmed production scrap for planned, production, and process orders. This is possible for both dispatched and deallocated orders. The total quantity of the order is changed by the corresponding amount and also recorded as scrap. The production scrap can be increased and reduced. The order quantity is adjusted accordingly. Note that dispatched orders are deallocated automatically after you change the quantity. However, you can configure automatic re-dispatching. It is also possible to process several orders at the same time. The action code works for planned, production, and process orders. You make the changes in the buffer of the graphical planning table. The system does not write the values to the database until you choose Save. You can discard changes simply by exiting the LMPC planning table without saving, or by refreshing the data.

Procedure

- Select one or more orders in the ALV Grid of the LMPC planning table.
- Execute the action code 

(S_PLOSS).
- A popup window with an input option for the production scrap opens for each order. The popup window displays the existing production scrap of the order, which can now be changed.



Enter Production Scrap

- After you confirm your entry, the order quantity is either increased or decreased depending on the production scrap before the change. The production scrap is entered in the order.

For all order types, the following field changes:

- MGVRG_KB (operation quantity)

For planned orders, the following fields change:

- GSMNG_PA (total planned order quantity)
- AVMNG_PA (fixed quantity of scrap from production)

For production and process orders, the following fields change:

- GAMNG_FA (total order quantity/target quantity)
- GASMG_FA (total scrap quantity in the order)

Order	Operation Quantity	Planned order qty	Scrap quantity	Total order quantity	Total scrap
2703323	49	49	4		
2703322	22	22	2		
2703327	17	17	0		
60007781	13			13	3
60007647	10			10	2
60007809	7			7	0

Order Quantities of Planned and Production Orders

After the quantity has been changed, the orders are rescheduled since the capacity requirements change as a result of the change. Orders that have already been dispatched are automatically deallocated by the quantity change. The parameter settings determine whether orders already dispatched are dispatched again.

> → Tip
>
> The changes are transferred to the system after you save, or can be discarded via a refresh.

Related Information

S_PLOSS Configuration: Enter Production Scrap in Order

2.6.4.25 S_SARBPL and S_HARBPL Change the Work Center for Operations of Production and Process Orders

Change of work center in the order operation

Use

You can use the action codes S_SARBPL and S_HARBPL to change the work centers used in operations of production, process and maintenance orders. Only the work center assignment is changed in the operation. The production version is not checked or changed. You can move operations to any work centers. The change is made in the simulation mode.

You can select work centers in four different ways:

- By entering them manually in a popup window (S_SARBPL).
- By making a selection from a proposal list. The list is derived from a parameter for the action code S_SARBPL.
- By making a selection from the work center hierarchy, which is stored in the overall profile of the capacity planning table. Provision of all work centers that are not leaf nodes (S_SARBPL).

- By making a selection from the work center hierarchy, which is stored in the overall profile of the graphical planning table. Provision of all work centers that are at the same level as the current work center plus the work center leaf node one level higher (S_HARBPL).

> ⚠ Caution
>
> If dispatched operations are changed, they lose their dispatching and must be dispatched to the new work center again after the change.

The change is possible for several operations at the same time. All operations are moved to the same work center.

It is also possible to move suboperations of production orders and process orders to other work centers. If the suboperations are to be dispatched again after the change, a special feature must be taken into account for process orders. For process orders, dispatching cannot take place by selecting the suboperation. Therefore, a suboperation cannot be moved in the graphic by dragging and dropping. To dispatch process orders, the data record must be selected for the operation.

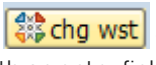
> ⚠ Restriction
>
> This function is also not possible for planned orders. If the settings in the strategy profile allow it, you can move planned orders to any work centers for which no production versions exist by dragging and dropping them in the graphic. However, these moves are not stable. When the planned order is rescheduled after a change, these operations return to the original work center. You can lose the dispatching status and be deallocated. Therefore, the option to reschedule planned orders has been deactivated for the action codes S_SARBPL and S_HARBPL. If you want to move operations from planned orders to other work centers, you should change the production version. A description of this can be found in action code S_SARBFV.
> S_SARBFV Change of Work Center for Operations by Changing the Production Version [page 175]

Procedure

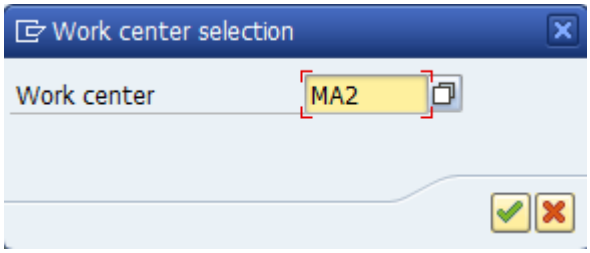
- Select an operation of a production, process or maintenance order.

Alert	Dispatc...	Fmd	Order	OpAc	Work ctr	Material	Earliest start
			60007918	0020	MA2	LMPC_HALB_34	04.01.2019
			60008059	0010	MA1	LMPC_HALB_34	15.01.2019
			60008059	0020	MA2	LMPC_HALB_34	15.01.2019

Selection

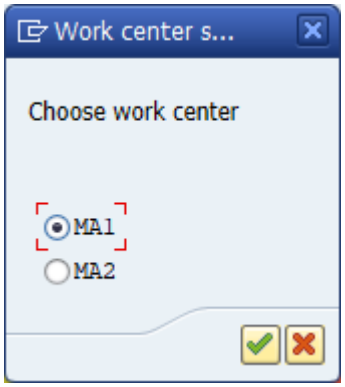
- Execute the relevant action code.
- If the action code 

(S_SARBPL) was executed without a parameter list, the system displays a popup window with an entry field.



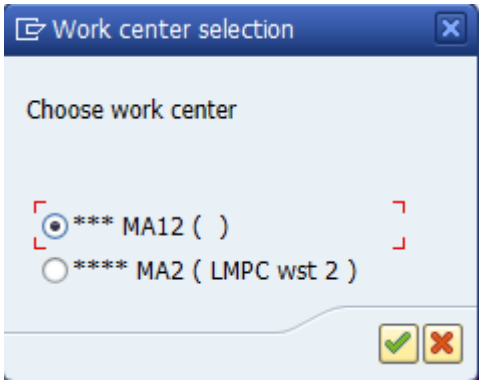
Manual Entry of Work Center

- Enter the desired work center and confirm the popup window.
- If the action code chg wst (S_SARBPL) was executed with a parameter list, the system displays a selection list.



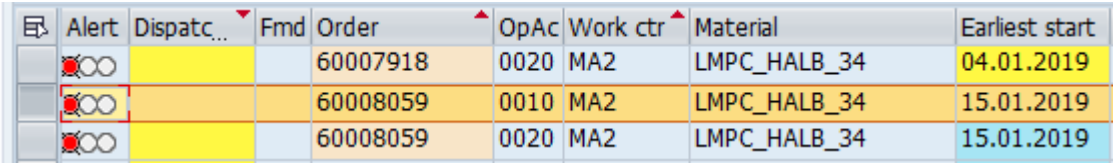
Selection List with Parameters

- If the action code chg wst h (S_HARBPL) has been executed, or the action code chg wst (S_SARBPL) with the settings for the hierarchy has been selected, the system displays the selection list from the work center hierarchy.



Selection List Work Center Hierarchy

- Select a work center from the selection list and confirm the popup window.
- Result: The operation has been moved to the desired work center. If the work center is open in the LMPC HJPT planning table, you can see the move immediately.



Alert	Dispatc...	Fmd	Order	OpAc	Work ctr	Material	Earliest start
			60007918	0020	MA2	LMPC_HALB_34	04.01.2019
			60008059	0010	MA2	LMPC_HALB_34	15.01.2019
			60008059	0020	MA2	LMPC_HALB_34	15.01.2019

Result Change of Work Center

→ Tip

When you save the LMPC HJPT planning table, the result is written to the database. You can refresh the data without saving to discard the changes.

> ⚠ Caution
>
> Note that the system logic for determining the work centers in the hierarchy differs depending on the selected action code. For details, see the LMPC Configuration Guide.

Related Information

S_SARBPL, S_HARBPL Configuration: Change of Work Center at Operation

2.6.4.26 S_SARBFV Change of Work Center for Operations by Changing the Production Version

Change of work center by changing the production version

Use

You can use the action code S_SARBFV to change the work center used for operations in planned, production, and process orders. The change is made by changing the production version. Therefore, the change is also possible for planned orders.

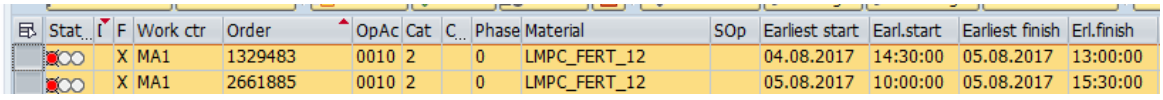
For planned orders, there is also the standard function of the capacity planning table. You can change the production version for planned orders by simply rescheduling using drag and drop. This is a standard function of the capacity planning table and not an LMPC function. This function is documented here because it can be categorized here thematically.

Prerequisite

There are production versions for the material, which contain different work centers. The function reads the work center selection for the operation from the production versions.

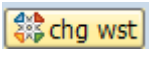
Procedure for Changing the Production Version Using an Action Code

- Select one or more data records with the same operation number and the same material in the ALV Grid of the LMPC HJPT planning table.

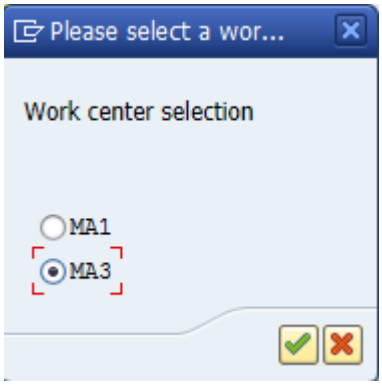


Stat...	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	Material	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
		X	MA1	1329483	0010	2		0	LMPC_FERT_12		04.08.2017	14:30:00	05.08.2017	13:00:00
		X	MA1	2661885	0010	2		0	LMPC_FERT_12		05.08.2017	10:00:00	05.08.2017	15:30:00

Selection of Order Operations

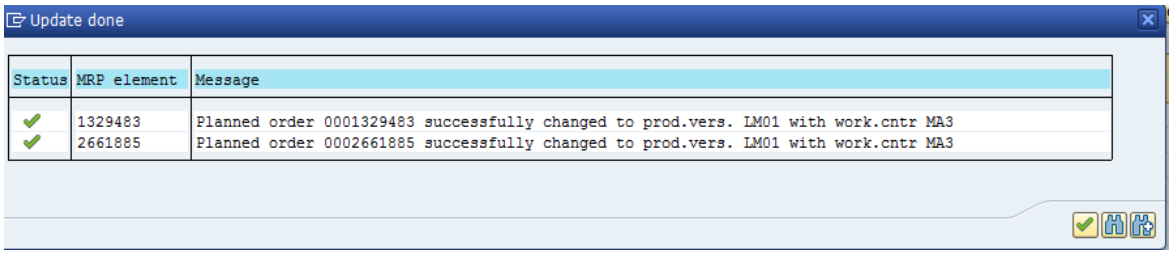
- Execute the action code 

(S_SARBFV).
- The system displays a popup window with the possible work centers.



Work Center Selection Dialog Box

- Select the desired work center and confirm the popup window.
- A popup window with the result of the move appears.



Result Dialog Box

- Confirm the popup window.
- Result

Stat...	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	Material	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
		X	MA3	1329483	0010	2		0	LMPC_FERT_12		02.08.2017	13:30:00	04.08.2017	10:00:00
		X	MA3	2661885	0010	2		0	LMPC_FERT_12		04.08.2017	09:30:00	05.08.2017	08:00:00

Result in the ALV Grid

The operations have been moved to the desired work center. If this work center is open in the HJPT planning table, the changes are visible immediately.

> ⚠ Caution
>
> The move to another work center does not take place in simulation mode, it is implemented in the database and therefore cannot be undone by refreshing the data. If the orders have been dispatched, they will be deallocated by the change. Automatic dispatching after the change is not possible.

Procedure for Changing the Production Version Using Drag and Drop

If you want to reschedule an operation to another work center and you want to change the production version, you can also do this using drag and drop in the graphic.

This is only possible:

- For planned orders
- When rescheduling operations that have already been dispatched to other capacities
- For routings in which the work center is only used in one operation

Drag an operation from the chart of operations not yet dispatched to a capacity in the first chart of the capacity planning table. The first chart is the chart for dispatching.

You can also use drag and drop to reschedule an operation that has already been dispatched to another capacity.

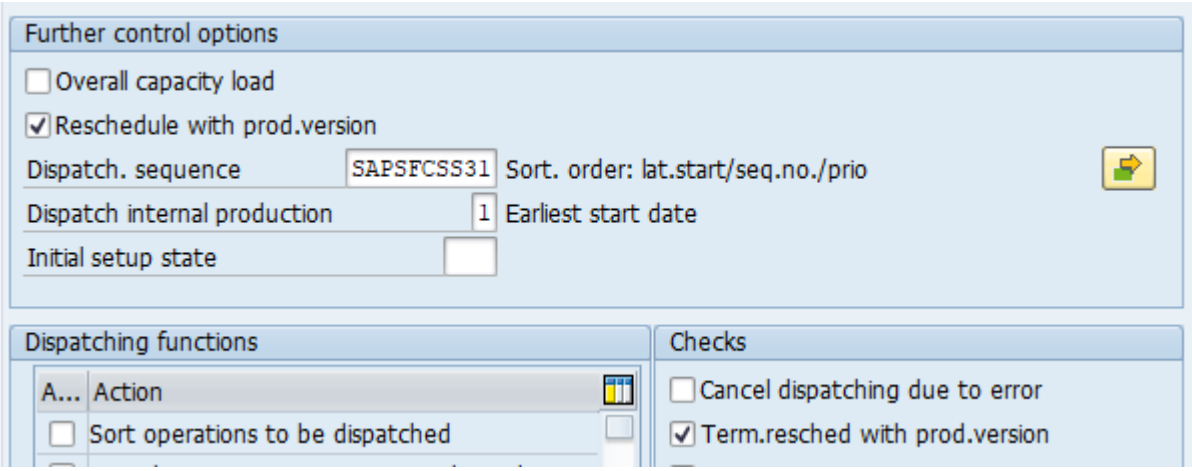
If the new target work center exists in a valid production version for this material, the production version in the planned order is changed.

If the new target work center does not exist in a valid production version, planning is either terminated or the work center is changed without changing the production version.

The system behavior depends on the settings of the strategy profile used. In the HJPT planning table, when dragging and dropping in the graphic, the strategy profile used is the one stored in the overall profile as the strategy profile for drag and drop.

Two settings are important in the strategy profile:

- “Rescheduling with Production Version” in the “Further Control Options” section.
- "Termination During Rescheduling with Prod.Vers." in the "Checks" section.



Section: Strategy Profile Transaction OPDB

For the production version to be changed, the “Reschedule with Production Version” checkbox must be set.

The system response in the event of an error is controlled by the “Cancel on Rescheduling with Prod.Vers.” checkbox.

If the checkmark is set, the planned order cannot be rescheduled to a work center for which no production version exists. Planning terminates with an error message in the planning log.

If the checkmark is not set, the planned order can be rescheduled. However, since no new production version exists for the new work center, the previous production version is retained and the operation is scheduled with the previous standard values using the formulas at the work center.

⚠ Restriction

- The check for the change of the production version when dragging and dropping in the graphic only works for planned orders. For production or process orders, on the other hand, the production version is not changed. For these orders, there is also no check to see whether a production version exists for the desired target work center. You cannot prevent operations from being moved to another work center via drag and drop. This means that you can switch these orders to other work centers as you wish.
- Planned orders should only be rescheduled to other work centers using drag and drop in the graphic if a valid production version exists for these work centers. The dispatching of planned orders to work

centers for which no production version exists is not stable. If the data of the planned orders is changed, for example, when the quantity is changed, the planned orders are rescheduled. Scheduling restores the work center from the routing, which causes the planned orders to return to their original work center (SAP Note 334643). To prevent planned orders from being moved to work centers for which there is no production version, the check for the production version should be activated in the strategy profile. In addition, the corresponding routings and production versions should be created for alternative work centers. See also the notes on locking behavior for planned orders. S_LOCK Temporarily Lock Orders [page 402]

2.6.4.27 S_SPLIT Distribute Capacity Requirements to Individual Capacities Manually

Split capacity requirements

Use

With this function, the capacity requirements of the operations of production orders are distributed manually from main capacities to individual capacities.

Planning Scenario

This action code is used in a scenario with individual capacities. The main capacity of a work center contains further subordinate individual capacities here.

The capacity requirements are created infinitely by the MRP run on the main capacity. As a result, this can be over-used several times. The operations are dispatched infinitely to the main capacity.

In the next step, the planner uses the action code S_SPLIT to manually assign the capacity requirements that are on the main capacity to the subordinate individual capacities. As a result, finite planning is carried out on the individual capacities.

⚠ Restriction

- Only operations of production orders can be processed. Planned orders cannot be processed.
- The function requires work centers with individual capacities.
- It is not possible to split an operation into several operations.

⚠ Caution

This action code is only listed in the HJPT documentation for the sake of completeness. This is a special function for very rare use cases.

To distribute capacity requirements to individual capacities, you can only use the S_SPLIT function in the HJPT planning table.

With all other HJPT planning functions, direct dispatching to individual capacities is not possible. The planning functions of the HJPT planning table all use the standard dispatching function of the capacity planning table. This does not support dispatching to individual capacities. This is a technical restriction that cannot be lifted by changing the programming.

The LMPC profiles for the capacity planning table, which are contained in the standard LMPC delivery, do not support the display and processing of individual capacities either.

If you want to work with individual capacities, you must define your own profiles for the capacity planning table and activate the display of individual capacities there.

Due to these restrictions, the use of a planning scenario with individual capacities in the HJPT planning table is not recommended.

It is recommended that you map the machines as separate work centers with main capacities instead of individual capacities. You can then also use all standard planning functions of the HJPT planning table.

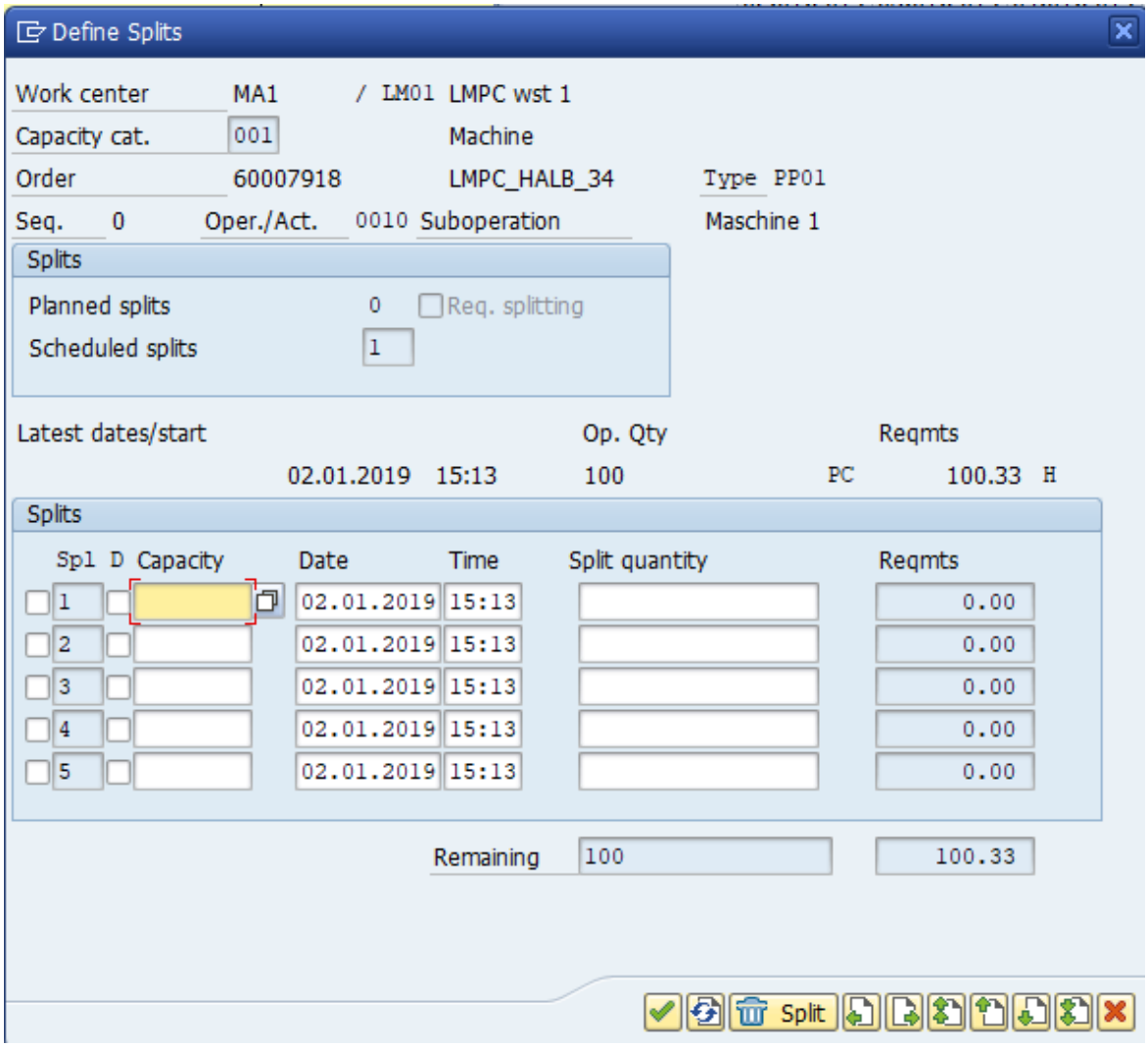
Procedure

- Select an operation of a production order in the ALV Grid.

Alert	Dispatc...	Fmd	Order	OpAc	Work ctr	Material	Earliest start	Earl.start
	X		60007918	0010	MA1	LMPC_HALB_34	02.01.2019	15:13:36

Selection

- Execute the action code Split (S_SPLIT).
- The popup window for defining splits appears.



Screen for Defining Order Splits

- Enter the desired capacity for the order split and the split quantity.
- Confirm your selection.
- Result: The orders have been split. The selected individual capacities have order operations with the desired split quantity.

> → Remember
>
> Function S_SPLIT is a function of the capacity planning table. The function is standard to SAP and cannot be changed or influenced by the HJPT planning table. Since this function is a standard function of the capacity planning table, this function is not described in detail in the LMPC documentation. For more information about the functions of order splits, prerequisites, and restrictions, see the standard SAP documentation.

2.6.5 Planning Functions

The following chapters introduce, all planning functions of the SAP LMPC HJPT detailed scheduling planning board.

Scheduling of Operations and Orders

Scheduling takes place when dispatching and deallocating operations. The dates of the operations are recalculated.

When dispatching, the start time of the operations is defined by the respective planning function. The basic dates of the orders are adjusted to the operation dates of the operations if this is defined in the scheduling settings (transactions OPU3 and OPU5).

When deallocating with the action code S_APSC, the dates of the operations do not adjust. S_APSC Deallocate via Status Change Without Scheduling [page 182]

For all other functions for deallocating operations, the operation dates are recalculated because scheduling is run during deallocation.

When deallocating, scheduling not only checks the dates of the operations, but also the basic dates of the orders. Scheduling always works such that the basic dates and the operation dates are both correct.

The basic start date must never be in the past, meaning that the basic start date can take the current date at the earliest when deallocating.

When deallocating, no start time is specified for the operations. The dates of the operations are recalculated starting from the basic start date, taking the available capacity into account. Any configured float before production in days is taken into account. The float before production is a buffer in days between the basic start date and the scheduled start date for production. Scheduling works forwards.

The first operation starts at the earliest available capacity of the day after the float before production, for example 06:00. If there is no float before production, the basic start date is the start day of the first operation of an order.

If planning in non-working times is set in the strategy profile for deallocation, the operation starts at 00:00, since this is the earliest date on this day.

This description shows that it is not possible to obtain the operation dates of the previous dispatching during deallocation, except in the special case where the operation was dispatched to the earliest available capacity on a day before deallocation.

For the complete description of scheduling, see the standard SAP documentation. Date Determination at Operation Level

⚠ Restriction

- All planning functions were developed independently of one another. It is not possible to deduce the behavior of one planning function from the behavior of another function.
- Pooled capacities can only be used with restrictions in the HJPT planning table. LMPC and Pooled Capacity [page 563]
- The behavior of orders in collective orders is different and is explained in a separate chapter. LMPC and Collective Orders [page 567]

ⓘ Note

If you require help with selecting or configuring planning functions to achieve your planning goal, please contact LMPC Consulting. LMPC Consulting Support does not provide any information about the function or the correct configuration of planning functions. These are consulting topics.

2.6.5.1 S_APALL Deallocate All Operations

Deallocate all dispatched operations

Use

You can use this function to deallocate all dispatched operations. You do not have to select any operations. All open dispatched operations are simply deallocated.

This function can be used to undo all dispatches with one click.

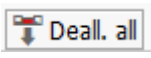
Procedure

Situation at start:

Alert	Dis...	F...	Order pool	Seq.	Order Number	Cat	OpAc	OpAc	WrkCntr...	Material	Work ctr	Cat	Ord. ...	UoM	Earliest start	Earl.start	Earliest finish	Erl.finish
●○○	X	X			3228917	2	0020	0020	10003965	LMPC_HALB_12	MA2	001	6	PC	27.10.2020	17:43:20	28.10.2020	06:31:20
○▲○	X	X			3231756	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	7	PC	27.10.2020	17:43:20	28.10.2020	07:25:20
○▲○	X	X			3228916	2	0020	0020	10003965	LMPC_HALB_12	MA2	001	34	PC	28.10.2020	06:31:20	28.10.2020	11:03:20
○▲○	X	X			3231756	2	0020	0020	10003968	LMPC_FERT_34	MA4	001	7	PC	28.10.2020	07:25:20	28.10.2020	07:39:20
○▲○	X	X			3231755	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	4	PC	28.10.2020	07:25:20	28.10.2020	08:49:20
○▲○	X	X			3228977	2	0010	0010	10003966	LMPC_HALB_12	MA1	001	3	PC	27.10.2020	17:43:20	28.10.2020	08:43:20
○▲○	X	X			3231755	2	0020	0020	10003968	LMPC_FERT_34	MA4	001	4	PC	28.10.2020	08:49:20	28.10.2020	08:57:20
○▲○	X	X			3231754	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	3	PC	28.10.2020	08:49:20	28.10.2020	10:07:20

Initial Situation

Many operations are dispatched.

Execute the action code 

(S_APALL).

Result:

Alert	Dis...	F...	Order pool	Seq.	Order Number	Cat	OpAc	OpAc	WrkCntr....	Material	Work ctr	Cat	Ord. ...	UoM	Earliest start	Earl.start	Earliest finish	Erl.finish
●○○		X			3230583	2	0010	0010	10003968	LMPC_TDUMY1	MA4	001	40	PC	03.11.2020	06:00:00	04.11.2020	07:20:00
○▲○		X			3231113	2	0010	0010	10003967	LMPC_FERT_KE	MA3	001	77	PC	03.11.2020	06:00:00	10.11.2020	12:00:00
○▲○		X			3231114	2	0010	0010	10003967	LMPC_FERT_KE	MA3	001	33	PC	03.11.2020	06:00:00	05.11.2020	16:00:00
○▲○		X			3231115	2	0010	0010	10003967	LMPC_FERT_KE	MA3	001	2	PC	03.11.2020	06:00:00	03.11.2020	09:00:00
○▲○		X			3231747	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	1	PC	03.11.2020	06:00:00	03.11.2020	07:06:00
○▲○		X			3231748	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	7	PC	03.11.2020	06:00:00	03.11.2020	07:42:00
○▲○		X			3231749	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	2	PC	03.11.2020	06:00:00	03.11.2020	07:12:00
○▲○		X			3231750	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	3	PC	03.11.2020	06:00:00	03.11.2020	07:18:00
○▲○		X			3231751	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	4	PC	03.11.2020	06:00:00	03.11.2020	07:24:00
○▲○		X			3231752	2	0010	0010	10003967	LMPC_FERT_34	MA3	001	6	PC	03.11.2020	06:00:00	03.11.2020	07:36:00

Result

All operations have been deallocated.

Since the action code makes the selection itself, the action code limitation function cannot be applied.

→ Tip

This action code can also be used in background processing to deallocate all operations. Program /LMPC/HJPT Background Processing [page 26]

⚠ Restriction

Since the action code has its own selection routine, the action code limitation function does not work for this action code. Action Code Limits [page 104]

2.6.5.2 S_APSC Deallocate via Status Change Without Scheduling

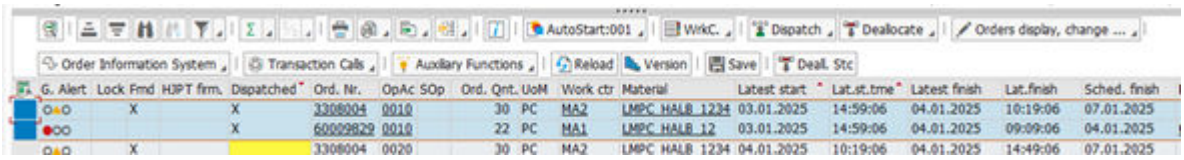
Use

You can use this action code to deallocate operations by changing the status. The status of the respective operation is changed from “dispatched” to “deallocated”. The operations do not go through scheduling. As a result, the times of the capacity requirements remain unchanged.

This function can be used if the dates are not to be changed when the operations are deallocated.

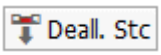
Procedure

Select one or more operations that are dispatched.



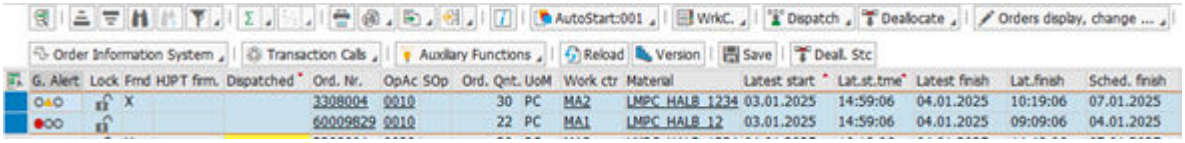
Selection of Operations

Execute the action code



(S_APSC).

Result:



Result

The status of the operations has been changed from “Dispatched” to “Deallocated”, the dates remain unchanged.

> ⓘ Note
>
> Since deallocation is performed without the planning function, no strategy profile is required for this action code.

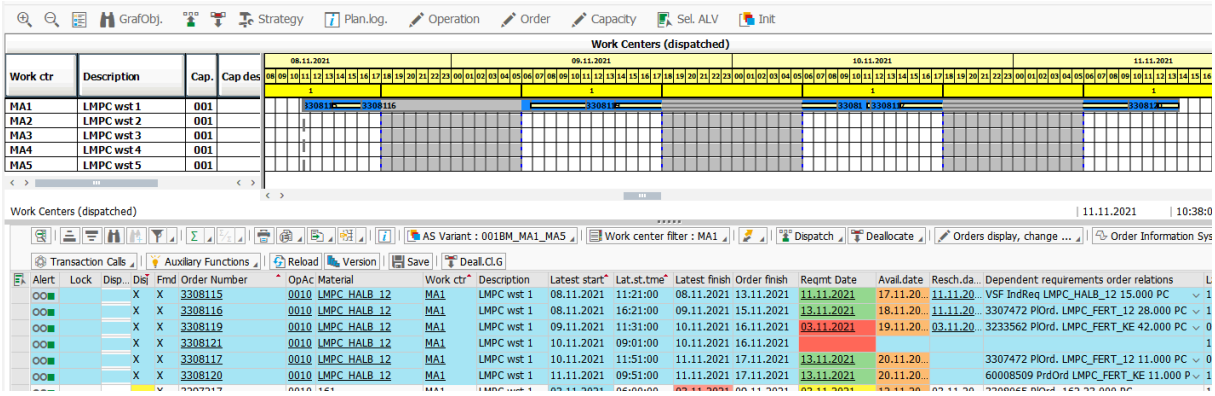
2.6.5.3 S_APSCG Deallocate Selected Operations and Close Gaps

Use

You can use this action code to deallocate operations. The gaps that would arise in the production plan due to the deallocation of operations are closed immediately. A production plan without gaps is retained.

Procedure

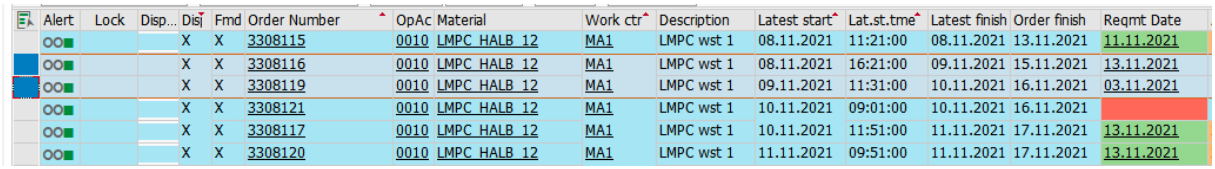
Initial situation:



Production plan without gaps

The operations are dispatched to the work center without gaps.

Select one or more operations that are to be deallocated.

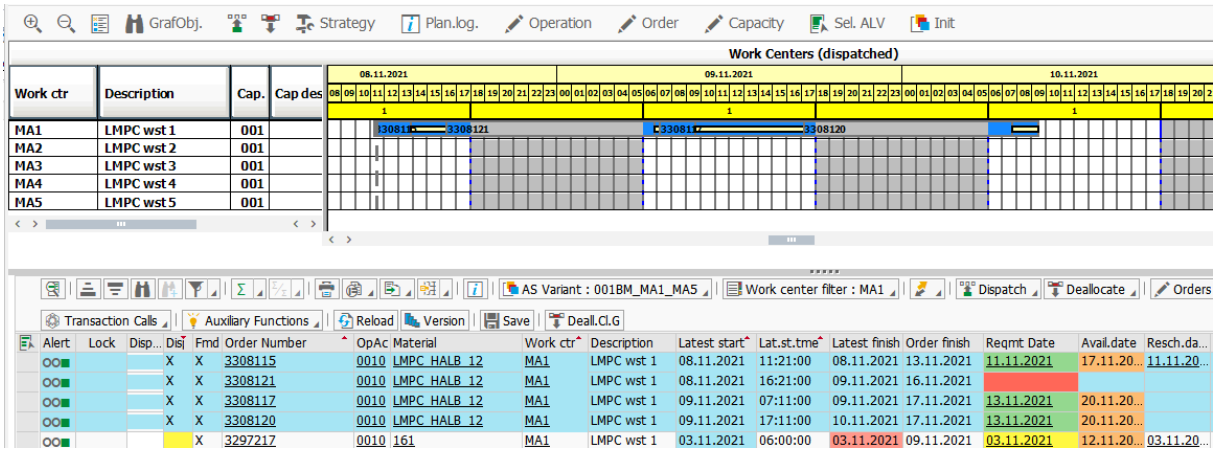


Alert	Lock	Disp...	Dis	Fmd	Order Number	OpAc	Material	Work ctr	Description	Latest start	Lat.st.tme	Latest finish	Order finish	Reqmt Date
			X	X	3308115	0010	LMPC_HALB_12	MA1	LMPC wst 1	08.11.2021	11:21:00	08.11.2021	13.11.2021	11.11.2021
			X	X	3308116	0010	LMPC_HALB_12	MA1	LMPC wst 1	08.11.2021	16:21:00	09.11.2021	15.11.2021	13.11.2021
			X	X	3308119	0010	LMPC_HALB_12	MA1	LMPC wst 1	09.11.2021	11:31:00	10.11.2021	16.11.2021	03.11.2021
			X	X	3308121	0010	LMPC_HALB_12	MA1	LMPC wst 1	10.11.2021	09:01:00	10.11.2021	16.11.2021	
			X	X	3308117	0010	LMPC_HALB_12	MA1	LMPC wst 1	10.11.2021	11:51:00	11.11.2021	17.11.2021	13.11.2021
			X	X	3308120	0010	LMPC_HALB_12	MA1	LMPC wst 1	11.11.2021	09:51:00	11.11.2021	17.11.2021	13.11.2021

Selection

Execute the action code Deall.Cl.G (S_APSCG).

Result:



Alert	Lock	Disp...	Dis	Fmd	Order Number	OpAc	Material	Work ctr	Description	Latest start	Lat.st.tme	Latest finish	Order finish	Reqmt Date	Avail.date	Resch.da...
			X	X	3308115	0010	LMPC_HALB_12	MA1	LMPC wst 1	08.11.2021	11:21:00	08.11.2021	13.11.2021	11.11.2021	17.11.20...	11.11.20...
			X	X	3308121	0010	LMPC_HALB_12	MA1	LMPC wst 1	08.11.2021	16:21:00	09.11.2021	16.11.2021			
			X	X	3308117	0010	LMPC_HALB_12	MA1	LMPC wst 1	09.11.2021	07:11:00	09.11.2021	17.11.2021	13.11.2021	20.11.20...	
			X	X	3308120	0010	LMPC_HALB_12	MA1	LMPC wst 1	09.11.2021	17:11:00	10.11.2021	17.11.2021	13.11.2021	20.11.20...	
			X		3297217	0010	161	MA1	LMPC wst 1	03.11.2021	06:00:00	03.11.2021	09.11.2021	03.11.2021	12.11.20...	03.11.20...

Planning result

The operations have been deallocated. The gaps have been closed, the subsequent operations have been brought forward.

The operations are brought forward to the date on which the first selected and deallocated operation is started. This does not have to be the current time; the operations can also be brought forward to any time in the future.

The function first deallocates the operations, then it brings forward the subsequent dispatched operations. The operations are connected without gaps.

When bringing forward, the function checks whether the sequence of operations can be adhered to. If the operation sequence cannot be adhered to because bringing forward would cause an operation to start before its predecessor, the function terminates with an error message. Operations that have already been processed up to this point remain in their new positions.

⚠ Restriction

- Moving operations is only possible in one direction. The subsequent operations are brought forward in time.
- Closing the gaps is only intended for a planning scenario in which operations are dispatched to a capacity one after the other. This function is not suitable for the parallel dispatching of operations.
- The sequence of the operations is only checked for dispatched operations. Deallocated operations are not checked because midpoint scheduling automatically adjusts the times of the operations to the dispatched operation.
- For the sequence of operations to be checked, all operations must be open in the planning table. Operations that are not open in the planning table cannot be checked.

- If the work center filter is used, the function cannot recognize the position of the operations at other work centers. If the work center filter is used, the check for the operation sequence does not work. S_WPFLT Work Center Filter [page 418]

You can use the settings to define whether the bringing forward is to take place until the end of the planning horizon or only up to the next gap in the production plan.

→ Tip

This action code can also be used in background processing using a concatenation with S_SETSEL. S_WPFLT Work Center Filter [page 418] Program /LMPC/HJPT Background Processing [page 26]

Related Information

S_APSCG Configuration: Deallocate Selected Operations and Close Gaps

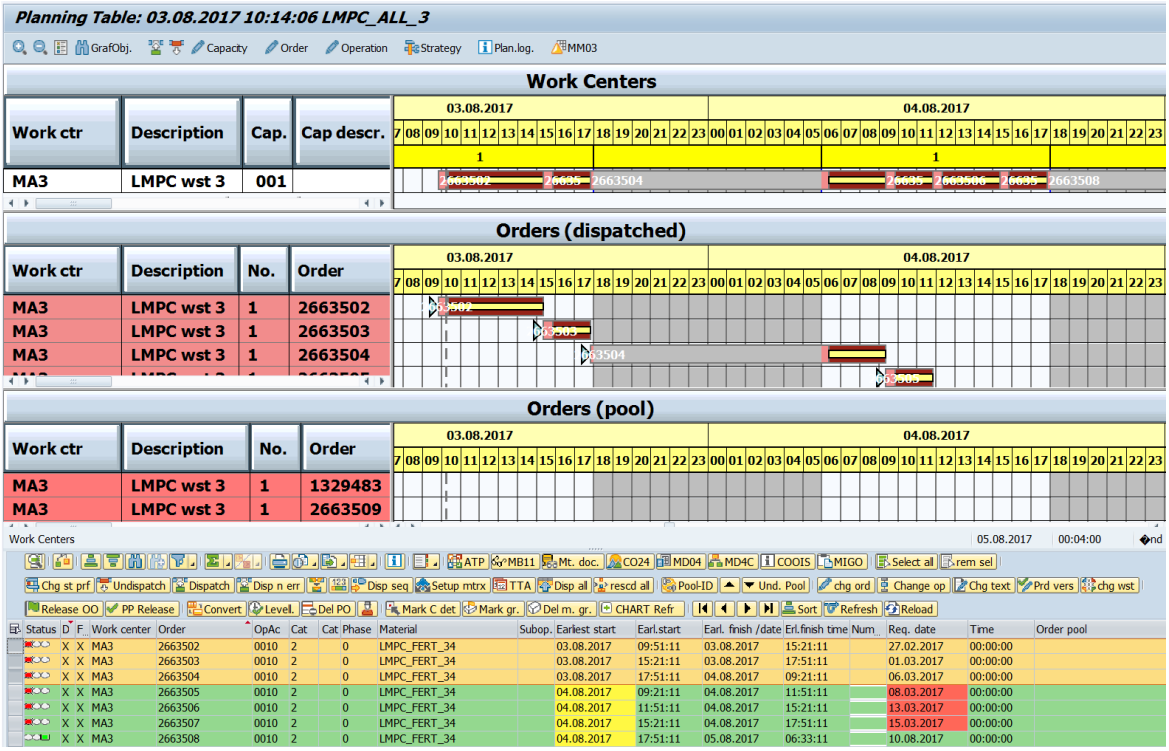
2.6.5.4 S_APSEL Deallocate Selected Operations

Use

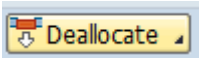
This is the standard function for deallocating order operations. Operations are selected and then deallocated.

Procedure

- Select one or more operations in the ALV Grid.

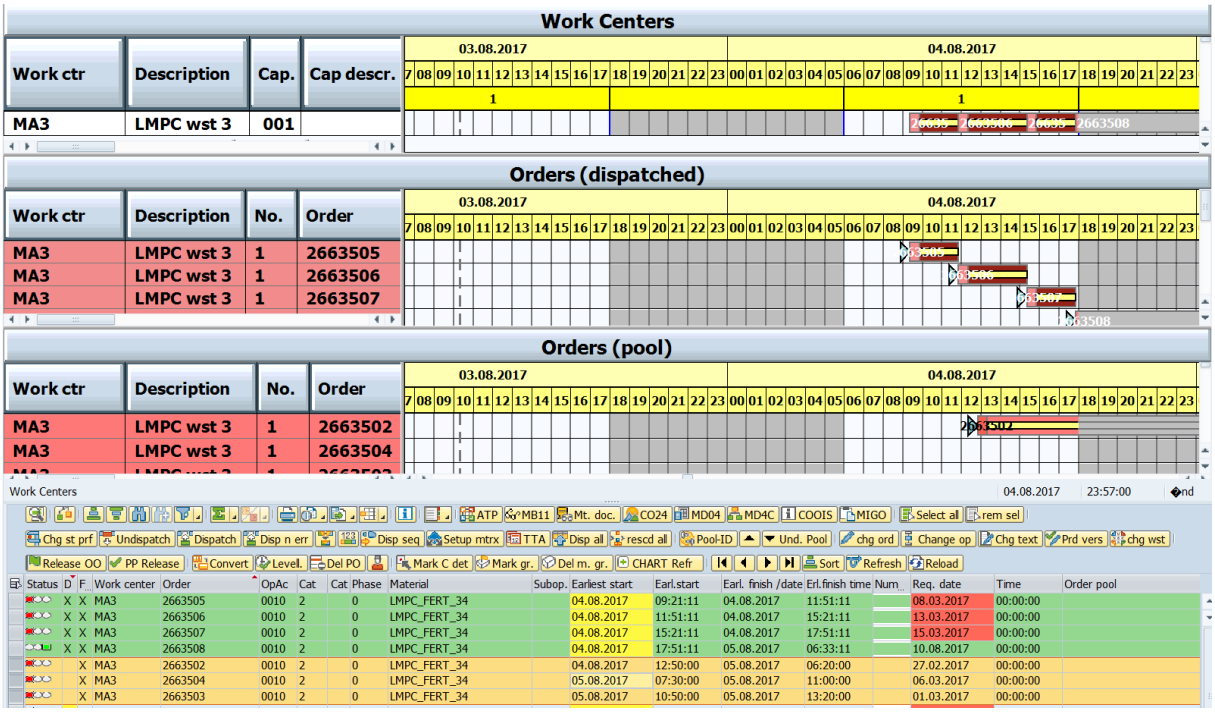


Select Operations

- The charts of the work centers and dispatched orders show the capacity situation of the orders.
- Execute the action code 

(S_APSEL).

Result:



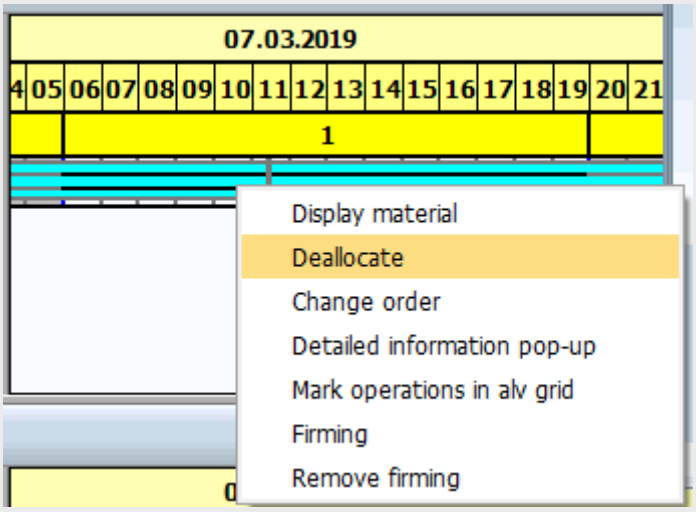
Result of Deallocation

The operations have been deallocated. In the ALV Grid, the orders are now marked as deallocated (flag "dispatched" - 2nd column is not set). The orders are moved down because the dispatched orders are displayed first. In charts 1 (work centers) and 2 (orders dispatched) of the capacity planning table capacities have become free. Chart 3 (orders pool) displays the deallocated orders.

→ Remember

There are other ways of deallocating operations:

- You can deallocate orders by dragging and dropping them from the chart of dispatched orders to a chart of the order pool in the graphic.
- You can also call deallocation from the context menu of a graphic bar.



Context Menu Graphic

- You can also call this action code using a job in background processing to deallocate all operations. Program /LMPC/HJPT Background Processing [page 26]

2.6.5.5 S_AV06 Dispatching Operations Individually

Use

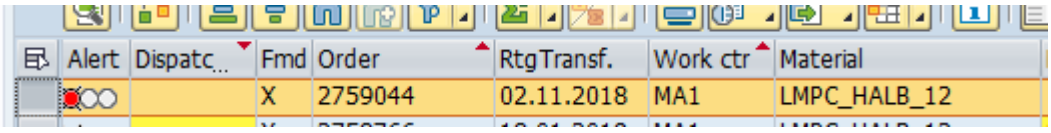
You can use this function to dispatch order operations individually to the next possible point in time.

⚠ Restriction

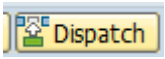
It is not possible to process several operations at the same time.

Procedure

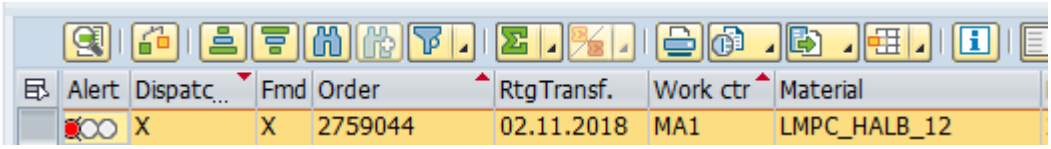
- Select an operation in the ALV Grid.



Select Operation

- Execute the action code 

(S_AV06).
- Result: The operation has been dispatched at the next possible point in time.



Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material
	X	X	2759044	02.11.2018	MA1	LMPC_HALB_12

Result

2.6.5.6 S_AV07 Deallocating Operations Individually

Use

You can use this function to deallocate individual order operations.

> **⚠ Restriction**
>
> It is not possible to process several operations at the same time.

Procedure

- Initial situation:

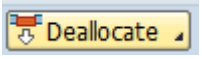
Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start
	X		60007918	27.03.2018	MA1	LMPC_HALB_34	21.12.2018	14:33:07
	X		60008059	29.10.2018	MA1	LMPC_HALB_34	04.01.2019	13:58:07
	X	X	2758763	17.12.2018	MA1	LMPC_HALB_12	04.01.2019	16:53:07
	X	X	2759144	13.12.2018	MA1	LMPC_HALB_34	08.01.2019	12:48:07
	X	X	2759145	13.12.2018	MA1	LMPC_HALB_34	08.01.2019	18:13:07
		X	2759044	02.11.2018	MA1	LMPC_HALB_12	19.12.2018	09:15:00
		X	2758766	18.01.2019	MA1	LMPC_HALB_12	21.12.2018	06:00:00

Situation at Start

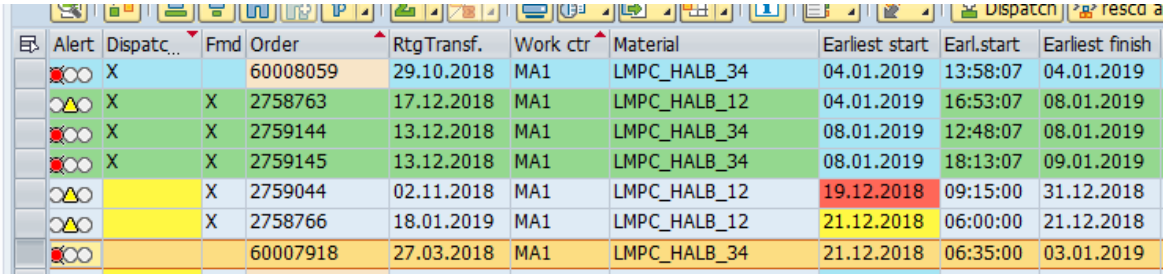
  Several operations are dispatched.
- Select an operation.

Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start
	X		60007918	27.03.2018	MA1	LMPC_HALB_34	21.12.2018	14:33:07
	X		60008059	29.10.2018	MA1	LMPC_HALB_34	04.01.2019	13:58:07
	X	X	2758763	17.12.2018	MA1	LMPC_HALB_12	04.01.2019	16:53:07

Selection

- Execute the action code 

(S_AV07).
- Result: The operation has been deallocated.



Alert	Dispatc...	Frnd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start	Earliest finish
	X		60008059	29.10.2018	MA1	LMPC_HALB_34	04.01.2019	13:58:07	04.01.2019
	X	X	2758763	17.12.2018	MA1	LMPC_HALB_12	04.01.2019	16:53:07	08.01.2019
	X	X	2759144	13.12.2018	MA1	LMPC_HALB_34	08.01.2019	12:48:07	08.01.2019
	X	X	2759145	13.12.2018	MA1	LMPC_HALB_34	08.01.2019	18:13:07	09.01.2019
		X	2759044	02.11.2018	MA1	LMPC_HALB_12	19.12.2018	09:15:00	31.12.2018
		X	2758766	18.01.2019	MA1	LMPC_HALB_12	21.12.2018	06:00:00	21.12.2018
			60007918	27.03.2018	MA1	LMPC_HALB_34	21.12.2018	06:35:00	03.01.2019

Result

2.6.5.7 S_D&D Dispatching Operations with Drag and Drop in the ALV Grid

Use

You can use this function to move order operations not yet dispatched in the ALV Grid between dispatched operations using drag and drop, to then dispatch them there.

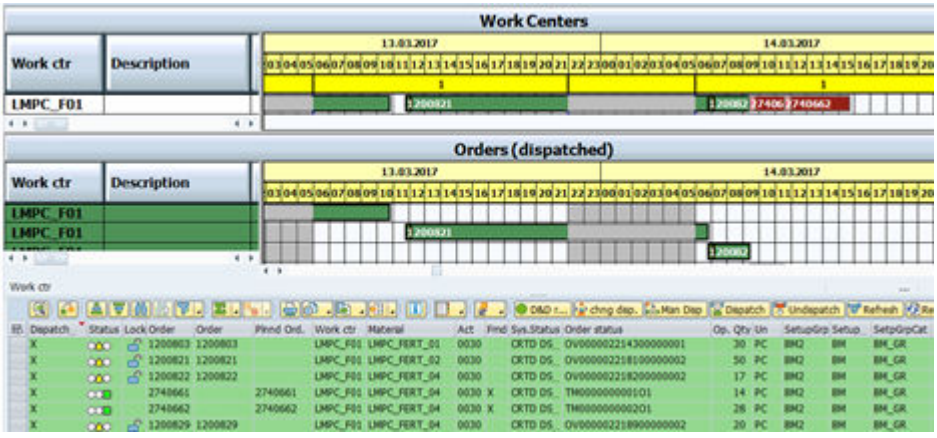
> **⚠ Restriction**
>
> You can only reschedule one operation at a time. If you select and move several operations, only the first operation is dispatched.

Depending on the setting of the action code in Customizing, two planning variants can be realized:

- Immediate dispatch automatically at the point to which the operation was dragged.
- Two-step procedure: First move the operation to the required position, then dispatch by manually triggering the action code.

Procedure

Initial situation:



Initial Situation

A range of operations has already been dispatched.

Select an operation that has not been dispatched and drag it between the dispatched operations.

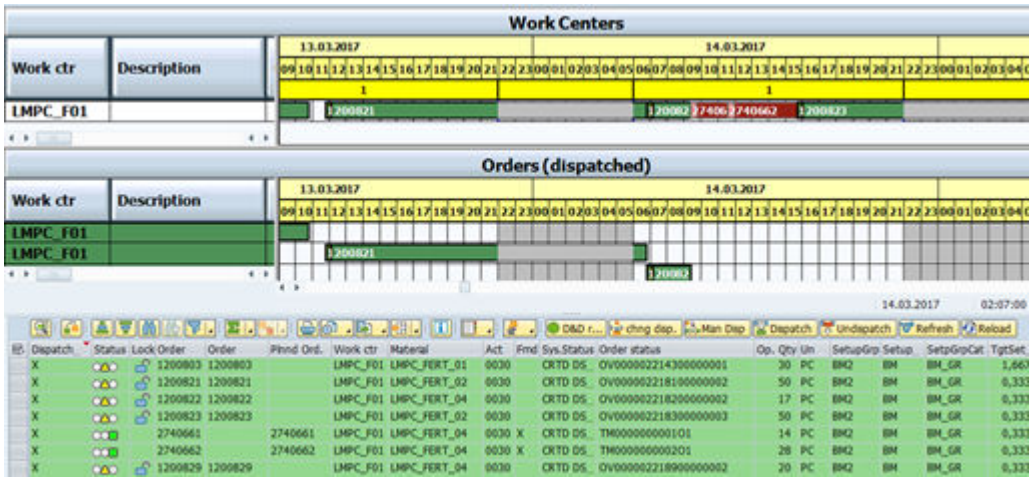
The further behavior of the action code depends on the action code trigger set. The trigger for the action code is set in the LMPC configuration. For instructions on configuring the action code, see the LMPC Configuration Guide. S_D&D Configuration: Dispatching Operations with Drag and Drop in the ALV Grid

> ⚠ Caution
>
> For this action code, drag and drop must be executed in a specific way. This is the only way in which the ALV Grid recognizes that data records have been pulled from one position to another position and reports this information.
>
> When you drag and drop, the data record is first selected with the selection field on the left edge of the ALV Grid. To drag and drop, you then click on any field of the selected row with the mouse, hold the mouse button, and move this field to the desired target row. You release the mouse button when you are in the desired target row.
>
> The data records must not be moved by holding down the selection field. This type of shift does not work for this function.

Immediate Dispatching

If the action code with the trigger “Drag and Drop in the ALV Grid” is set in the context profile, dispatching immediately takes place at the target point. No further action is required by the user. Dispatching is done.

Result:



Result

The operation was inserted into the production plan at the target point. The following operations have been moved. The operation receives the start time of the operation to which it was dragged. The operation to which an operation was dragged is moved and is dispatched immediately after the newly dispatched operation.

With the immediate dispatching setting, operations can also be moved to other items individually and rescheduled immediately. Therefore, this function can be used for both initial dispatching and rescheduling.

There are two planning logics for this function:

- The operations are always scheduled without gaps. If you insert an operation, all subsequent operations are connected without gaps.

- The operation to be inserted is inserted at the desired position. The inserted operation starts at the same time as the operation that was previously at this position. As a result, the operation that was previously dispatched is moved into the future and follows the new operation directly. Other operations that lie further in the future and are not affected by the shift remain where they have already been dispatched. Gaps in the production plan are retained.

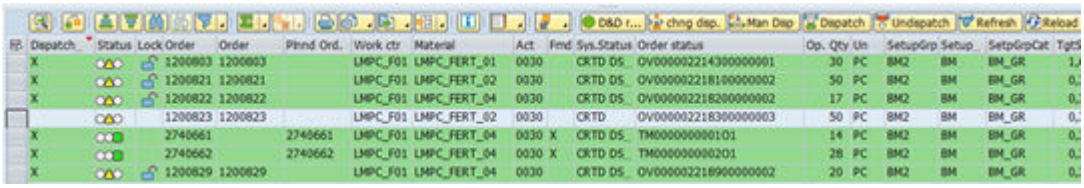
You select the planning logic using a parameter in the configuration.

> ### Note
>
> In the standard delivery of LMPC, the action code is not configured in this way. If you want to use this type of planning, you must first configure this.

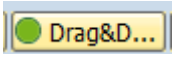
> ### Caution
>
> If this function is set, you can no longer use drag and drop to sort the operations in the ALV Grid. Dispatching is always executed during drag and drop. If dispatching is not possible, drag and drop is not executed and the operation jumps back to its previous position.

Two-Step Procedure

The operation was moved between operations that have already been dispatched using drag and drop:

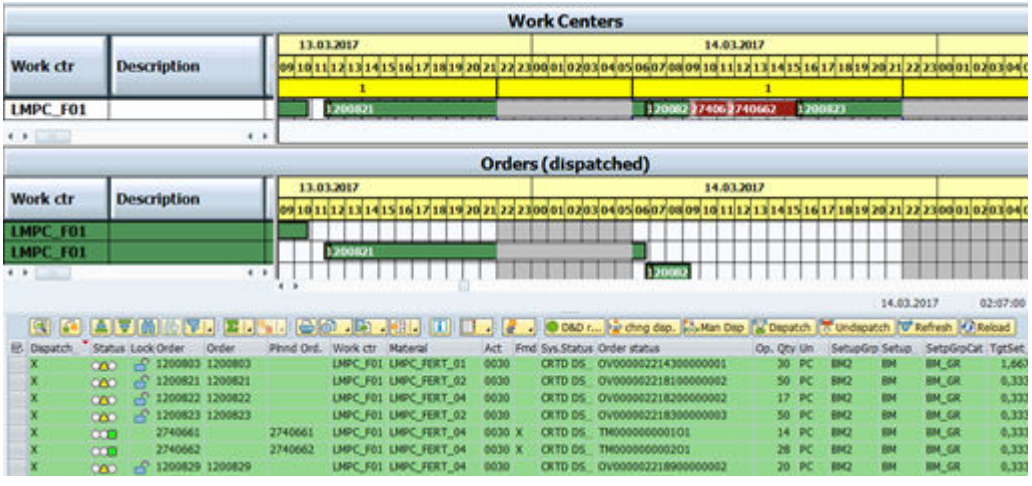


Moving Operations

Now select the moved order and execute the action code 

(S_D&D).

Result:



Result

All orders are dispatched according to the list sequence without having to be deallocated.

⚠ Restriction

- You can only move operations if the work center of the selected operation is identical to the target operation work center to which you are moving this operation. It is only possible to move and dispatch operations within work centers.
- Planning with this action code only works if the operations in the ALV Grid are sorted according to the work center and the start time.
- It is only possible to store operations on the target entry if the target entry has already been dispatched.

2.6.5.8 S_EPALL Dispatch All Operations

Use

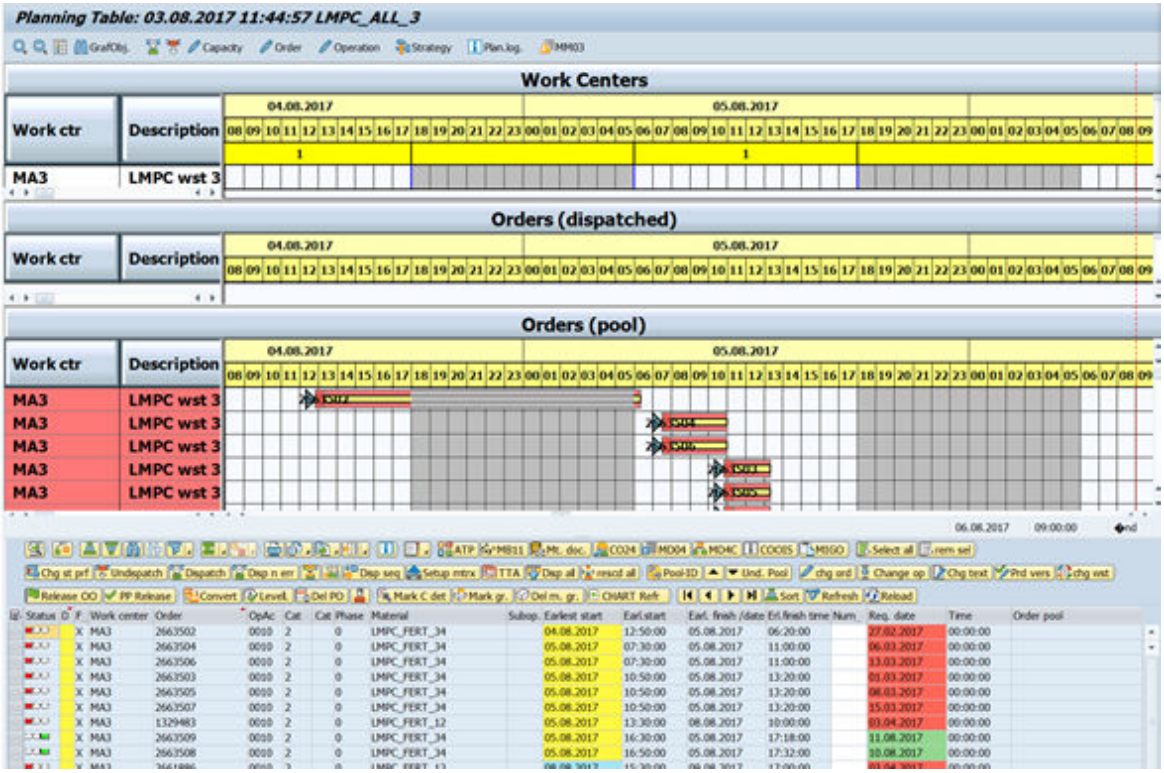
Action code for dispatching all order operations immediately. You can use this function to quickly generate a production plan. It can also be used to dispatch all operations automatically in a nightly planning run. This means that the planner has a suggestion for a production plan the next morning.

All operations that have not yet been dispatched are dispatched at the earliest possible time; a plan without gaps is generated.

.

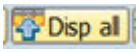
Procedure

- Initial situation:

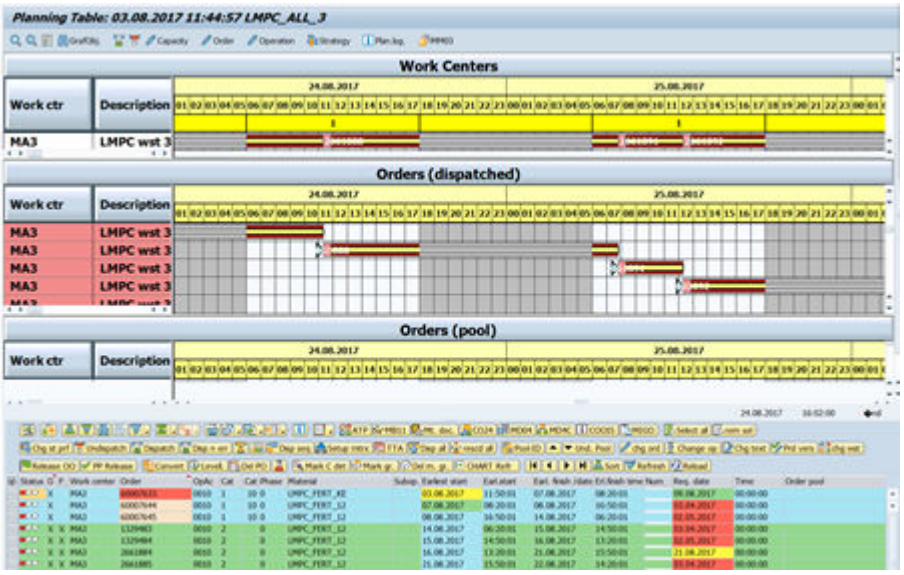


Situation at Start

All operations are in the pool. No operation is dispatched (second column with indicator for dispatching in ALV Grid is empty, no operation in charts 1 and 2).

- You do not need to select operations. The action code 

(S_EPALL) can be executed directly.
- Result:



Dispatching Result

The third chart of the pool is empty. All operations are dispatched. The capacity commitment can be read in the first and second chart of the capacity planning table. In the ALV Grid the dispatching indicator is set in all rows.

→ Tip

- If you remove the option for earliest dispatch in the strategy profile used, the planning function tries to dispatch the operations at the times at which the operations are scheduled. If the operations have not been adjusted since the MRP run, the operations are dispatched as intended by the MRP run. However, the prerequisite for this is that there is sufficient capacity at the work centers. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles
- The action code can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

⚠ Restriction

Since the action code has its own selection routine, the action code limitation function does not work for this action code. Action Code Limits [page 104]

2.6.5.9 S_EPALV Dispatching by Entering Dates in the ALV Grid

Entering Start Times in the ALV Grid

Use

This function enables you to dispatch operations by entering planning dates in the LMPC HJPT ALV Grid.

Either a start date or an end date can be entered. The function can therefore be used for forward and backward scheduling.

Procedure

The ALV Grid of the HJPT planning table contains four input-enabled fields for operation times:

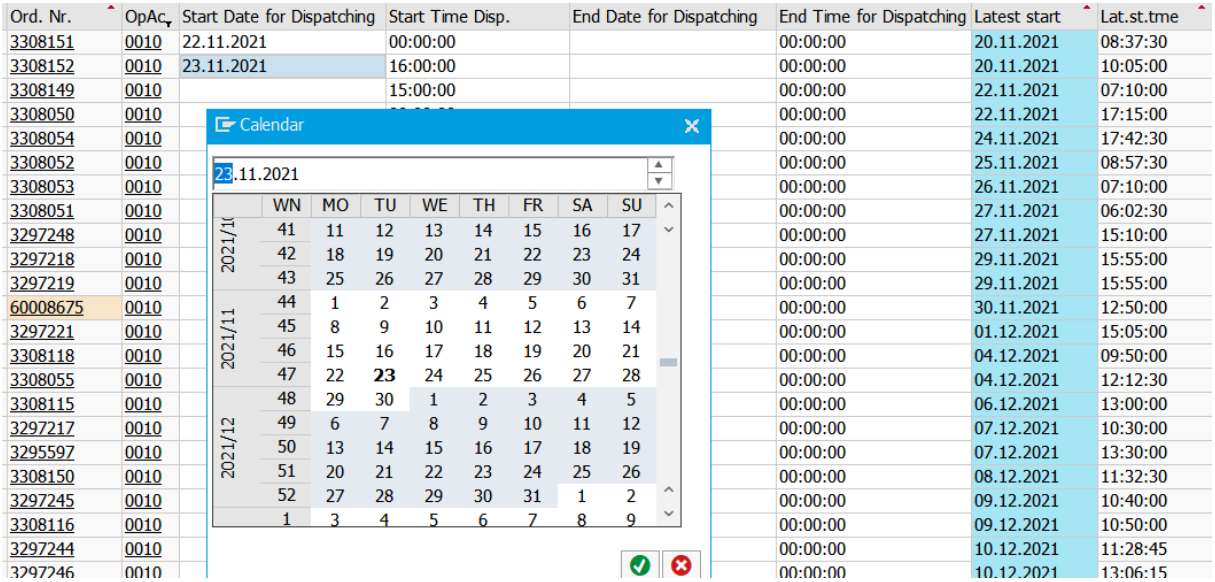
- Start Date for Dispatching
- Start Time for Dispatching
- End Date for Dispatching
- End Time for Dispatching

These fields are in the ALV Grid layout group of the HJPT help fields.

In this example, forward scheduling is used. Therefore, the start times of the operations are entered.

In the input-enabled fields, enter the desired start times for the operations. Multiple fields can be maintained.

You can enter the times directly or use input help. The input help for the date allows you to select the date using a calendar.



Enter a Start Time

If you enter a start date and start time, the operation is dispatched at this time, provided there is sufficient capacity at the work center.

If you only enter a start date, 00:00 is transferred to the dispatching function as the start time. The operation is then dispatched on this day at the earliest possible time.

If you only enter a start time, the latest start date of the operation from the capacity requirement data is automatically used as the date for dispatching.

Operations that have already been dispatched can be rescheduled by entering new planning dates.

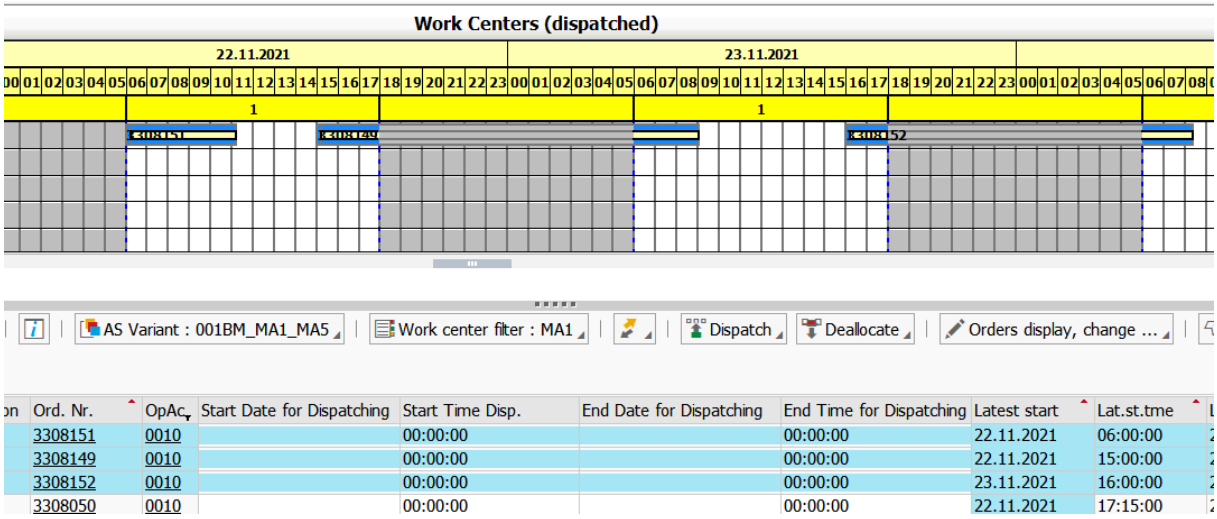
For backward scheduling, the description applies in the same way, with the difference being that if a start time 23:59:59 is missing and if a date is missing, the latest end date of the operation is transferred to the dispatching function. It is not possible to dispatch into the past. If the function recognizes that an operation is to be planned into the past, it either terminates with an error message or dispatches the operation as early as possible. This depends on the settings in the strategy profile.

> → Remember
>
> The times entered are always valid for the latest dates of the operations. Planning in the HJPT planning table always uses the latest date. The operations are dispatched in such a way that the operation dates of the latest dates are set to the desired dates. For more information, see the section on the layout groups.
> Layout Groups [page 68]

Dispatching is only started when you choose the Enter key. This allows you to maintain the times for multiple operations and to start dispatching for all operations with one key. You do not need to select any data records. It is sufficient if the cursor is positioned in one of the fields that are ready for input. All data records are processed that have data in one of the fields for date or time.

Start dispatching by choosing the Enter key.

Result:



Ord. Nr.	OpAc	Start Date for Dispatching	Start Time Disp.	End Date for Dispatching	End Time for Dispatching	Latest start	Lat.st.tme
3308151	0010		00:00:00		00:00:00	22.11.2021	06:00:00
3308149	0010		00:00:00		00:00:00	22.11.2021	15:00:00
3308152	0010		00:00:00		00:00:00	23.11.2021	16:00:00
3308050	0010		00:00:00		00:00:00	22.11.2021	17:15:00

Result of Planning

The operations have been dispatched at the specified start time.

→ Tip

Instead of entering the start times in the fields, manual dispatching can be used as an alternative. S_MANP Manual Dispatching [page 233]

⚠ Caution

The ALV Grid does not check whether data has changed only when you choose the Enter key. The system also checks for changed data when you execute action codes using other triggers, for example, when you click a pushbutton above the ALV Grid. For technical reasons, the check for changed data is always run before all other actions. Therefore, if you "Maintain Times" and do not execute "Enter" and then execute a different action code, the system first dispatches to the maintained data and then executes the other action code. This is a technical restriction. Changed data in the ALV Grid always takes precedence and is always executed.

Related Information

S_EPALV Configuration: Dispatching by Entering Dates in the ALV Grid

2.6.5.10 S_EPCAV Dispatch to Component Availability

Usage

You use this action code to dispatch operations in such a way that an order does not start until the components of the order are available.

This feature has some limitations. Refer to the notes at the end of the chapter.

Procedure

Select one or more operations in the ALV Grid.

G. Alert	Lock	Fmd	Disp..	Ord. Nr.	OpAc	Ord. Q..	UoM	Work ctr	Material	Latest start	Lat.st.tme	Latest finish	Lat.finish
●○○		X		3848481	0010	20	PC	MA3	LMPC_FERT_12	24.12.2025	06:00:00	24.12.2025	13:40:00
○▲○				3869657	0010	20	PC	MA3	LMPC_FERT_12	24.12.2025	06:00:00	24.12.2025	13:40:00
●○○				3869661	0010	30	PC	MA1	LMPC_HALB_12	24.12.2025	06:00:00	24.12.2025	10:30:00
●○○				3869662	0010	30	PC	MA1	LMPC_HALB_12	24.12.2025	06:00:00	24.12.2025	10:30:00

Selection of Operations

Execute the action code CompAv (S_EPCAV).

Result:

G. Alert	Lock	Fmd	Disp..	Ord. Nr.	OpAc	Ord. Q..	UoM	Work ctr	Material	Latest start	Lat.st.tme	Latest finish	Lat.finish
●○○		X	X	3869657	0010	20	PC	MA3	LMPC_FERT_12	30.01.2026	13:40:00	31.01.2026	09:20:00
○▲○		X	X	3848481	0010	20	PC	MA3	LMPC_FERT_12	02.02.2026	06:00:00	02.02.2026	13:40:00
●○○				3869661	0010	30	PC	MA1	LMPC_HALB_12	24.12.2025	06:00:00	24.12.2025	10:30:00
●○○				3869662	0010	30	PC	MA1	LMPC_HALB_12	24.12.2025	06:00:00	24.12.2025	10:30:00

Result

The operations were dispatched on the earliest date on which the components of the orders are available.

With this planning function, orders with suboperations can also be dispatched.

The planning function supports three options for defining the start time of the orders:

- Earliest possible start time.
- Start time at which the first selected operation of an order is currently scheduled.
- Manual entry of the start time by the user.

The option for the start time can be defined in Customizing.

For all options, the planning function always checks whether the components of the respective order are available at the intended start time. If they are not, the specified start time is adjusted to the earliest time of the day at which all components are available.

Logic in detail: The LMPC logic checks the availability of the components using the data of transaction MD04 for the respective component. Only the data of the plant segment of make-to-stock production is checked. First, the orders selected for planning are removed from the data. Afterwards, all receipts are determined. The requirements are deducted from these receipts at the latest. A requirement consumes the quantity that is still available on time. The quantities with their respective receipt dates, which remain after this comparison, can be consumed by the orders that are to be dispatched. As a result, the function can insert as early as possible where sufficient quantities are available and at the same time takes into account the quantities still required for later orders.

⚠ Restriction

- This dispatching function is a simple planning logic. Multilevel planning is not supported and an optimization of dispatching dates is also not supported. This function cannot create a connection using low-level codes, so only operations of one low-level code should be planned for each planning run.
- All operations of an order can be entered in the planning function. The planning function assumes that all operations are sequential and do not overlap. At least the first operation of an order should be

dispatched using the planning function. If the first operation of an order is not dispatched, an order may be dispatched too early because the first selected operation of an order is always dispatched to the earliest date on which the components are available.

- The function always checks all components of an order. If one of the components is not available in the planning period, the selected order operations are not dispatched.
- The components are checked using an LMPC logic. The components are not checked according to the ATP logic.
- The LMPC logic only checks the plant segment of anonymous make-to-stock production. Other segments and planning scenarios are not supported.
- There is no check against the replenishment lead time of components. If the components do not have sufficient stock in transaction MD04, dispatching cannot be performed.
- The operations are processed in the sequence of the selection. No orders are brought forward if, for example, an order has a smaller quantity than another order and could therefore be dispatched earlier because the smaller quantity would be available earlier.
- The logic assumes that all components must always be available at the start of an order. The system does not check for a later availability.
- The function does not return any information about the availability of the components in an application log. If components are not available, dispatching cannot take place.

This function is simple planning logic that does not cover all use cases that can occur in a system. If the function does not cover a use case, this is not an error. If required, you can request an enhancement to the function from the LMPC development team. Constraints and Further Development [page 12]

Related Information

S_EPCAV Configuration: Dispatch to Availability of Components

2.6.5.11 S_EPMSQ Dispatching According to Material Master Field

Use

This action code allows operations to be dispatched according to a sequence defined in the material master. The system reads a Z field that is stored in the database table of the material master for the order material. The sequence of operations is determined according to this Z field.

The action code allows five planning variants:

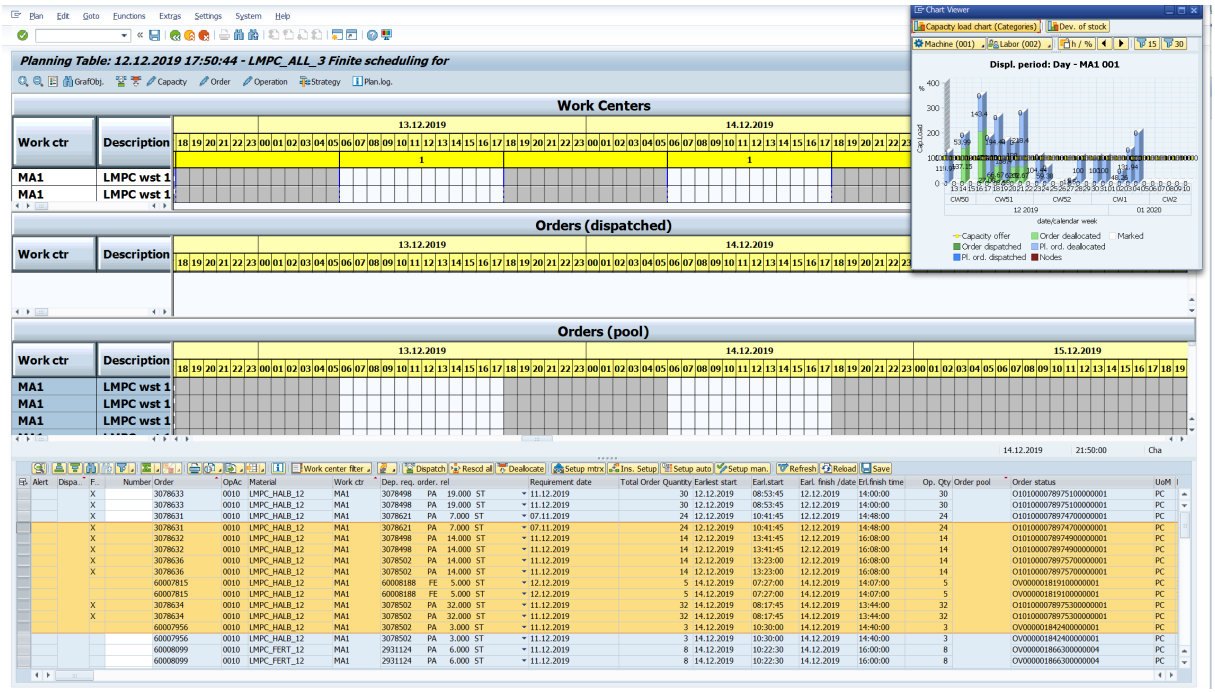
- Assignment of a sequence number by field in the material master.
- Dispatching according to material master sequence at the earliest point in time.
- Dispatching according to material master sequence with entry of a start time.
- Dispatching according to material master sequence with entry of an end time.
- Dispatching according to material master sequence in background processing.

To ensure that the relevant planning variant works correctly, settings must be made in the action code and in the strategy profile. For the explanations for this, see the LMPC Configuration Guide. S_EPMSQ Configuration: Dispatch Using Material Master Sequence.

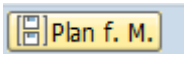
Procedure

Dispatching according to material master sequence at the earliest point in time.

Select the operations that are to be dispatched.

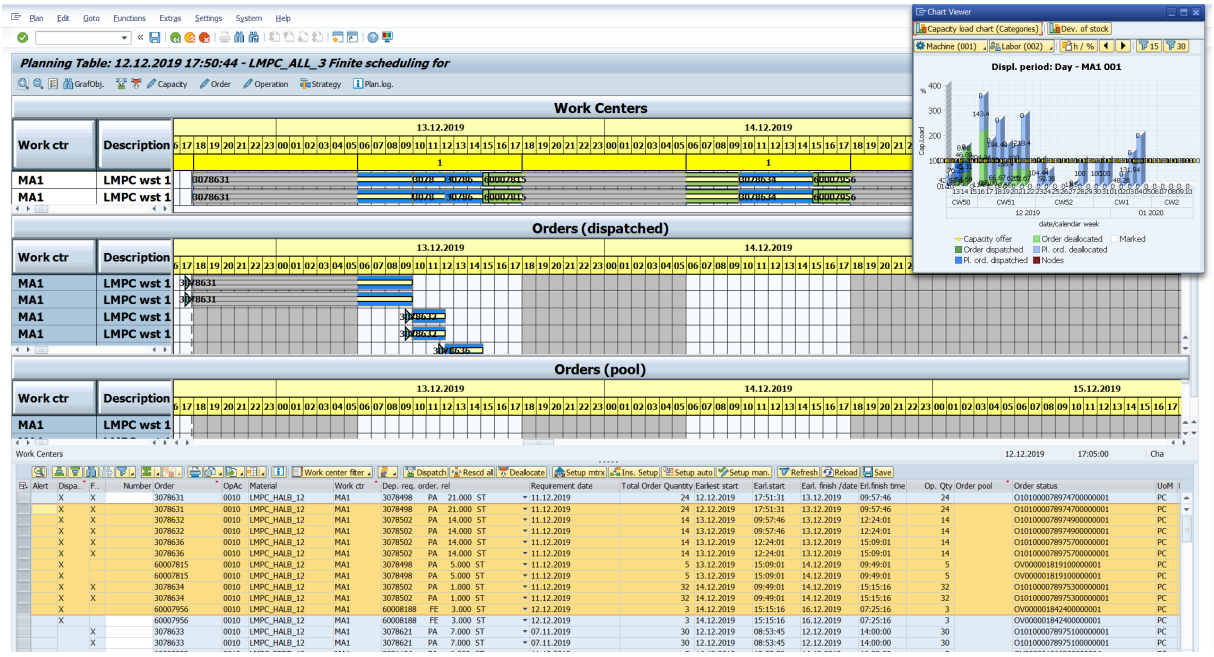


Selection

Execute the action code 

(S_EPMSQ).

Result:

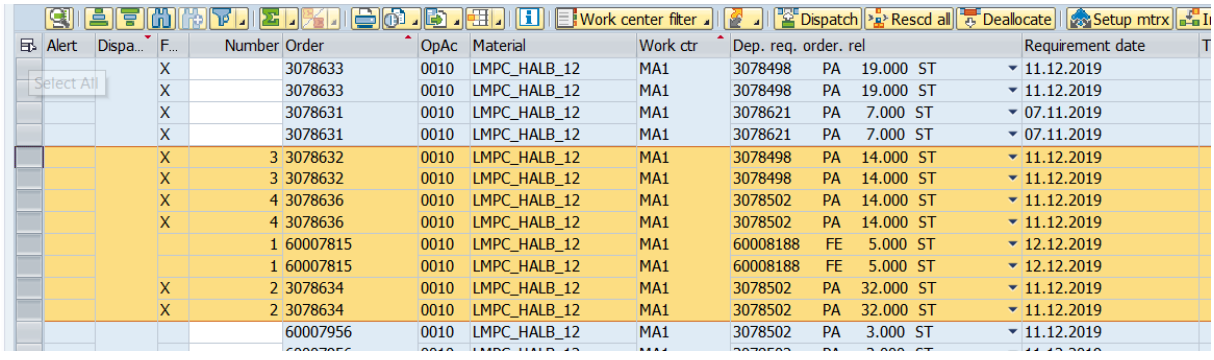


Dispatching Result

The operations have been dispatched according to the order specified in the material master.

Assignment of a sequence number by field in the material master

Instead of direct dispatching, it is only possible to assign a sequence for dispatching. You can do this using the parameter settings for the action code. Once the action code has been executed, the determined sequence is displayed in the field with the column header "Sequence". This field is input-enabled. If the field is not shown, you can find it in the layout group of the HJPT help fields.



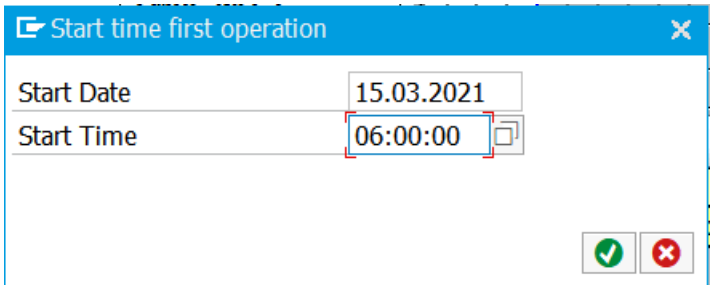
Alert	Dispa...	F...	Number	Order	OpAc	Material	Work ctr	Dep. req. order. rel	Requirement date
		X		3078633	0010	LMPC_HALB_12	MA1	3078498 PA 19.000 ST	11.12.2019
		X		3078633	0010	LMPC_HALB_12	MA1	3078498 PA 19.000 ST	11.12.2019
		X		3078631	0010	LMPC_HALB_12	MA1	3078621 PA 7.000 ST	07.11.2019
		X		3078631	0010	LMPC_HALB_12	MA1	3078621 PA 7.000 ST	07.11.2019
		X	3	3078632	0010	LMPC_HALB_12	MA1	3078498 PA 14.000 ST	11.12.2019
		X	3	3078632	0010	LMPC_HALB_12	MA1	3078498 PA 14.000 ST	11.12.2019
		X	4	3078636	0010	LMPC_HALB_12	MA1	3078502 PA 14.000 ST	11.12.2019
		X	4	3078636	0010	LMPC_HALB_12	MA1	3078502 PA 14.000 ST	11.12.2019
			1	60007815	0010	LMPC_HALB_12	MA1	60008188 FE 5.000 ST	12.12.2019
			1	60007815	0010	LMPC_HALB_12	MA1	60008188 FE 5.000 ST	12.12.2019
		X	2	3078634	0010	LMPC_HALB_12	MA1	3078502 PA 32.000 ST	11.12.2019
		X	2	3078634	0010	LMPC_HALB_12	MA1	3078502 PA 32.000 ST	11.12.2019
				60007956	0010	LMPC_HALB_12	MA1	3078502 PA 3.000 ST	11.12.2019

No Dispatching Sequencing Only

The planner can change this sequence manually. Dispatching can then be performed using the action code S_EPSEQ. S_EPSEQ Dispatch According to the Sequence Entered [page 215]

Manual planning with entry of a start time

The action code can be set in such a way that the user can enter a start time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the start time for the first operation.



Start Time Dialog Box

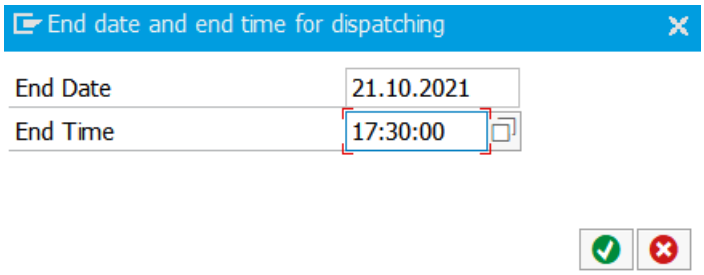
The function dispatches the selected operations in the determined sequence from the field in the material master in such a way that the end time of the predecessor is also the start time for the subsequent operation. The operations are dispatched directly one after the other without gaps.

With this logic, it is also possible to realize a sequence across several work centers. The next operation at a work center does not start until the previous operation has been completed at another work center.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

Manual dispatching with entry of an end time

The action code can be set in such a way that the user can enter an end time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the end time for the last operation.



End Time Dialog Box

The function dispatches the selected operations in the determined sequence from the field in the material master in such a way that the end time of the predecessor is also the start time for the subsequent operation.

The operations are dispatched in such a way that the last operation in the sequence ends on the desired end date.

With this logic, it is also possible to realize a sequence across several work centers. The next operation at a work center does not start until the previous operation has been completed at another work center.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

> → Remember
>
> If the capacity offer is not sufficient and the operations must be dispatched in the past, dispatching terminates and does not dispatch the operations.

Dispatching according to material master sequence in background processing

The action code can be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

2.6.5.12 S_EPNP Dispatching Operations of Networks

Planning Function for Networks

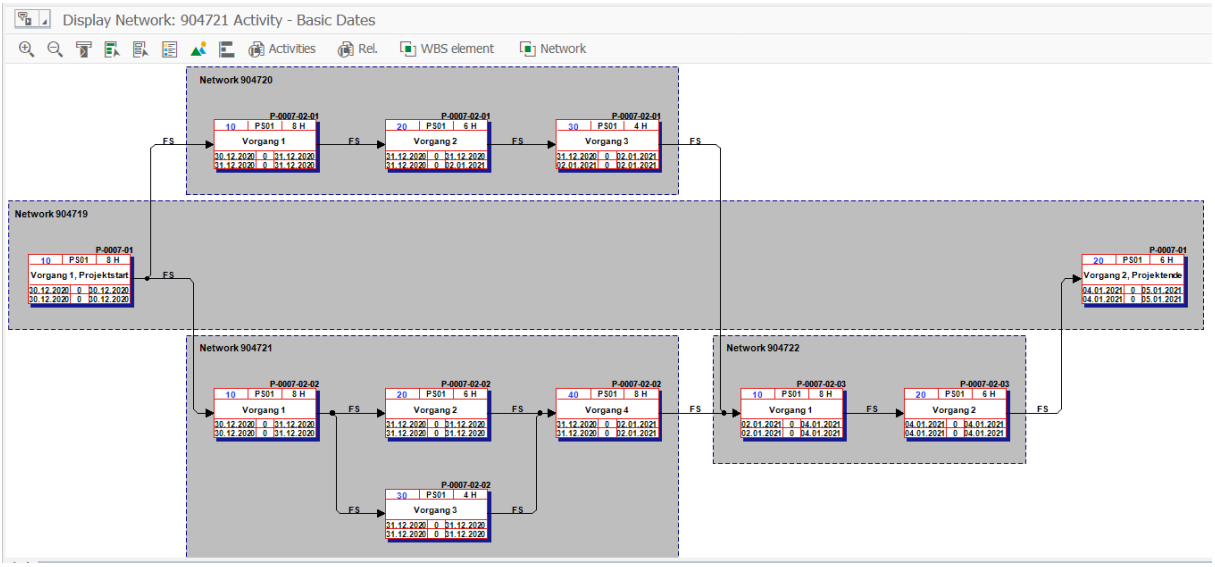
Usage

You can use this action code to dispatch network operations in the correct sequence.

> → Remember
>
> For the planning function to work, the data provider for the PS data must be activated. Data Provider / LMPC/CL_DP_PS_AFAB Relationships [page 489]

Procedure

There is a project with the following networks and operations.



Network Overview Transaction CN23

These operations should be dispatched in the correct sequence.

For each operation of a network, there is a row in the ALV Grid of the HJPT planning table. The operations were scheduled in the correct sequence by the standard SAP system when they were created. The operations are sorted in the ALV Grid by the earliest start date and time. As a result, the first operation of the entire project is first in the ALV Grid.

Select the first operation of the project in the ALV Grid.

Alert	Dis...	Order Number	Oper./Act.	Work center	Earliest start	Earl.start	Earliest finish	Erl.finish	Order pred.	Op. Pred.	Oder succ.	Op. Succ.	L.e.e.Pred	L.e.e.Pred
		904719	0010	MA2	30.12.2020	06:00:00	30.12.2020	14:00:00			904721	0010		00:00:00
		904720	0010	MA3	30.12.2020	14:00:00	31.12.2020	10:00:00	904719	0010	904720	0020	30.12.2020	14:00:00
		904721	0010	MA3	30.12.2020	14:00:00	31.12.2020	10:00:00	904719	0010	904721	0030	30.12.2020	14:00:00
		904720	0020	MA3	31.12.2020	10:00:00	31.12.2020	16:00:00	904720	0010	904720	0030	31.12.2020	10:00:00
		904721	0020	MA3	31.12.2020	10:00:00	31.12.2020	16:00:00	904721	0010	904721	0040	31.12.2020	10:00:00
		904721	0030	MA4	31.12.2020	10:00:00	31.12.2020	14:00:00	904721	0010	904721	0040	31.12.2020	10:00:00
		904720	0030	MA3	31.12.2020	16:00:00	02.01.2021	08:00:00	904720	0020	904722	0010	31.12.2020	16:00:00
		904721	0040	MA3	31.12.2020	16:00:00	02.01.2021	12:00:00	904721	0020	904722	0010	31.12.2020	16:00:00
		904722	0010	MA1	02.01.2021	12:00:00	04.01.2021	10:00:00	904721	0040	904722	0020	02.01.2021	12:00:00
		904722	0020	MA1	04.01.2021	10:00:00	04.01.2021	17:30:00	904722	0010	904719	0020	04.01.2021	10:00:00
		904719	0020	MA2	04.01.2021	17:30:00	05.01.2021	11:30:00	904722	0020			04.01.2021	17:30:00

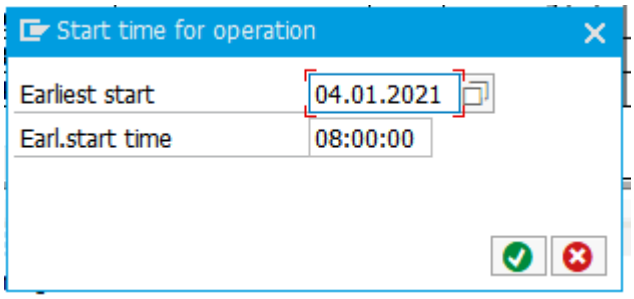
Selection of First Operation

The operations must be dispatched individually in this planning function. If you select more than one operation, only the first operation is dispatched.

> → Tip
>
> You can only dispatch operations that have not yet been dispatched. If the operation has already been dispatched, the function terminates. If you want to reschedule the networks of a project to another time, first deallocate all operations and then start dispatching again.

Execute the action code Disp. NW (S_EPNP).

If you have set manual dispatching, a window appears to query the required start time of the operation.



Query Start Time

The input fields are preset with the scheduled start time of the operation.

If the scheduled start time is already in the past, the current date and time are preset, since earlier dispatching is not possible.

You can enter the desired start time and confirm the window.

If manual dispatching is not set, the current scheduled start time of the operation is transferred to the dispatching function as the start time.

> → Tip
>
> If you do not want the operation to be dispatched at the current scheduled start time, but as early as possible, set the strategy profile accordingly. For details on configuring strategy profiles, see the separate section on strategy profiles. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

Result:

Alert	Dis...	Order Number	Oper./Act.	Work center	Earliest start	Earl.start	Earliest finish	Erl.finish	Order pred.	Op. Pred.	Oder succ.	Op. Succ.	L.e.e.Pred	L.e.e.Pred
	X	904719	0010	MA2	04.01.2021	08:00:00	04.01.2021	16:00:00			904721	0010		00:00:00
		904720	0010	MA3	04.01.2021	16:00:00	05.01.2021	12:00:00	904719	0010	904720	0020	04.01.2021	16:00:00
		904721	0010	MA3	04.01.2021	16:00:00	05.01.2021	12:00:00	904719	0010	904721	0030	04.01.2021	16:00:00
		904720	0020	MA3	05.01.2021	12:00:00	05.01.2021	18:00:00	904720	0010	904720	0030	05.01.2021	12:00:00
		904721	0020	MA3	05.01.2021	12:00:00	05.01.2021	18:00:00	904721	0010	904721	0040	05.01.2021	12:00:00
		904721	0030	MA4	05.01.2021	12:00:00	05.01.2021	16:00:00	904721	0010	904721	0040	05.01.2021	12:00:00
		904720	0030	MA3	07.01.2021	06:00:00	07.01.2021	10:00:00	904720	0020	904722	0010	05.01.2021	18:00:00
		904721	0040	MA3	07.01.2021	06:00:00	07.01.2021	14:00:00	904721	0020	904722	0010	05.01.2021	18:00:00
		904722	0010	MA1	07.01.2021	14:00:00	08.01.2021	12:00:00	904721	0040	904722	0020	07.01.2021	14:00:00
		904722	0020	MA1	08.01.2021	12:00:00	09.01.2021	07:30:00	904722	0010	904719	0020	08.01.2021	12:00:00
		904719	0020	MA2	09.01.2021	07:30:00	09.01.2021	13:30:00	904722	0020			09.01.2021	07:30:00

Result of Dispatching the First Operation

The first operation has been dispatched to the desired start time.

You can see that the scheduled start times of the other operations of the same project have changed. When an operation of a project is dispatched, the times of all other operations in the project are updated automatically. The times at which the operations can be dispatched are stored in the operations.

It does not make sense to dispatch earlier than the updated times, since otherwise the operation sequence cannot be adhered to.

Now select the second operation that has not yet been dispatched.

Alert	Dis...	Order Number	Oper./Act.	Work center	Earliest start	Earl.start	Earliest finish	Erl.finish	Order pred.	Op. Pred.	Oder succ.	Op. Succ.	L.e.e.Pred	L.e.e.Pred
	X	904719	0010	MA2	04.01.2021	08:00:00	04.01.2021	16:00:00			904721	0010		00:00:00
		904720	0010	MA3	04.01.2021	16:00:00	05.01.2021	12:00:00	904719	0010	904720	0020	04.01.2021	16:00:00
		904721	0010	MA3	04.01.2021	16:00:00	05.01.2021	12:00:00	904719	0010	904721	0030	04.01.2021	16:00:00
		904720	0020	MA3	05.01.2021	12:00:00	05.01.2021	18:00:00	904720	0010	904720	0030	05.01.2021	12:00:00
		904721	0020	MA3	05.01.2021	12:00:00	05.01.2021	18:00:00	904721	0010	904721	0040	05.01.2021	12:00:00

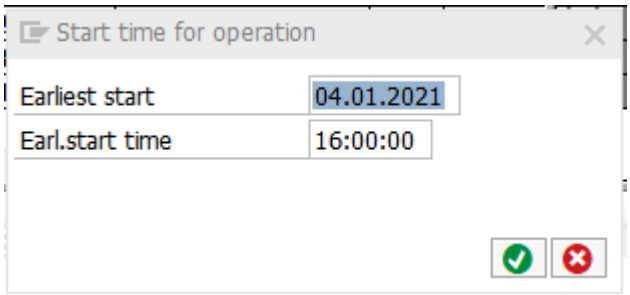
Selection of Second Operation

Run the planning function again.

If manual dispatching was chosen, the window for entering the start time appears again.

The input fields are prefilled with the currently scheduled time of the operation. Dispatching is not possible earlier. If you enter an earlier time, the dispatching function corrects the time to this earliest possible time automatically.

Enter the desired start time.



Start Time of Second Operation

> → Tip
>
> Manual planning is useful if you want to create gaps between the operations and want to dispatch an operation later than specified by scheduling. If you want to dispatch the operations as early as possible, you do not need to activate manual planning. In this case, the operations are dispatched after the scheduled dates, as early as possible.

If you have not set manual planning, the current scheduled time of the operation is transferred to the dispatching function.

Result:

Result of Dispatching of Second Operation

Alert	Dis...	Order Number	Oper./Act.	Work center	Earliest start	Earl.start	Earliest finish	Erl.finish	Order pred.	Op. Pred.	Oder succ.	Op. Succ.	L.e.e.Pred	L.e.e.Pred
	X	904719	0010	MA2	04.01.2021	08:00:00	04.01.2021	16:00:00			904721	0010		00:00:00
	X	904720	0010	MA3	04.01.2021	16:00:00	05.01.2021	12:00:00	904719	0010	904720	0020	04.01.2021	16:00:00
		904721	0010	MA3	04.01.2021	16:00:00	05.01.2021	12:00:00	904719	0010	904721	0030	04.01.2021	16:00:00
		904720	0020	MA3	05.01.2021	12:00:00	05.01.2021	18:00:00	904720	0010	904720	0030	05.01.2021	12:00:00
		904721	0020	MA3	05.01.2021	12:00:00	05.01.2021	18:00:00	904721	0010	904721	0040	05.01.2021	12:00:00
		904721	0030	MA4	05.01.2021	12:00:00	05.01.2021	16:00:00	904721	0010	904721	0040	05.01.2021	12:00:00
		904720	0030	MA3	07.01.2021	06:00:00	07.01.2021	10:00:00	904720	0020	904722	0010	05.01.2021	18:00:00
		904721	0040	MA3	07.01.2021	06:00:00	07.01.2021	14:00:00	904721	0020	904722	0010	05.01.2021	18:00:00
		904722	0010	MA1	07.01.2021	14:00:00	08.01.2021	12:00:00	904721	0040	904722	0020	07.01.2021	14:00:00
		904722	0020	MA1	08.01.2021	12:00:00	09.01.2021	07:30:00	904722	0010	904719	0020	08.01.2021	12:00:00
		904719	0020	MA2	09.01.2021	07:30:00	09.01.2021	13:30:00	904722	0020			09.01.2021	07:30:00

The second operation is dispatched.

You can use the relationship fields to check that dispatching is correct. The explanations for these fields can be found in the chapter on the data provider. Data Provider /LMPC/CL_DP_PS_AFAB Relationships [page 489]

Repeat these steps until all operations of the project are dispatched at the desired times.

> ⓘ Note
>
> This function was developed to enable dispatching in the correct sequence. Follow the procedure described above. If operations are dispatched before their predecessors have been dispatched, this can lead to an incorrect sequence. The planning function does not check for a correct sequence and cannot correct user errors.

Related Information

S_EPNP Configuration: Dispatch Networks

2.6.5.13 S_EPRQD Dispatch on Requirement Date

Use

You can use this action code to dispatch orders in such a way that the material receipt occurs on time for the requirement date.

In this planning function, dispatching does not take place for each operation, but always for all operations of an order.

The planning function dispatches the orders as late as possible. The idea is to only produce a material when it is needed, thus avoiding unnecessary warehousing.

Only operations that have a requirement date are dispatched. Operations without dates are not dispatched.

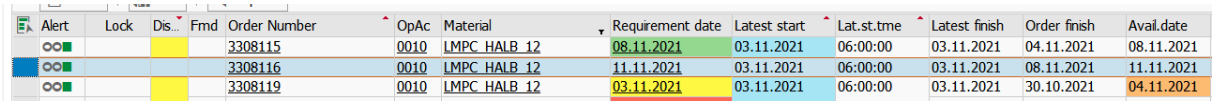
> → Tip
>
> Using settings for the action code, dispatching can also take place for the rescheduling date instead of for the requirement date. The documentation only describes dispatching on the requirement date. The action

code is used in the same way for the rescheduling date. S_EPRQD Configuration: Dispatch on Requirement Date

For the differences between the requirement date and the rescheduling date, see the section on the data provider /LMPC/CL_DP_BED. Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]

Procedure

Select an operation of an order.



Alert	Lock	Dis..	Fmd	Order Number	OpAc	Material	Requirement date	Latest start	Lat.st.tme	Latest finish	Order finish	Avail.date
				3308115	0010	LMPC_HALB_12	08.11.2021	03.11.2021	06:00:00	03.11.2021	04.11.2021	08.11.2021
				3308116	0010	LMPC_HALB_12	11.11.2021	03.11.2021	06:00:00	03.11.2021	08.11.2021	11.11.2021
				3308119	0010	LMPC_HALB_12	03.11.2021	03.11.2021	06:00:00	03.11.2021	30.10.2021	04.11.2021

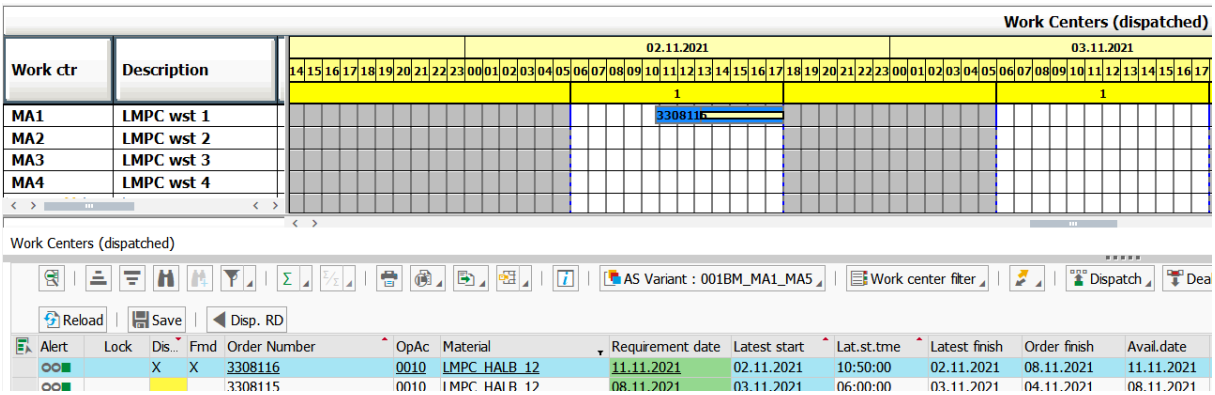
Select Operation

In this example, the requirement date for the order is 11/11/2021.

Execute the action code 

(S_EPRQD).

Result:



Alert	Lock	Dis..	Fmd	Order Number	OpAc	Material	Requirement date	Latest start	Lat.st.tme	Latest finish	Order finish	Avail.date
		X	X	3308116	0010	LMPC_HALB_12	11.11.2021	02.11.2021	10:50:00	02.11.2021	08.11.2021	11.11.2021
				3308115	0010	LMPC_HALB_12	08.11.2021	03.11.2021	06:00:00	03.11.2021	04.11.2021	08.11.2021

Planning result

The order consists of only one operation. This operation has been dispatched in time so that the MRP availability of the material is on 11/11/2021. The requirement date was met exactly. For this, the operation had to be dispatched at the end of the day on November 2, 2021.

It is possible to dispatch several orders at the same time. For each order, it is sufficient to select one operation of an order. The function automatically reads the other operations of the order that are also open in the planning table.

If several orders are transferred to planning, the orders are presorted first. Orders with an earlier requirement date are processed first. This follows the assumption that earlier orders are more important than later orders. The closer a requirement date is, the more urgent production becomes.

For orders with the same requirement date, the orders scheduled later are processed first. Since the function searches backwards for dispatching dates from the requirements date, earlier scheduled orders receive earlier dates than orders scheduled later. Since the orders scheduled later are processed first, they occupy the later dates. For the orders scheduled earlier that are processed later, only earlier capacity offers are left.

If required, you can use parameters in Customizing to set a different sorting.

→ Tip

The function also supports the dispatching of operations with parallel suboperations and the use of several individual capacities per capacity. When using several individual capacities, as many operations can be dispatched in parallel to the capacities as individual capacities exist. To do this, the indicator for multiple loading at the work center must be set.

Planning Logic

For dispatching, the function calculates a date on which the operations must end for the receipt to be on time.

For materials without additional times such as goods receipt processing time and float after production, this is the last free capacity requirement on the day before the requirement date. For the requirement date, it is assumed that the material must be available at 0:00 on the morning of the requirement date, so the operations of the order are then dispatched in such a way that they lie on the latest date on the previous day. For operations without additional times, the requirements date is therefore not equal to the MRP availability that is displayed in this planning situation on the day before the requirements date.

For materials with additional times, the function subtracts the goods receipt processing time and the float after production from the requirement date.

The float after production is read for planned orders from the scheduling margin key that is defined in the master data for the material. For production or process orders, the float after production is read from the respective order.

You can use the settings for the function to specify that the safety time is also subtracted. This results in a date on which production must be completed (= net requirements date Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]).

For dispatching, the calculated date is transferred to the planning function that performs dispatching using backward scheduling. If there is not sufficient capacity offer at the work center, the function changes the search direction to forward scheduling and thus finds the next possible dispatching date.

⚠ Restriction

- The planning function runs correctly only if all operations of an order are open in the planning table and are dispatched using the dispatching function. Only operations that are open in the planning table are dispatched. If operations are not open in the planning table, the order may be dispatched too late because, for example, the last operation is overlooked.
- The function can only plan orders whose operations are sequential. Parallel operations cannot be taken into account. Exception: Suboperations for an operation can be planned in parallel.
- This function checks the available capacity at the work center for each operation. This function can only dispatch finitely. Infinite planning is not possible with this function. Also note the restrictions in the section on the settings for the master data of work centers. Work Center
- If several operations of different orders are to be on a capacity in parallel, the number of individual capacities must be increased. There can be as many operations in parallel as individual capacities are available.
- Since the function takes into account the available capacity at the work center, it is not possible to ensure that the requirement date can always be met. The function only calculates a date on which an order is to be dispatched, whether this date can be realized, lies on the available capacity offer.
- The planning function is a heuristic and processes the operations of the orders sequentially. Sequential processing with limited capacity can result in gaps between the operations that cannot be occupied by other operations. Gaps can only be filled if they are large enough for an operation. Since operations

that have been placed once are no longer moved, gaps that are too small for an operation cannot be filled. This is the essence of a heuristic. This planning function is not an optimization that can calculate an optimal placement of the operations across all orders.

- The function dispatches operations as close as possible to the requirement date exactly where free capacity is available. This procedure creates gaps in the production plan. The aim of the function is to dispatch as close as possible to the requirements date. It is not the aim of generating a production plan without gaps. A production plan without gaps cannot be created with this function.
- The function dispatches operations where free capacity is available. It cannot be ensured that operations of an order are close to each other after dispatching.
- When planning orders for make-to-stock production, note the following: Since the requirement date is updated for each planning activity, the requirement date may have changed after dispatching. Due to a shift in the sequence of the orders, this order may now be assigned to a different requirement date. For details on calculating the requirement date, see the section on the data provider /LMPC/CL_DP_BED. Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
- When dispatching, the float after production from the scheduling margin key and the goods receipt processing time are also taken into account. The function uses the factory calendar of the plant for these days. The factory calendar of the work center should have the same workdays as the factory calendar of the plant. The capacity offer at the work center must match the working days of the factory calendar of the plant. Days that are declared working days in the factory calendar of the plant must also be declared working days in the factory calendar of the work center. Otherwise, the goods receipt processing time and the float after production from the scheduling margin key may be calculated incorrectly.
- Wait times between operations cannot be taken into account. Operations with wait times between the operations must not be processed with this function; incorrect dispatching dates may occur.
- If there is an external lock on one of the selected orders, the planning function terminates. Externally locked orders are not skipped. The planner must ensure that no orders are locked that are placed in the planning function.
- This function does not enable manual planning for which the planner can assign an end time for the operations. The action code S_MANP can be used for the entry of an end time. S_MANP Manual Dispatching [page 233]
- **This function does not execute multilevel planning using several low-level codes.** The function only tries to dispatch the orders for the requirements dates that were calculated before the function was executed. The relationships of the orders across the low-level codes are not taken into account. If orders of different low-level codes are processed by the function, the planning function does not take into account whether the requirement dates of the orders of one low-level code shift due to the dispatching of orders at another low-level code. If you want to use multilevel planning across several low-level codes, use the action code S_EPML. S_EPML Multilevel Planning [page 323]

→ Tip

The function can also be used for automatic dispatching in the background. Program /LMPC/HJPT Background Processing [page 26]

Related Information

S_EPRQD Configuration: Dispatch on Requirement Date

2.6.5.14 S_EPSEL Dispatch Selected Operations

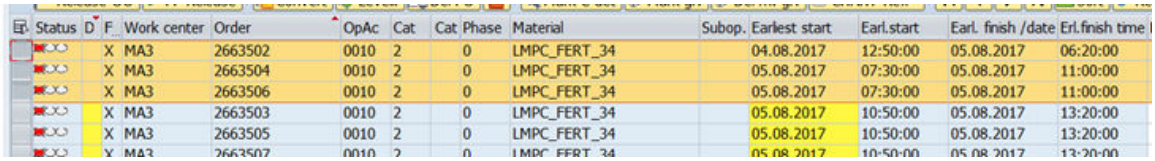
Use

The selected operations of the orders are dispatched at the earliest possible time. This ensures seamless planning. The capacities of the work centers are utilized fully.

In the standard delivery, the function is set in such a way that the operations that are dispatched are not inserted. They are placed at the earliest possible location where sufficient capacity is available. Therefore, a plan without gaps can only be achieved if the capacity is empty before dispatching.

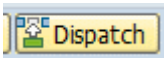
Procedure

- Select the desired operations in the ALV Grid.

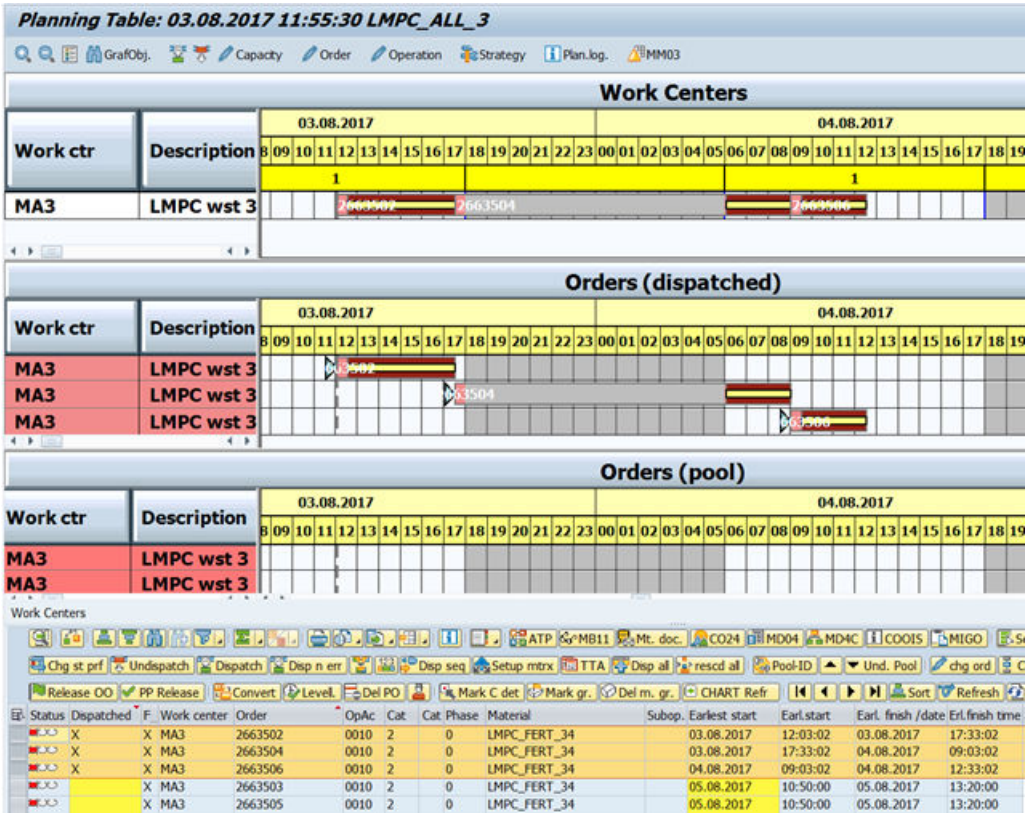


Status	D	F	Work center	Order	OpAc	Cat	Cat	Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time
		X	MA3	2663502	0010	2		0	LMPC_FERT_34		04.08.2017	12:50:00	05.08.2017	06:20:00
		X	MA3	2663504	0010	2		0	LMPC_FERT_34		05.08.2017	07:30:00	05.08.2017	11:00:00
		X	MA3	2663506	0010	2		0	LMPC_FERT_34		05.08.2017	07:30:00	05.08.2017	11:00:00
		X	MA3	2663503	0010	2		0	LMPC_FERT_34		05.08.2017	10:50:00	05.08.2017	13:20:00
		X	MA3	2663505	0010	2		0	LMPC_FERT_34		05.08.2017	10:50:00	05.08.2017	13:20:00

Selection of Operations

- Execute the action code 

(S_EPSEL).
- Result:



Dispatching Result

In chart 2, you can see the current timeline 2 as a vertical line. All operations are dispatched without gaps at the earliest point in time.

→ Tip

- If you want to use this action code to dispatch multiple operations of the same order, the setting for observing the operation sequence must be activated in the strategy profile so that the operations are dispatched one after the other and not in parallel. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles
- The function can be used for background processing. Program /LMPC/HJPT Background Processing [page 26]
- The function contains additional logic for operations with timetable allocation. The function recognizes that the operations have a timetable allocation and schedules these operations using the strategy profile for timetable dispatching, which is maintained per parameter in the action code. For operations with timetable allocation, dispatching does not take place on the earliest date, but on the date that the timetable allocation specifies. For more information, see the description of the LMPC timetable. S_FPL Dispatch by LMPC Timetable [page 223]

2.6.5.15 S_EPSELF Dispatch Selected Orders Without Errors

This action code has the same processing logic as the action code S_EPSEL. The difference is in the strategy profile used for dispatching. Here, you select the “Cancel dispatching due to error” indicator. Meaning that if errors occur during dispatching, the respective order is not dispatched.

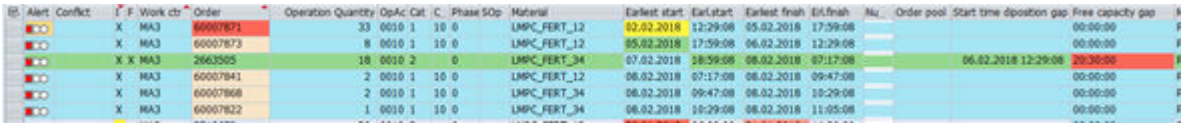
2.6.5.16 S_EPSELL Dispatching with Check on Gaps and Pool Orders

Use

You use this function to dispatch orders into gaps.

Procedure

Initial situation:

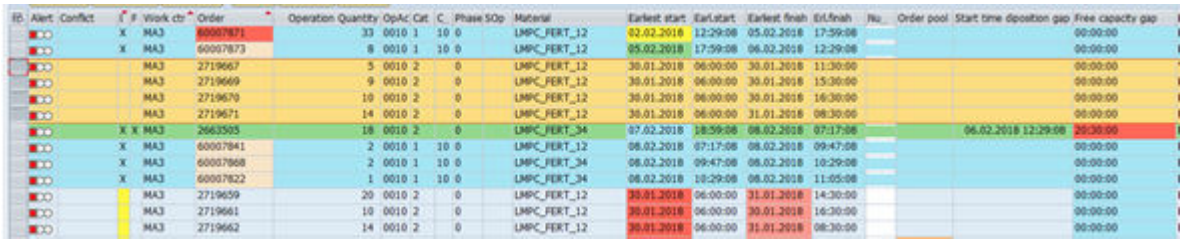


HJPT Planning Table Before Dispatch

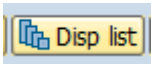
The operations in the ALV Grid are sorted according to the start time and the work center. There are dispatched operations. There are gaps between operations with free capacity.

In the column **Start time disposition gap**, the start time of the gap can be read. The column **Free capacity gap** displays the free capacity.

The planner uses drag and drop to drag order operations that have not yet been dispatched to the place with the gap to fill this gap. The shifted operations belong to the same work center as the operation that displays a gap.

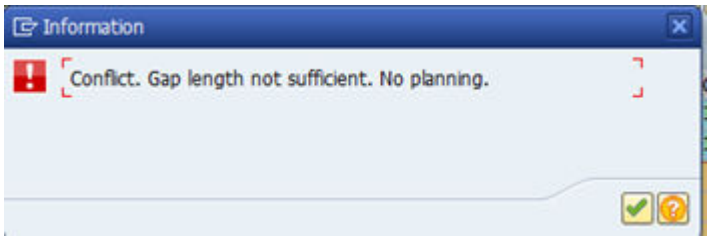


Moving Orders Using Drag and Drop

The shifted orders are highlighted and the action code 

(S_EPSELL) is executed.

The function now checks whether the capacity requirements of the operations fit into the planning gap. If the gap is not large enough, the system displays an error message and aborts planning.



Error Message

If the gap was large enough, the operations will be dispatched. The function determines the end of the capacity requirement of the predecessor order operation and dispatches the operations into the gap at this time. If the operations have been moved to the first position in the ALV Grid, no predecessor can be determined. In this case, the current date and time are transferred to the planning function as the start time for the operations. A gap check is also performed in this case.

If the predecessor operation ends at a time that is in the past, then the current date and time are used as the start time for dispatching. It is not possible to dispatch into the past.

The function can also process pool orders. If pool orders are to be processed, only orders from one order pool can be dispatched. It is sufficient to move one order operation of an order pool. The other related operations are read automatically.

⚠ Restriction

- The operations to be dispatched must be in a single block, only then can they process the function. This means that the operations in the ALV Grid must be directly one after the other.
- The function is always oriented to the operation that is directly before the new operations to be dispatched in the ALV Grid. The size of the dispatching gap is read from this operation.
- You can only dispatch operations that belong to the same work center.
- Since the start time and the work center are relevant for this planning function, it is recommended that you sort the ALV Grid according to the start time and the work center of the operations.

→ Remember

You use the Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476] to calculate planning gaps.

2.6.5.17 S_EPSELX Dispatching Insert in Gaps with and Without Pool Orders

Use

This function enables order operations to be inserted between dispatched orders or to be inserted at the beginning of planning. The action code works in a similar way to the action code S_EPSELL, except that there is no gap check.

Procedure

Initial situation:

Alert	Conflict	I	F	Work ctr	Order	Operation Quantity	OpAc	Cat	C_	Phase SOp	Material	Earliest start	EarlStart	Earliest finish	ErlFinish
		X		MA3	60007871	33	0010	1	10	0	LMPC_FERT_12	02.02.2018	13:42:01	05.02.2018	19:12:01
		X		MA3	60007873	8	0010	1	10	0	LMPC_FERT_12	05.02.2018	19:12:01	06.02.2018	13:42:01
		X	X	MA3	2663505	18	0010	2		0	LMPC_FERT_34	06.02.2018	13:42:01	06.02.2018	16:00:01
		X		MA3	60007841	2	0010	1	10	0	LMPC_FERT_12	06.02.2018	16:00:01	06.02.2018	18:30:01
		X		MA3	60007868	2	0010	1	10	0	LMPC_FERT_34	06.02.2018	18:30:01	06.02.2018	19:12:01
		X		MA3	60007822	1	0010	1	10	0	LMPC_FERT_34	06.02.2018	19:12:01	06.02.2018	19:48:01

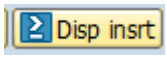
ALV Grid Before Planning

Operations are dispatched. The operations are sorted by work center, start date, and start time.

One or more operations are dragged and dropped either at the beginning of planning or between dispatched operations.

Alert	Conflict	I	F	Work ctr	Order	Operation Quantity	OpAc	Cat	C_	Phase SOp	Material	Earliest start	EarlStart	Earliest finish	ErlFinish
		X		MA3	60007871	33	0010	1	10	0	LMPC_FERT_12	02.02.2018	13:42:01	05.02.2018	19:12:01
		X		MA3	60007873	8	0010	1	10	0	LMPC_FERT_12	05.02.2018	19:12:01	06.02.2018	13:42:01
		X	X	MA3	2663505	18	0010	2		0	LMPC_FERT_34	06.02.2018	13:42:01	06.02.2018	16:00:01
				MA3	2719667	5	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	30.01.2018	11:30:00
				MA3	2719669	9	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	30.01.2018	15:30:00
				MA3	2719670	10	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	30.01.2018	16:30:00
				MA3	2719671	14	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	31.01.2018	08:30:00
		X		MA3	60007841	2	0010	1	10	0	LMPC_FERT_12	06.02.2018	16:00:01	06.02.2018	18:30:01
		X		MA3	60007868	2	0010	1	10	0	LMPC_FERT_34	06.02.2018	18:30:01	06.02.2018	19:12:01
		X		MA3	60007822	1	0010	1	10	0	LMPC_FERT_34	06.02.2018	19:12:01	06.02.2018	19:48:01

Moving Orders to a New Position Using Drag and Drop

The shifted operations are highlighted and the action code 

(S_EPSELX) is executed.

Result:

Alert	Conflict	I	F	Work ctr	Order	Operation Quantity	OpAc	Cat	C_	Phase SOp	Material	Earliest start	EarlStart	Earliest finish	ErlFinish
		X		MA3	60007871	33	0010	1	10	0	LMPC_FERT_12	02.02.2018	13:42:01	05.02.2018	19:12:01
		X		MA3	60007873	8	0010	1	10	0	LMPC_FERT_12	05.02.2018	19:12:01	06.02.2018	13:42:01
		X	X	MA3	2663505	18	0010	2		0	LMPC_FERT_34	06.02.2018	13:42:01	06.02.2018	16:00:01
		X	X	MA3	2719667	5	0010	2		0	LMPC_FERT_12	06.02.2018	16:00:01	07.02.2018	07:30:01
		X	X	MA3	2719669	9	0010	2		0	LMPC_FERT_12	07.02.2018	07:30:01	07.02.2018	17:00:01
		X	X	MA3	2719670	10	0010	2		0	LMPC_FERT_12	07.02.2018	17:00:01	08.02.2018	13:30:01
		X	X	MA3	2719671	14	0010	2		0	LMPC_FERT_12	08.02.2018	13:30:01	09.02.2018	14:00:01
		X		MA3	60007841	2	0010	1	10	0	LMPC_FERT_12	09.02.2018	14:00:01	09.02.2018	16:30:01
		X		MA3	60007868	2	0010	1	10	0	LMPC_FERT_34	09.02.2018	16:30:01	09.02.2018	17:12:01
		X		MA3	60007822	1	0010	1	10	0	LMPC_FERT_34	09.02.2018	17:12:01	09.02.2018	17:48:01
				MA3	2719659	20	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	31.01.2018	14:30:00
				MA3	2719661	10	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	30.01.2018	16:30:00
				MA3	2719662	14	0010	2		0	LMPC_FERT_12	30.01.2018	06:00:00	31.01.2018	08:30:00

Dispatching Result

The order operations have been dispatched at the designated position.

The function determines the end of the capacity requirement of the immediately preceding operation at the work center and dispatches the orders for this time. The orders are inserted and the subsequent operations moved.

If the orders have been moved to the first position, no predecessor can be determined. In this case, the current date and time are transferred to the planning function as the start time for the orders.

If the predecessor ends at a time that is in the past, then the start time is the current date and time for dispatching. It is not possible to dispatch into the past.

The function can also process pool orders. If pool orders are to be processed, only orders from one order pool can be dispatched. It is sufficient to move one order operation of an order pool. The other related operations are read automatically.

The operations should be sorted by work center and start time in the ALV Grid, but this is not necessary. The function is always based on the previous order of the same capacity.

If the operations to be dispatched are dragged before operations already in the past, these dispatched operations are automatically included in the list of operations to be scheduled. Thus, these operations are rescheduled after the new orders to be dispatched. The production plan is shifted.

> ⚠ Restriction
>
> The operations to be dispatched must be in a single block, only then can they be processed by the function.

2.6.5.18 S_EPSELT Dispatching for Date

Dispatching operations without changing production times

Use

You can use this action code to dispatch the selected operations to the times at which the order is currently scheduled.

For example, if you want to dispatch the orders in the same way that the MRP run scheduled the orders, you do not have to do anything more than dispatch the orders after creation by the MRP run with this action code. This can also be done using an automatic nightly planning run with program /LMPC/HJPT.

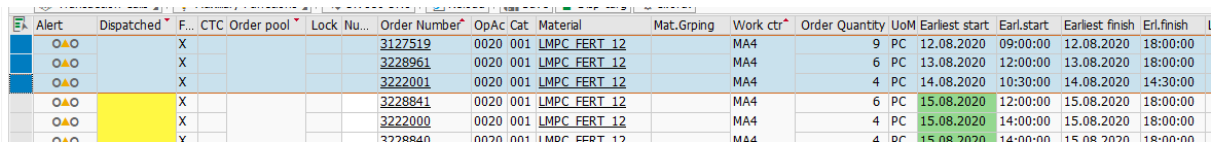
It is also possible that with the function for shifting orders, S_MVEORD, you have already moved the orders in the order pool as they are to be dispatched. You can use S_EPSELT to simply dispatch the orders to the scheduled times after the shift.

The action code uses the same logic as the action code S_EPSEL. The contrast with S_EPSEL is in the settings of the strategy profile used. The strategy profile delivered is set in such a way that dispatching takes place on the date that is stored in the operation.

Procedure

An MRP run has been carried out at night. Now, you simply want to dispatch the operations on the dates specified by the MRP run, to meet the requirement dates for the orders.

Select one or more operations in the ALV Grid:



Alert	Dispatched	F...	CTC	Order pool	Lock	Nu...	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start	Earliest finish	Erl.finish
		X					3127519	0020	001	LMPC_FERT_12		MA4	9	PC	12.08.2020	09:00:00	12.08.2020	18:00:00
		X					3228961	0020	001	LMPC_FERT_12		MA4	6	PC	13.08.2020	12:00:00	13.08.2020	18:00:00
		X					3222001	0020	001	LMPC_FERT_12		MA4	4	PC	14.08.2020	10:30:00	14.08.2020	14:30:00
		X					3228841	0020	001	LMPC_FERT_12		MA4	6	PC	15.08.2020	12:00:00	15.08.2020	18:00:00
		X					3222000	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00	15.08.2020	18:00:00

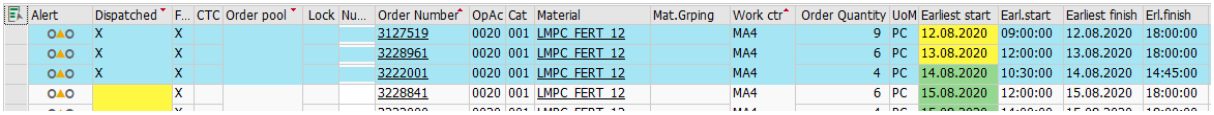
Selection of Operations

Execute the action code 

(S_EPSELT).

Result:

The operations were dispatched at exactly the times at which they were already scheduled. The times of the operations have not changed. However, they are now dispatched and occupy the capacity.



Alert	Dispatched	F...	CTC	Order pool	Lock	Nu...	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start	Earliest finish	Erl.finish
	X	X					3127519	0020	001	LMPC_FERT_12		MA4	9	PC	12.08.2020	09:00:00	12.08.2020	18:00:00
	X	X					3228961	0020	001	LMPC_FERT_12		MA4	6	PC	13.08.2020	12:00:00	13.08.2020	18:00:00
	X	X					3222001	0020	001	LMPC_FERT_12		MA4	4	PC	14.08.2020	10:30:00	14.08.2020	14:45:00
		X					3228841	0020	001	LMPC_FERT_12		MA4	6	PC	15.08.2020	12:00:00	15.08.2020	18:00:00

Result of Selection

→ Remember

The strategy profile for the action code is set in such a way that finite planning takes place. Always remember that a capacity check is carried out. If an operation has already been dispatched to the corresponding capacity at the scheduled time of the operation, the new operation to be dispatched cannot be dispatched there and moves to the next available capacity. Since the “Insert Operation” setting is set in the strategy profile, it is also possible that a new operation to be dispatched moves an operation that has already been dispatched. If you want to plan infinitely, that is, without checking the available capacity, you can change the settings in the strategy profile accordingly.

The function can be used for background processing. Program /LMPC/HJPT Background Processing [page 26]

→ Tip

Special Planning Scenarios:

- **Pool Orders:** You can also use this function to dispatch operations of an order pool. In contrast to the action code S_EPSELP for pool dispatching, only those operations of the order pool that were selected are dispatched. For the action code S_EPSELP, however, it is sufficient to select an operation of an order pool to dispatch all operations of this pool. When dispatching operations with a pool ID, the function recognizes that these are orders of this type and dispatches the operations using the strategy profile for pool dispatching that is stored in the HJPT overall profile.
  S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- **Timetable Orders:** Using this function, you can dispatch operations that have already been assigned a distribution according to the LMPC timetable. For more information, see the description of the LMPC timetable. The function recognizes that the operations have a timetable allocation and dispatches these operations using the strategy profile for timetable dispatching, which is maintained per parameter in the action code. If no strategy profile has been maintained, dispatching is carried out using the strategy profile for timetable dispatching, which is stored in the HJPT overall profile.
  S_FPL Dispatch by LMPC Timetable [page 223]

2.6.5.19 S_EPSEQ Dispatch According to the Sequence Entered

Use

You can use this action code to dispatch operations in the sequence that has been entered in an input-enabled field in the ALV Grid.

There are three possible planning variants for this action code:

- Planning at the earliest possible time
- Manual planning with entry of a start time
- Manual planning with entry of an end time

To ensure that the relevant planning variant works correctly, settings must be made in the action code and in the strategy profile. For the explanations for this, see the LMPC Configuration Guide. S_EPSEQ Configuration: Dispatch According to Sequence Entered

Procedure

Planning at earliest point in time

The ALV Grid of the LMPC HJPT planning table contains a column ready for input with the heading "Dispatching Sequence". If the field is not shown, you can find it in the layout group of the HJPT help fields.

The planner can enter the desired dispatching sequence of the orders.

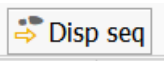
Alert	Dispatched	Dispatching Sequence	Ord. Nr.	OpAc	Material	Work ctr	Lat.st.tme	Latest start
●○○			3292331	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○			3292332	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○			3292333	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○			3292334	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○			3292335	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021

Specifying the Sequence of Orders

The order operations are selected according to this:

Alert	Dispatched	Dispatching Sequence	Ord. Nr.	OpAc	Material	Work ctr	Lat.st.tme	Latest start
●○○		1	3292331	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○		3	3292332	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○		2	3292333	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○			3292334	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021
●○○			3292335	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021

Selection of Operations

The action code 

(S_EPSEQ) is executed:

Result:

Alert	Dispatched	Dispatching Sequence	Ord. Nr.	OpAc	Material	Work ctr	Lat.st.tme	Latest start
○▲○	X		3292331	0010	LMPC_HALB_12	MA1	10:15:37	23.03.2021
○▲○	X		3292333	0010	LMPC_HALB_12	MA1	06:15:37	24.03.2021
○▲○	X		3292332	0010	LMPC_HALB_12	MA1	09:15:37	24.03.2021
●○○			3292334	0010	LMPC_HALB_12	MA1	06:00:00	22.03.2021

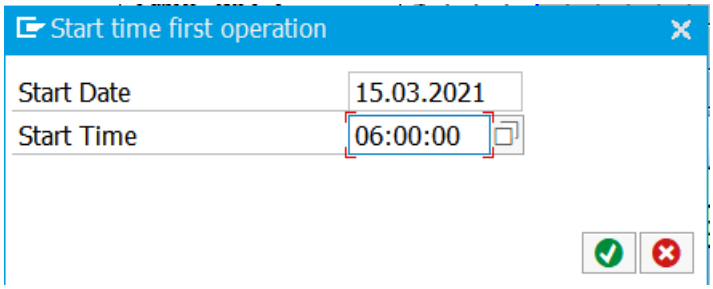
Dispatching Result

The selected orders have been dispatched in the desired sequence at the earliest possible time.

> → Tip
>
> It is possible to set the action code in such a way that dispatching is triggered when you choose the Enter key. All data records that have a sequence number are then processed. With this setting, it is no longer necessary to select the data records and then choose the pushbutton for the action code. For details on this, see the LMPC Configuration Guide. S_EPSEQ Configuration: Dispatch According to Sequence Entered

Manual planning with entry of a start time

The action code can be set in such a way that the user can enter a start time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the start time for the first operation.



Start Time Dialog Box

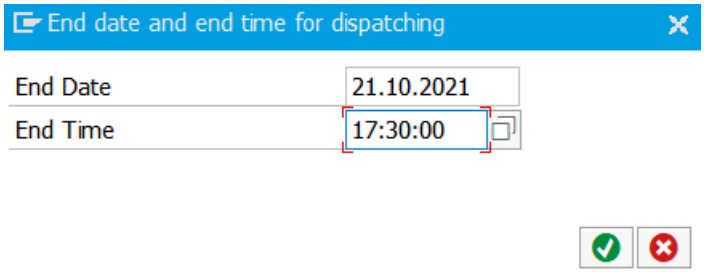
The function dispatches the selected operations sequentially in such a way that the end time of the predecessor is also the start time for the subsequent operation. The operations are dispatched directly one after the other without gaps.

With this logic, it is also possible to realize a sequence across several work centers. The next operation at a work center does not start until the previous operation has been completed at another work center.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

Manual dispatching with entry of an end time

The action code can be set in such a way that the user can enter an end time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the end time for the last operation.



End Time Dialog Box

The function dispatches the selected operations sequentially in such a way that the end time of the predecessor is also the start time for the subsequent operation.

The operations are dispatched in such a way that the last operation in the sequence ends on the desired end date.

With this logic, it is also possible to realize a sequence across several work centers. The next operation at a work center does not start until the previous operation has been completed at another work center.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

> → Remember
>
> If the capacity offer is not sufficient and the operations must be dispatched in the past, dispatching terminates and does not dispatch the operations.

2.6.5.20 S_EPSIM Simultaneous Dispatching

Use

The action code S_EPSIM is a planning function in which all selected operations are transferred to the standard planning function of the capacity planning table simultaneously. Dispatching is executed without additional LMPC logic, solely on the basis of the settings of the strategy profile.

When you use this function, all settings of the strategy profile apply as they can be defined in the standard SAP system of the capacity planning table. This means that you can only plan in the same way as the standard capacity planning table, without additional logic.

This planning function can be used, for example, if the sequence of operations during dispatching is to be created using the sort sequence that is defined in the strategy profile. For all other LMPC HJPT planning functions, the dispatching sequence of the strategy profile has no effect because the operations are transferred individually to the dispatching function.

> → Tip
>
> You can also use the "Date Entry During Dispatching" option in the assigned strategy profile to carry out manual planning with a dialog box for entering the desired start date.

Related Information

G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

2.6.5.21 S_EPSRT Sorted Dispatching

Use

The action code S_EPSRT is a planning function. Before dispatching, the orders are sorted into a sequence that is configured in Customizing. Any field in the ALV grid of the HJPT planning board can be used as a sort criterion. You can use any number of sort criteria.

The action code allows five planning variants:

- Assignment of a sequence number.
- Sorted dispatching at earliest point in time.
- Sorted dispatching with entry of a start time.
- Sorted dispatching with entry of an end time.
- Sorted dispatching in background processing.

To ensure that the relevant planning variant works correctly, settings must be made in the action code and in the strategy profile. For the explanations for this, see the LMPC Configuration Guide. S_EPSRT Configuration: Sorted Dispatching

The action codes S_6_ESOR, S_7_SOEX, and S_7_SOPL are variants of the action code S_EPSRT that are configured differently.

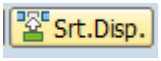
Procedure

Assignment of a sequence number

Select the desired operations in the ALV Grid.

Alert	Dispatched	F...	CTC	Order pool	Lock	Sequence	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start
	X	X					3127519	0020	001	LMPC_FERT_12		MA4	9	PC	04.09.2020	16:17:54
	X						60008415	0020	001	LMPC_FERT_12		MA4	1	PC	05.09.2020	13:38:19
		X					3228961	0020	001	LMPC_FERT_12		MA4	6	PC	13.08.2020	12:00:00
		X					3222001	0020	001	LMPC_FERT_12		MA4	4	PC	14.08.2020	10:30:00
		X					3228841	0020	001	LMPC_FERT_12		MA4	6	PC	15.08.2020	12:00:00
		X					3222000	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00
		X					3228840	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00
		X					3228842	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00
		X					3228843	0020	001	LMPC_FERT_12		MA4	3	PC	15.08.2020	15:00:00

Selection of Operations

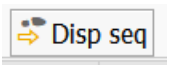
Execute the action code 

(S_EPSRT).

Result:

Alert	Dispatched	F...	CTC	Order pool	Lock	Sequence	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start
	X	X					3127519	0020	001	LMPC_FERT_12		MA4	9	PC	04.09.2020	16:17:54
	X						60008415	0020	001	LMPC_FERT_12		MA4	1	PC	05.09.2020	13:38:19
		X				4	3228961	0020	001	LMPC_FERT_12		MA4	6	PC	13.08.2020	12:00:00
		X				1	3222001	0020	001	LMPC_FERT_12		MA4	4	PC	14.08.2020	10:30:00
		X				5	3228841	0020	001	LMPC_FERT_12		MA4	6	PC	15.08.2020	12:00:00
		X				2	3222000	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00
		X				3	3228840	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00
		X					3228842	0020	001	LMPC_FERT_12		MA4	4	PC	15.08.2020	14:00:00
		X					3228843	0020	001	LMPC_FERT_12		MA4	3	PC	15.08.2020	15:00:00

Result of Number Assignment

The function determined the sequence in the “Sequence” field. The "Sequence" field is input-enabled. The planner can now adjust the sequence and, for example, use the function for dispatching by sequence entered 

(S_EPSEQ) to dispatch the sequence. S_EPSEQ Dispatch According to the Sequence Entered [page 215]

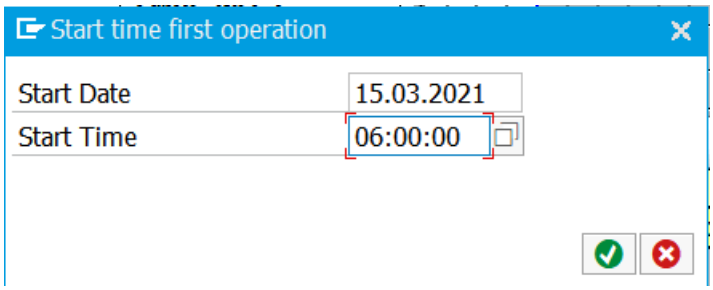
> → Tip
>
> If the field for the sequence is not shown, you can find it in the layout group of the HJPT help fields.

Sorted dispatching at earliest point in time

If the setting for dispatching is set and manual planning is not activated, the numbers are not assigned. The operations are immediately dispatched in the determined sequence at the earliest point in time.

Manual planning with entry of a start time

The action code can be set in such a way that the user can enter a start time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the start time for the first operation.



Start Time Dialog Box

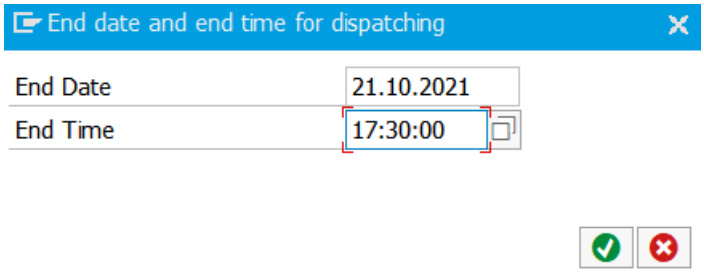
The function dispatches the selected operations in the determined sequence in such a way that the end time of the predecessor is also the start time for the subsequent operation. The operations are dispatched directly one after the other without gaps.

With this logic, it is also possible to realize a sequence across several work centers. The next operation at a work center does not start until the previous operation has been completed at another work center.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

Manual dispatching with entry of an end time

The action code can be set in such a way that the user can enter an end time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the end time for the last operation.



End Time Dialog Box

The function dispatches the selected operations in the determined sequence in such a way that the end time of the predecessor is also the start time for the subsequent operation.

The operations are dispatched in such a way that the last operation in the sequence ends on the desired end date.

With this logic, it is also possible to realize a sequence across several work centers. The next operation at a work center does not start until the previous operation has been completed at another work center.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

> → Remember
>
> If the capacity offer is not sufficient and the operations must be dispatched in the past, dispatching terminates and does not dispatch the operations.

Sorted dispatching in background processing.

The action code can be executed in a nightly planning run using the program /LMPC/HJPT. For details, see the separate section on background processing. Program /LMPC/HJPT Background Processing [page 26]

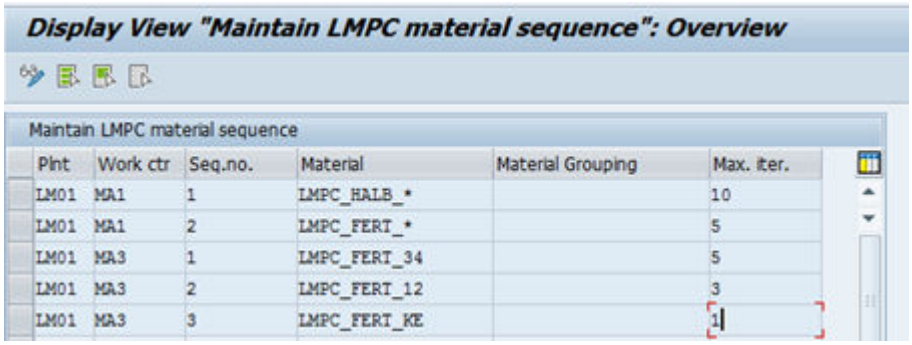
2.6.5.22 S_E_TBSQ Assign Number by Table

Use

You can use this action code to create a scheduling sequence for dispatching order operations. The sequence is determined by means of a heuristic, which takes a material sequence that is stored in a Customizing table into account.

Description of Customizing Settings

A sequence of materials or material groups is maintained for this action code, using the LMPC Customizing transaction /LMPC/MAT_SEQ.



Transaction /LMPC/MAT_SEQ Table Dispatching Sequence

For each work center, the system determines the sequence in which the order operations for particular materials are to be dispatched.

The "Maximum Number" field specifies the maximum number of order operations that can be dispatched consecutively.

You can use wildcards (*) when you enter the materials and material groups.

The logic of the action code S_E_TBSQ processes the selected order operations and assigns a sequence number for the order in the “Sequence” column of the ALV Grid of the HJPT planning table, taking the Customizing table into account.

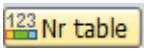
In the LMPC delivery, the action code is configured such that numbers are assigned for all order operations. The logic runs until all order operations have been assigned a number. Order operations that cannot be assigned based on the table are assigned a sequence number at the end.

Procedure

Select the desired order operations:

Alert	Dispatched	F...	CTC	Order pool	Lock	Sequence	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start
		X					3127519	0020	001	LMPC_FERT_12		MA4	9	PC	05.09.2020	09:00:00
		X					3192524	0020	001	LMPC_FERT_KE		MA4	2	PC	05.09.2020	16:00:00
		X					3228830	0010	001	LMPC_TDUMY1		MA4	14	PC	07.09.2020	13:20:00
		X					3127510	0020	001	LMPC_FERT_12		MA4	2	PC	07.09.2020	16:00:00
		X					3127511	0020	001	LMPC_FERT_12		MA4	2	PC	07.09.2020	16:00:00
		X					3127508	0020	001	LMPC_FERT_12		MA4	7	PC	08.09.2020	11:00:00
		X					3127509	0020	001	LMPC_FERT_12		MA4	7	PC	08.09.2020	11:00:00
		X					3127507	0020	001	LMPC_FERT_12		MA4	4	PC	08.09.2020	14:00:00
		X					3127514	0020	001	LMPC_FERT_12		MA4	5	PC	09.09.2020	13:00:00
		X					3127515	0020	001	LMPC_FERT_12		MA4	5	PC	09.09.2020	13:00:00
		X					3127506	0020	001	LMPC_FERT_12		MA4	4	PC	09.09.2020	14:00:00
		X					3127504	0020	001	LMPC_FERT_12		MA4	3	PC	09.09.2020	15:00:00

Selection of Operations

Execute the action code 

(S_E_TBSQ).

Result:

Alert	Dispatched	F...	CTC	Order pool	Lock	Sequence	Order Number	OpAc	Cat	Material	Mat.Grping	Work ctr	Order Quantity	UoM	Earliest start	Earl.start
		X				9	3127519	0020	001	LMPC_FERT_12		MA4	9	PC	05.09.2020	09:00:00
		X				7	3192524	0020	001	LMPC_FERT_KE		MA4	2	PC	05.09.2020	16:00:00
		X				6	3228830	0010	001	LMPC_TDUMY1		MA4	14	PC	07.09.2020	13:20:00
		X				3	3127510	0020	001	LMPC_FERT_12		MA4	2	PC	07.09.2020	16:00:00
		X				4	3127511	0020	001	LMPC_FERT_12		MA4	2	PC	07.09.2020	16:00:00
		X				5	3127508	0020	001	LMPC_FERT_12		MA4	7	PC	08.09.2020	11:00:00
		X				2	3127509	0020	001	LMPC_FERT_12		MA4	7	PC	08.09.2020	11:00:00
		X				8	3127507	0020	001	LMPC_FERT_12		MA4	4	PC	08.09.2020	14:00:00
		X				1	3127514	0020	001	LMPC_FERT_12		MA4	5	PC	09.09.2020	13:00:00
		X					3127515	0020	001	LMPC_FERT_12		MA4	5	PC	09.09.2020	13:00:00
		X					3127506	0020	001	LMPC_FERT_12		MA4	4	PC	09.09.2020	14:00:00

A sequence for the order operations was generated in the “Sequence” column. The planner can adjust this sequence and then use the action code 

(S_EPSEQ) to dispatch the sequence.

You can use Customizing settings to adjust the behavior of the action code. If you have any questions, contact your LMPC consultant.

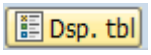
⚠ Restriction

- In sequencing, either the material number or the material group is taken into account. The material number takes precedence. The material group is checked only if no material number is specified for an entry. A combination of entries with material number and material group is possible.
- The logic is not suitable for the sequencing of orders that have operations at different work centers. This logic cannot check the sequence of the order operations at the different work centers. You can only use this logic to dispatch orders that have only one operation or that only have operations at the same work center.
- If an order has several operations at the same work center and all of them are selected, the same sequence numbers are assigned for all operations of the order. Sequencing takes place per order per work center.

Related Information

S_EPTBSQ & S_E_TBSQ Configuration: Dispatch by Table Order

2.6.5.23 S_EPTBSQ Dispatch by Table

The action code 

(S_EPTBSQ) uses the same class as action code S_E_TBSQ. However, the Customizing settings are such that the operations are immediately dispatched in the determined sequence.

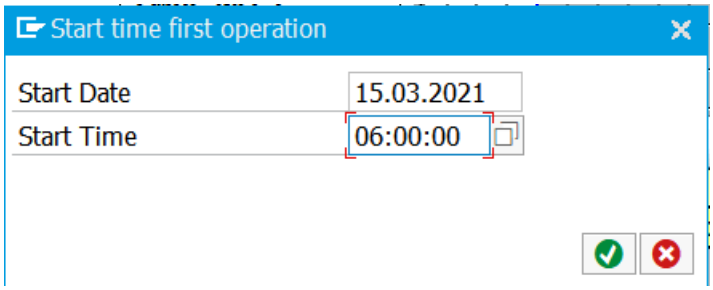
Four planning variants are possible:

- Dispatching at the earliest possible time.
- Manual planning with entry of a start time.
- Manual planning with entry of an end time.
- Dispatching at the earliest point in time with the maximum gap from the requirement date.

Dispatching at the earliest possible time

The operations are dispatched in the determined sequence as early as possible.

The action code can be set in such a way that the user can enter a start time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the start time for the first operation.



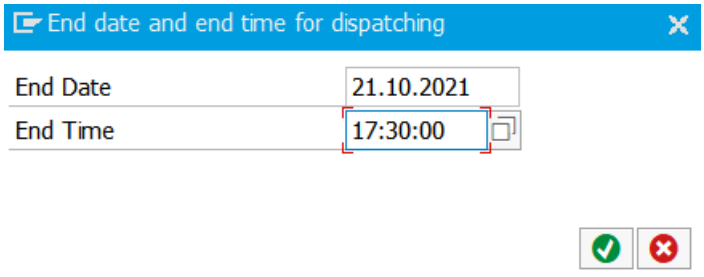
Start Time Dialog Box

The function dispatches the selected operations sequentially in such a way that the end time of the predecessor is also the start time for the subsequent operation. The operations are dispatched directly one after the other without gaps.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

Manual dispatching with entry of an end time

The action code can be set in such a way that the user can enter an end time for dispatching. In this case, when you execute the action code, the system displays a dialog box for entering the end time for the last operation.



End Time Dialog Box

The function dispatches the selected operations sequentially in such a way that the end time of the predecessor is also the start time for the subsequent operation.

The operations are dispatched in such a way that the last operation in the sequence ends on the desired end date.

During dispatching, only the times of the capacity requirements of the operations are taken into account. Meaning the start and end times of the operations.

> → Remember
>
> If the capacity offer is not sufficient and the operations must be dispatched in the past, dispatching terminates and does not dispatch the operations.

Dispatching at the earliest point in time with the maximum gap from the requirement date

In Customizing, you can set a check for the requirement date.

If this logic is activated, the operations that are suitable for the selection of operations according to the logic are dispatched. Directly after dispatching, the system checks how many days before the actual requirement date an operation starts. The start date of the operation is compared with the requirement date.

If the operation exceeds a certain gap from the requirement date, the system resets dispatching for this operation. The system then searches for the next operation that can be dispatched. Further iterations are carried out for the quantity of the selected operations until either all operations have been dispatched or dispatching can no longer be performed.

The aim of the logic is to dispatch the operations on time, but not unnecessarily early. This can help to keep the on-hand stock low for a product.

> ⚠ Restriction
>
> - This is a logic that searches for an approximate result using iterations. Therefore, the set quantities of operations for each material may not always be achieved in the sequence.
> - The logic for checking the requirement date works only for immediate dispatching. It cannot be used for pure sequencing.
> - This logic cannot be combined with manual planning.

> → Tip
>
> The action code can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

Related Information

S_EPTBSQ & S_E_TBSQ Configuration: Dispatch by Table Order

2.6.5.24 S_FPL Dispatch by LMPC Timetable

Use

The function for dispatching by LMPC timetable reads the timetable settings from the LMPC customizing (transaction /LMPC/FPL) and then distributes the selected operations to the capacity based on these settings.

The operations are assigned a start date and a start time and can be dispatched either immediately or later (using the standard dispatching function S_EPSEL).

Two different logics are available for the distribution. The logic used is chosen via a parameter in Customizing (see LMPC Configuration Guide).

→ Tip

- The LMPC timetable can be used in background processing. Program /LMPC/HJPT Background Processing [page 26]
- The LMPC timetable can also be used in the consulting solution CTC - Capable to Confirm. When a sales order is created, the availability of a material can be checked using CTC. If there is not sufficient availability on the requested date, CTC can use the LMPC timetable to search for a possible production window and create and dispatch a planned order there, so that a delivery date can be confirmed when the sales order is created.
  CTC is a separate consulting solution that is not delivered with LMPC. Capable to Confirm (CTC)
  For CTC, logic 2 of the timetable is applied.

⚠ Restriction

When you set the operations to the time slots, no operation sequences are taken into account. Planning with timetable should therefore not be used with orders that have several operations. An application of the timetable with such orders is only possible if only the operation of the bottleneck resource is planned for each order. If you have any questions, contact your LMPC consultant.

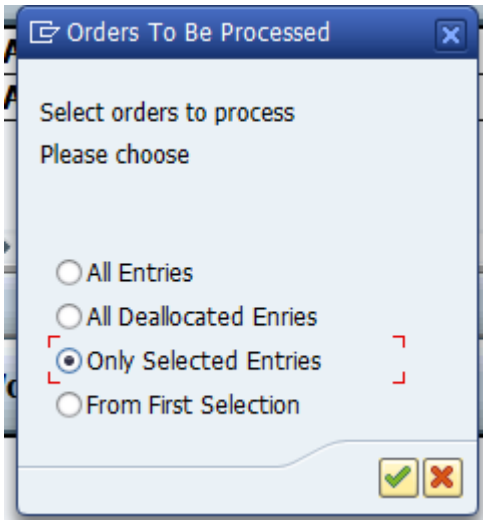
Procedure

To execute the function, first select the desired order operations in the ALV Grid. However, this is not mandatory.

Then execute the action code 

(S_FPL).

In the following dialog box, you specify which order operations are to be processed:



Selection of Operations

After confirmation, the operations are loaded into the processing queue. The system checks whether all selected operations belong to one capacity. If not, the logic terminates. Only operations that have not been dispatched are processed, all dispatched operations are removed from the list of operations.

Next, the settings window appears. This varies depending on the logic used. There are two different logics:

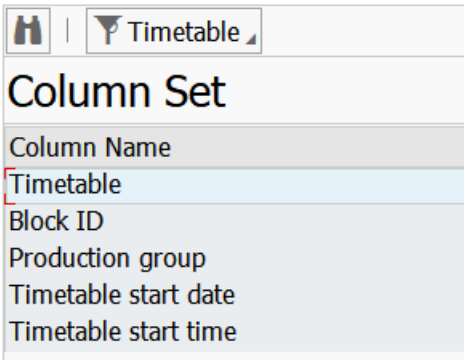
- Timetable Logic 1 - Dispatching to the Earliest Point in Time [page 227]
- Timetable Logic 2 - Dispatching on Target Point in Time [page 229]

Fields in the ALV Grid

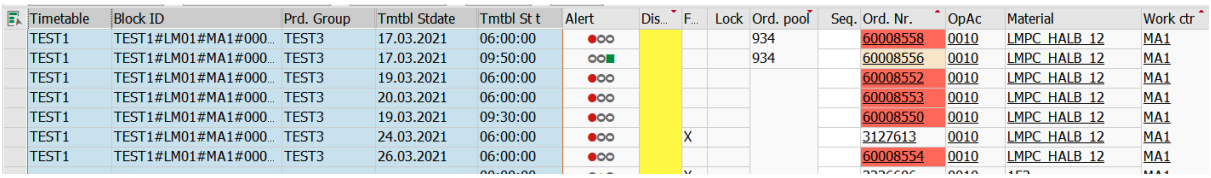
The timetable allocation action code S_FPL fills 5 fields in the ALV Grid:

- Timetable Number (TT_ID_TT)
- Block ID (BLOCK_ID_TT)
- Production Group ID (PR_GRP_TT)
- Timetable Start Date (STDATE_TT)
- Timetable Start Time (STTIME_TT)

The fields are in the ALV Grid layout group "Timetable".



Timetable Layout Group



Timetable	Block ID	Prd. Group	Tmtbl Stdate	Tmtbl St t	Alert	Dis...	F...	Lock	Ord. pool	Seq.	Ord. Nr.	OpAc	Material	Work ctr
TEST1	TEST1#LM01#MA1#000...	TEST3	17.03.2021	06:00:00					934		60008558	0010	LMPC_HALB_12	MA1
TEST1	TEST1#LM01#MA1#000...	TEST3	17.03.2021	09:50:00					934		60008556	0010	LMPC_HALB_12	MA1
TEST1	TEST1#LM01#MA1#000...	TEST3	19.03.2021	06:00:00							60008552	0010	LMPC_HALB_12	MA1
TEST1	TEST1#LM01#MA1#000...	TEST3	20.03.2021	06:00:00							60008553	0010	LMPC_HALB_12	MA1
TEST1	TEST1#LM01#MA1#000...	TEST3	19.03.2021	09:30:00							60008550	0010	LMPC_HALB_12	MA1
TEST1	TEST1#LM01#MA1#000...	TEST3	24.03.2021	06:00:00			X				3127613	0010	LMPC_HALB_12	MA1
TEST1	TEST1#LM01#MA1#000...	TEST3	26.03.2021	06:00:00							60008554	0010	LMPC_HALB_12	MA1

Timetable Fields in ALV Grid

The fields are only filled if immediate dispatching was not selected when the function was executed. Only then does the function "simulate" the distribution of the orders and display the calculated start times and the assignment of the operations to the timetable blocks.

The block ID indicates the block to which the operation was assigned. The block ID consists of 5 elements separated by a '#'. The first element is the timetable. The second element is the plant. The third element is the work center. The 4th element is the block number. The fifth element is the day of the week. 1 stands for Monday, 2 for Tuesday, and so on.

The start date and start time indicate the time calculated by the logic for which the operation is to be dispatched. With immediate dispatching, this time is transferred to the planning function as the start time.

If you really want to dispatch the orders after this simulation, you have two options:

- Execute the action code S_FPL again and select immediate dispatching this time.
- Select the operations to which a distribution by timetable was assigned and execute the action code S_EPSEL or the action code S_EPSELT. Both action codes recognize the timetable assignment and schedule the operations according to the calculated start times.
  S_EPSEL Dispatch Selected Operations [page 209]
  S_EPSELT Dispatching for Date [page 213]

⚠ Restriction

The data in the timetable fields is not saved to the database. If you reload the data or terminate planning, this data is lost.

ⓘ Note

Planning with Several Individual Capacities

It is possible to use the timetable functionality with work centers that have several individual capacities.

However, this is not possible for every use case.

The design of the formulas at the work center is particularly important here.

While the formulas for calculating capacity requirements may not be dependent on the number of individual capacities, the formulas for scheduling must be explicitly dependent on the number of individual capacities in order to calculate the correct duration of the operations.

The specific individual case must be checked and, if necessary, the settings in the system must be changed in order to use the LMPC timetable with several individual capacities.

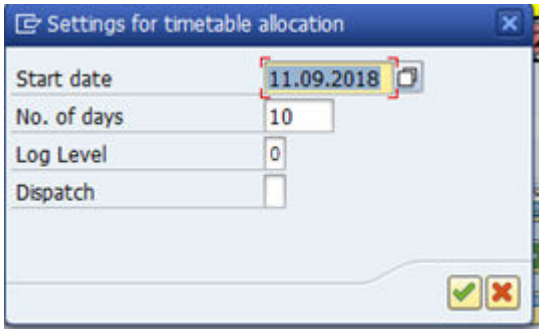
Your LMPC consultant can explain the details.

Related Information

Configuration of the LMPC Timetable

2.6.5.24.1 Timetable Logic 1 - Dispatching to the Earliest Point in Time

Logic 1 LMPC timetable



Settings

Input fields in the window for the settings:

- Start date: Specifies the date from which the logic should start.
- No. of days: Number of days from the start date for which a distribution is to be made. This value can be preset via a parameter (see LMPC Configuration Guide).
- Log Level: Defines which messages are to be displayed after the generation of the allocation. 0 = all messages (green, yellow, and red), 1 = error and warning messages (yellow and red), 2 = only error messages (red). This value can be preset via a parameter (see LMPC Configuration Guide).
- Dispatch: Empty = The timetable allocation is generated and displayed in the corresponding ALV fields. 'X' = The timetable allocations are created and the selected operations are dispatched immediately according to the specifications from the timetable. This value can be preset using a parameter (see LMPC Configuration Guide).

After this window is confirmed, the logic for creating the distribution by timetable starts.

If the corresponding setting is made in Customizing, the system checks whether firmed order operations exist in the processing queue. These may then be removed from the queue.

Logic 1 loops over the days. The number of days is calendar days, not days of the factory calendar. The logic therefore also runs for days without production.

First, the logic calculates the capacity-related situation in the calculated time period. It reads the available capacity at the relevant work center. This available capacity is reduced by the capacity consumption of the orders that have already been dispatched. The logic notes the times at which there is available capacity.

The distribution logic then starts with the first day.

It reads the timetable settings from Customizing for the day in question.

The blocks of a day are sorted in ascending order by time.

A loop runs over the blocks. The production groups in the respective block are read.

There is a loop over the production groups.

There is then a loop over the pool of operations.

The operations are processed in the sequence in which they are passed to the function. No additional sorting exists. In dialog processing, this is the sequence in which the operations are displayed in the ALV Grid. In background processing, this is the sequence in which the operations are provided by the database.

The loops are nested.

The system checks whether the respective order fits the respective production group. If so, this order is assigned to the respective block. The available capacity is taken into account. You can only assign as many operations in a block as free capacity is available for dispatching.

An operation is only assigned if it fits completely into a free capacity gap. The logic does not move operations that have already been dispatched.

If operations have already been dispatched to the capacities, gaps may occur in the production plan because the operations of the selection do not fit exactly into these gaps. It is therefore recommended that you only use the timetable to plan days on which no orders have yet been dispatched.

The loop over the operations continues until a termination condition is reached.

The termination conditions are defined in Customizing using the production groups: Minimum and maximum order quantity, or minimum and maximum number of orders, or minimum and maximum capacity requirements in minutes.

You can set whether the termination conditions are "critical". If the conditions for the quantities are “not critical”, only warning messages are created in the application log when the order quantity, number of orders, or capacity requirement falls short of or exceeds the specified limits.

If, on the other hand, the conditions are “critical”, the limits are adhered to strictly. This means that if the lower limit for a production group in a block is not reached, no operations are distributed during this pass. For the upper limit, the “critical” setting means that only as many operations are assigned from the production group per pass until the maximum limit is reached.

If no termination condition applies, the loop continues until all operations have been checked once.

Then the same logic runs for the next production group in the block. When all production groups in a block have been processed, the entire process is repeated until the maximum number of repetitions for a block has been reached, or until no further operation can be assigned.

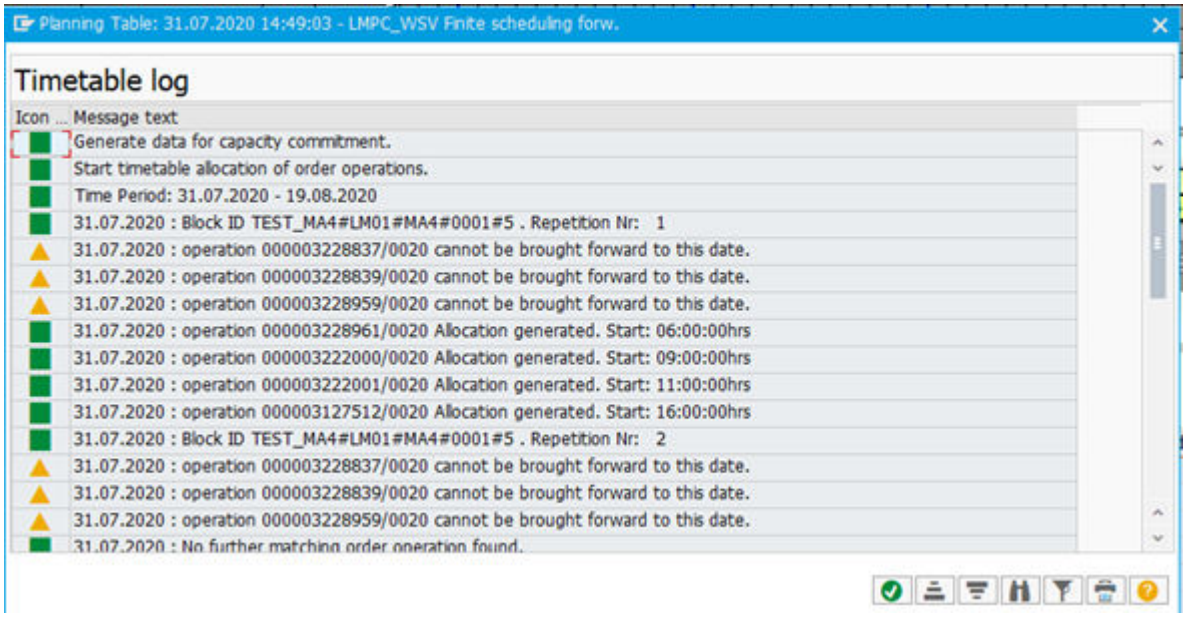
The next block on this day is then processed.

If all blocks of a day have been processed and there are still operations that were not yet able to be distributed, the system continues to the next day.

This continues until either no more operations can be distributed or until the maximum number of days has been reached. At this point the logic ends.

During processing, messages are created for the application log.

These are output at the end of processing. The selected log level determines whether messages are displayed.



Example Application Log

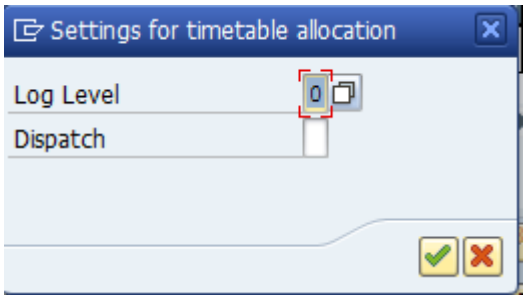
After confirming the timetable log, depending on the selected setting:

- The generated distributions are written to the fields of the ALV Grid, or
- The operations are dispatched immediately

> ⚠ Restriction
>
> Logic 1 can only process order operations with a duration shorter than one day, because the capacity check is only performed for the blocks of one day.

2.6.5.24.2 Timetable Logic 2 - Dispatching on Target Point in Time

Description of the Second Logic of the LMPC Timetable



Settings

Input fields in the window for the settings:

- Log Level: Defines which messages are to be displayed after the generation of the dispatching proposals. 0 = all messages (green, yellow, and red), 1 = error and warning messages (yellow and red), 2 = only error messages (red). (Can be preset via a parameter – see LMPC Configuration Guide).
- Dispatch: Empty = The timetable is generated and displayed in the corresponding ALV Grid fields. 'X' = The dispatching proposals are generated and the selected operations are dispatched immediately according to the allocation target times. (Can be preset via a parameter – see LMPC Configuration Guide).

After this window is confirmed, the logic for creating the dispatching proposals starts.

If the corresponding setting is made in Customizing (see Customizing – "hard firming"), the system checks whether firmed order operations exist in the processing queue. These may then be removed from the queue.

In logic 2, unlike in logic 1, it is possible to process order operations with a duration that is longer than one day. For this purpose, the concept of planning time windows was developed. A planning time window can last several days and summarizes the available capacity in the blocks in this period. The bracket for a planning time window is the production group. Logic 2 first generates a table of planning windows (for more details, see the LMPC Configuration Guide).

The allocation logic for the operations comprises two steps.

In the first step, the operations are assigned to the planning time windows. The system compares the available capacity with the demand. In the second step, the operations assigned to the planning time windows are sorted, and then the dispatching proposals are generated for the operations.

1st Step: Distribute Operations to Planning Time Windows

There is a loop over the order operations. The logic attempts to set the order operations such that they end at the desired target time.

The target time is a date and time that come from the LMPC ALV Grid data. For example, the latest end date, the latest end time, or basic dates. You can use parameter settings on the action code to define which fields are to be read for the target time. (Action Code S_FPL Parameter Settings).

> → Tip
>
> The logic is intended for setting the operations to target times. If you want the operations to be dispatched as early as possible, you can use Customizing to specify the planning period start date as the target time. With this setting, dispatching takes place at the earliest point in time. Data Provider /LMPC/CL_DP_USER_002 Technical Data [page 506]

You can also use the implementation of a BAdI method in the customer system to implement your own logic to determine the target time.

If no parameters have been set and no BAdI method has been implemented, the planning times latest end date and latest end time are used by default.

The logic tries to place the relevant operation into the blocks of a planning time window that belongs to the target time.

If this is not possible, the search will continue going back in time until the earliest end of the search period is reached. This is either the start of the planning period if it is in the future, or the current date if the start of the planning period is in the past, or it is a day calculated from the parameter settings for the maximum period in days, which is to be considered backwards.

When this point in time has been reached, the logic switches to searching into the future. It will continue to search into the future until the end of the search period is reached. The end is either the end of the planning period or a day calculated using parameter settings for the maximum period in days, which is to be considered going forward.

As soon as a suitable time window has been found, the order operation is assigned to this time window.

If no time window is found, a message for the application log is generated and the next operation is processed.

Special case "soft firming": If the soft firming has been set in Customizing, only the time windows that exist on the date of the target time will be considered for the order operation with status "firmed". There is no search in time either backwards or forwards. The operation can only be processed on the date of the target time. The soft firming is not useful for dispatching at the earliest point in time.

When searching for a suitable planning time window, the logic considers the timetable settings.

Here, in contrast to logic 1, the logic only checks whether the order operation matches the production group and whether there is enough capacity in the respective planning time window. Order quantities, order count, and so on have no influence.

Operations already dispatched before execution of the action code S_FPL reduce the available capacity in the planning time window. This ensures that only as much capacity load is placed on a window as is available.

In the overload Customizing setting, an overload can be defined at the end of the planning time window for each production group.

If an overload has been maintained, this overload is calculated as an additional capacity offer if the capacity supply of a planning time window is not sufficient for an order operation.

If the overload is used and the overload extends into a subsequent block, the available capacity of the following block is reduced accordingly.

After all order operations have been processed in step 1, the logic executes the second step.

2nd Step: Sorting per Planning Time Window and Generating Dispatching Proposals

In this step there is a loop over the planning time windows.

The loop takes place forward from the present into the future. Per planning time window, all the order operations that were assigned to this window in step 1 are collected.

The orders already dispatched, which are located in this window, are added to the order queue. However, dispatched orders are only considered, if they match the production group of the planning time window.

Then sorting is applied to these collected order operations per planning time window.

The sorting parameters are usually specified in Customizing. You also have the option of using a BAdI method to sort the orders in the Z namespace in the customer system. If no parameters have been maintained or no BAdI method has been implemented, sorting remains unchanged. Then the operations are processed in the sequence in which they exist in the queue table.

After the sorting, the start times of the order operations are calculated per planning time window.

The logic starts with the start date and the start time of the first planning time window. The start time is the first available capacity offer in the window. This is the starting point for the first order operation.

Then the end time of this order operation is calculated, considering the available capacity at the work center and the block limits from the timetable settings.

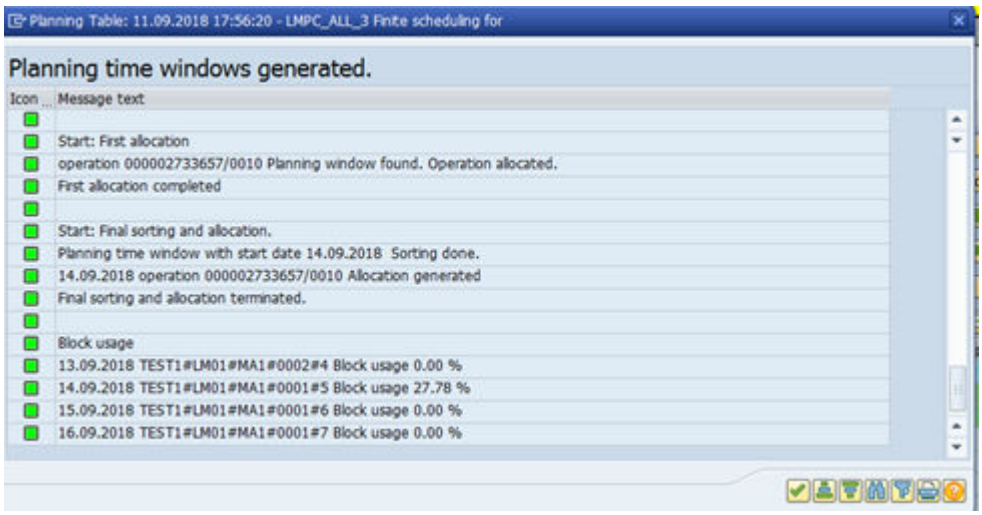
This end time is the start time for the next operation.

The logic continues until all operations in the planning time window have been processed.

Then the logic proceeds to the next planning time window and processes the order operations of this window. First sorting, then calculating the start times.

The end time of the last operation of the previous planning time window has been saved. The logic now checks whether this time is later than the start time of the current planning time window. If so, then the end time is used as the new start time for the allocation. If not, then the new start time is the start time of the planning time window. That way, the order operations are placed correctly one behind the other and there is no overlap.

At the end of the second step, the capacity utilization is calculated for the blocks of the days and one message per block is generated in the application log. The application log is displayed depending on the selected log level.



Example Application Log

After confirming the application log, the generated dispatching proposals are written to the associated fields of the ALV Grid and, if this has been selected beforehand, immediate dispatching is performed.

Since orders already dispatched can be rescheduled, dispatching proposals can also be generated for dispatched order operations that have not been selected. Then the corresponding fields for these order operations are also filled in the ALV Grid.

This is necessary so that the user can also execute dispatching manually, using the standard S_EPSEL action code.

> → Tip
>
> Special Case "No Rescheduling": You can use parameter settings to define that order operations already dispatched are not to be rescheduled.
>
> If this setting is selected, operations already dispatched will not be considered. This can lead to gaps within the planning time windows, since it is likely that the new orders to be allocated cannot be placed exactly around the orders already dispatched. In this case, the block utilization is not evaluated.
>
> For this special case it is recommended that you use the setting "Insert Operation" in the strategy profile. However, this will result in operations that have already been dispatched being moved slightly in order to obtain a production plan without gaps. This is a conflict of objectives. Either you get a gap-free production

plan, or you prevent operations that have already been dispatched from being rescheduled and thereby create gaps. Both are not possible at the same time because new operations to be dispatched fit exactly into the gaps in rare cases only.

Settings in the Strategy Profile for Use with the Timetable

2.6.5.25 S_MANP Manual Dispatching

Use

In manual dispatching, you can enter the desired start or end times for an operation in a popup window. The selected operation is then dispatched accordingly.

The entry depends on the scheduling direction configured in the strategy profile used:

- If forward scheduling is configured, enter the desired start date and time.
- If backward scheduling is configured, enter the requested end date and time.

Whether a dispatched operation ends up starting or ending at the desired time also depends on the settings of the strategy profile. If it is configured that an operation is to be inserted, the operation to be dispatched moves between the operations already dispatched. If this setting is not set, the operation is dispatched to the next time with free capacity.

For the settings for the strategy profile, see the LMPC Configuration Guide. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

→ Tip

Several operations can be dispatched at the same time with the action code. If all operations belong to a capacity and this capacity can be occupied by several operations, the operations are dispatched in parallel to the desired start time. If multiple loading is not possible, the operations are dispatched one after the other. The first selected operation is dispatched at the entered start time, all other operations follow.

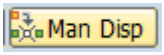
Procedure

The following description shows dispatching with forward scheduling.

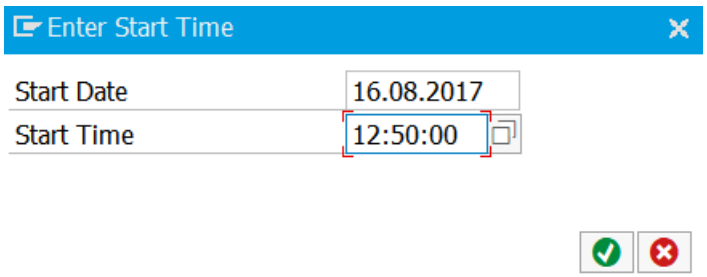
- Select an order operation.

Stat.	I	F	Work ctr	Order	OpAc	Cat	C.	Phase	Material	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish
		X	MA3	2663502	0010	2		0	LMPC_FERT_34		04.08.2017	12:50:00	05.08.2017	06:20:00
		X	MA3	2663504	0010	2		0	LMPC_FERT_34		05.08.2017	07:30:00	05.08.2017	11:00:00

Select Order Operation

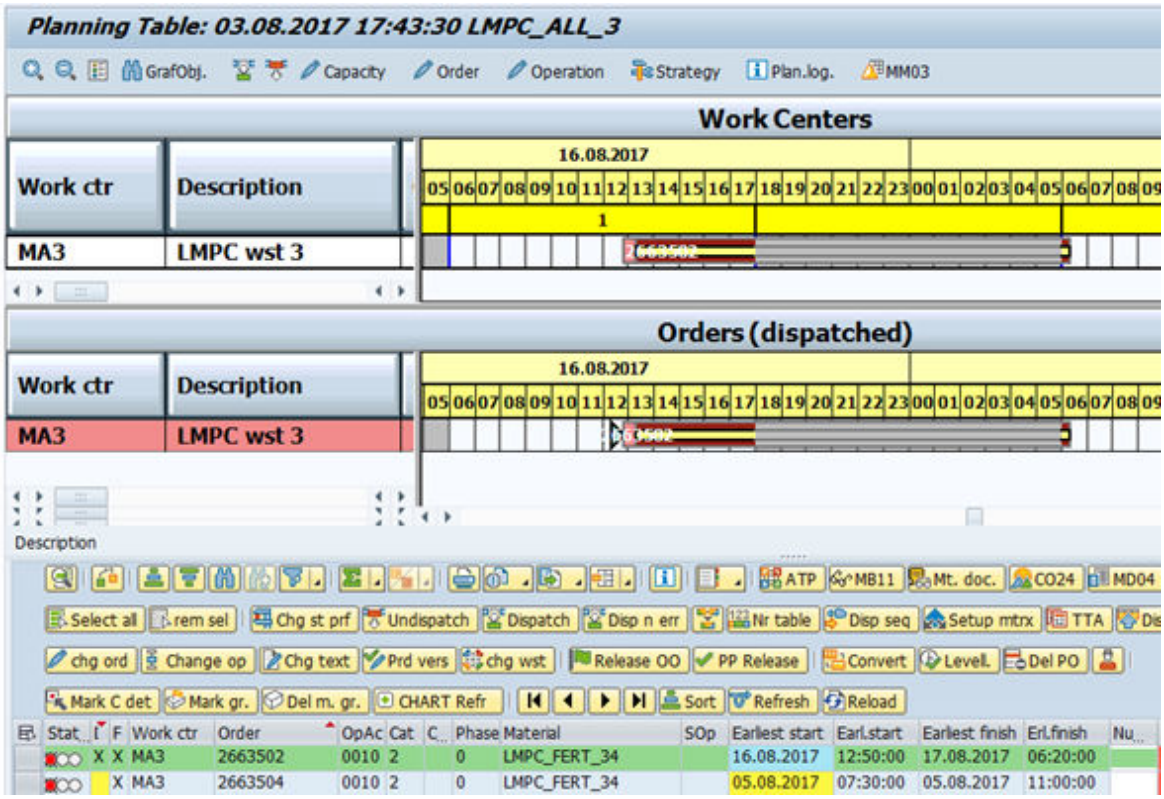
- Execute the action code 

(S_MANP).
- A popup window for setting the desired start time appears. Enter the desired start time.



Start Time Popup Window

- Confirming the window triggers dispatching.
- Result:



Dispatching Result

The operation was dispatched at the desired start time.

→ Remember

The times entered are always valid for the latest dates of the operations. Planning in the HJPT planning table always uses the latest date. The operations are dispatched in such a way that the operation dates of the latest dates are set to the entered dates. For more information, see the section on the layout groups. Layout Groups [page 68]

⚠ Restriction

This function is used to plan individual operations at a predefined time. The function does not take into account the sequence of operations within an order. The user must ensure that the sequence of the operations is adhered to during dispatching.

Related Information

S_MANP Configuration: Manual Dispatching

2.6.5.26 S_MANPL Manual Dispatching List with Gap Check

Use

You can use the action code S_MANPL to dispatch orders at any time in the future. The planner assigns the start time of the order manually via a popup window. The function checks whether sufficient work center capacity is available at the desired time. If not, dispatching is aborted.

The function also checks for the pool ID. If a selected order has a pool ID, all orders with the same pool ID are dispatched. You can use the function to reschedule dispatched orders.

> **⚠ Restriction**
>
> - You can only dispatch orders for one pool ID at the same time.
> - You can only dispatch operations for one work center at the same time.
> - The function was developed for inserting one or a few operations into an existing production plan. The function is not suitable for mass dispatching a large number of operations. This can lead to long runtimes.

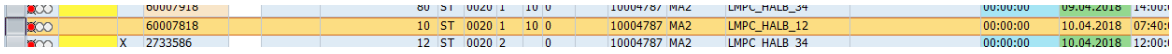
Procedure

There are two options for planning with this action code.

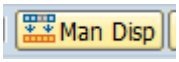
- Manual planning
- Drag and drop with manual planning

Manual planning

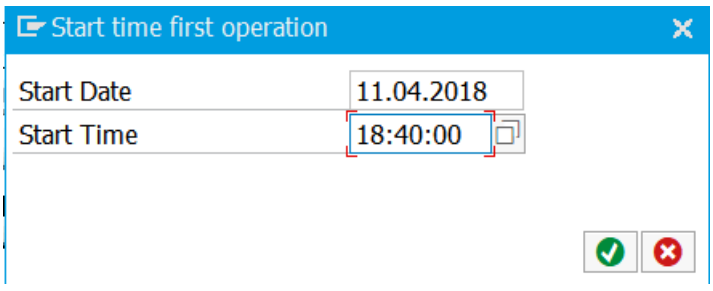
- Select one or more operations



Selection

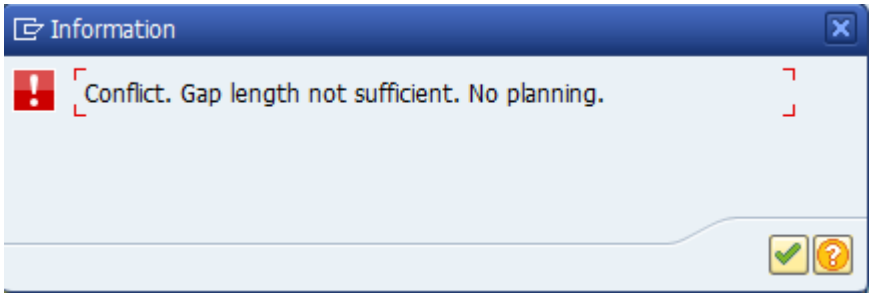
- Execute the action code 

(S_MANPL).
- Enter the desired start time in the popup window.



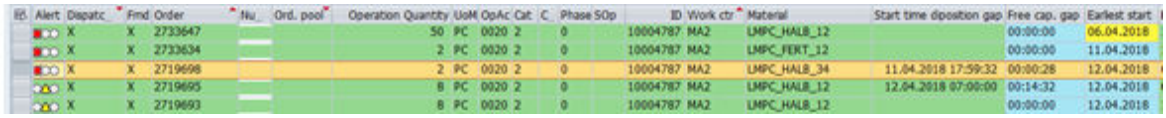
Time Input Popup Window

- If the gap is not large enough, the system issues a warning message and dispatching is terminated.



Error Message

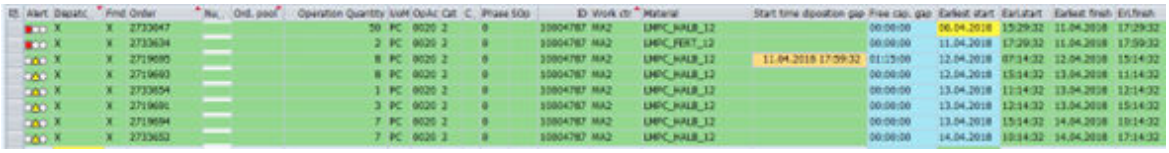
- If the gap is large enough, the operations are dispatched into the gap.



Result of Planning

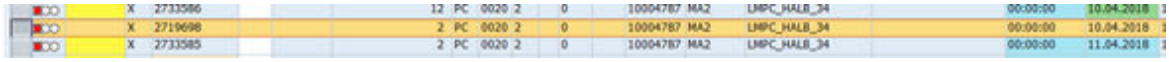
Drag and drop with manual planning

- Initial Situation



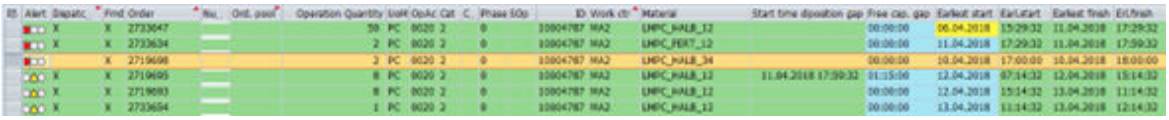
Initial Situation

- Select one or more operations

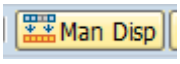


Selection

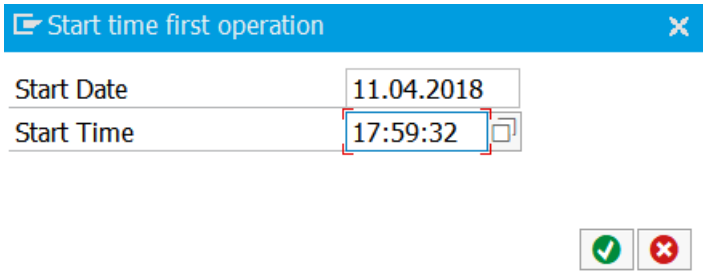
- Drag the orders to a planning gap. The following order always displays the gap that exists before it.



Drag and Drop

- Select the operations and execute the action code 

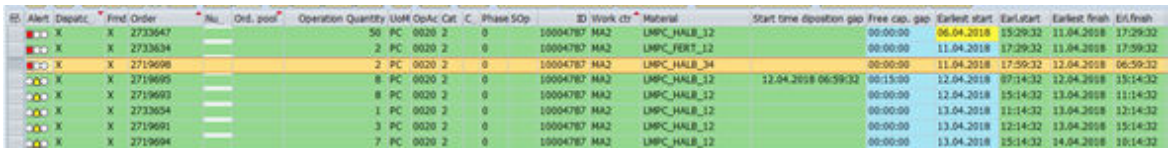
(S_MANPL).
- Since in this case the parameter PRETPROP is set, the system reads the end of the operation from the predecessor operation and transfers it to the popup window. The system fills the popup window correctly and you only need to confirm it.



Popup

- If the gap was large enough, the operations are now scheduled without gaps to the predecessor. If not, planning is terminated.

- Result:



Result

The order was planned to the predecessor without gaps. Since the order does not completely fill the gap, there is still free capacity after the order.

> → Remember
>
> The function can be executed with one or more orders.
>
> You use the Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476] to calculate planning gaps.

2.6.5.27 S_MANPLX Manual Dispatching with Insert

Use

You can use the action code S_MANPLX to dispatch operations at any time in the future. The user assigns the start time for all selected operations manually via a popup window.

In contrast to the S_MANPL function, this function does not check whether sufficient work center capacity is available at the desired time. The operations are inserted at the desired position. If operations have already been dispatched at this position, they are moved to the future.

Procedure

The planning can be done in two ways, as for the action code S_MANPL (S_MANPL Manual Dispatching List with Gap Check [page 235]).

However, the system does not perform a gap check and the operations are inserted at the desired time. Subsequent operations are moved if necessary.

> ⚠ Restriction
>
> - You can only dispatch orders for one pool ID at the same time.
> - You can only dispatch operations for one work center at the same time.
> - The function was developed for inserting one or a few operations into an existing production plan. The function is not suitable for mass dispatching a large number of operations. This can lead to long runtimes.

2.6.5.28 S_MVEORD Move Order Operations in the Pool

Use

You can use this action code to move operations in the order pool of the LMPC HJPT planning table. The operations get new start times.

> ⚠ Restriction
>
> You can only move operations in the pool, meaning operations that have not been dispatched.

Procedure

You have two options for moving orders.

- Move using the action code
- Move using drag and drop in the graphical part of the LMPC HJPT planning table

Move using the action code

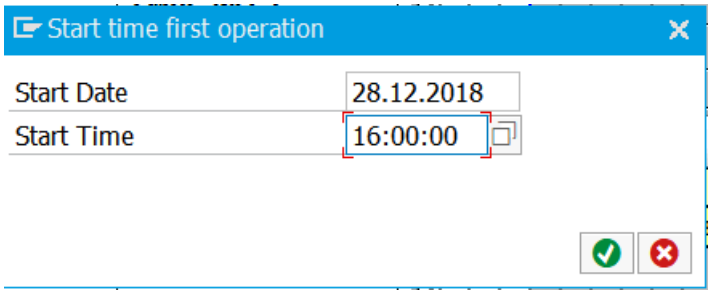
- Select an operation

Alert	Dispatc...	Fmd	Order	OpAc	Work ctr	Material	Earliest start	Earl.start	Earliest finish	Erl.finish
		X	2758766	0010	MA1	LMPC_HALB_12	28.12.2018	06:00:00	28.12.2018	13:55:00
			60007918	0010	MA1	LMPC_HALB_34	28.12.2018	15:35:00	01.01.2019	19:55:00

Selection

- The operation is currently scheduled for December 28, 2018 at 06:00 a.m. It is to be moved to 04:00 p.m.
- Execute the action code 

(S_MVEORD).
- In the popup window, enter the new required start time.



Enter New Start Time

- Result:

Alert	Dispatc...	Fmd	Order	OpAc	Work ctr	Material	Earliest start	Earl.start	Earliest finish	Erl.finish
			60007918	0010	MA1	LMPC_HALB_34	28.12.2018	15:35:00	01.01.2019	19:55:00
		X	2758766	0010	MA1	LMPC_HALB_12	28.12.2018	16:00:00	28.12.2018	22:20:00

Result

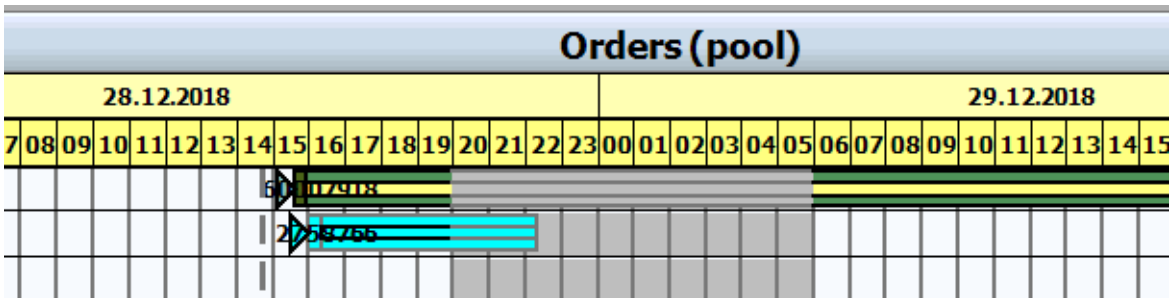
The order operation has been scheduled for the desired start time. Dispatching has not been performed.

> ⚠ Caution
>
> You can move several operations at the same time, all of which then receive the same start times. The available capacity in the resource is not taken into account.

Move using drag and drop in the graphical part of the LMPC HJPT planning table

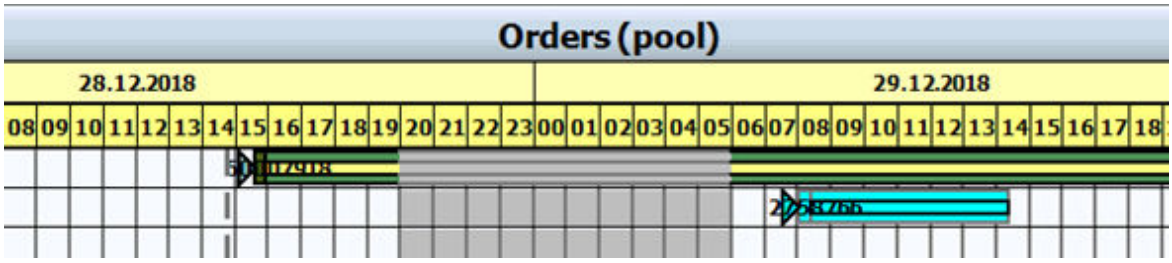
You can also use drag and drop to move operations manually in the order pool of the graphical planning table. This is the same function.

- Select a bar of the operation in chart 3 (Orders (pool)) of the graphical planning table.



Select Bar in Graphical Planning Table

- Drag the bars to the desired new start time.



Moved Operation

- Result: The order operation has been rescheduled for the desired time.

Operations are always moved in simulation mode. The system does not write the changed data to the database until you choose Save.

When dragging and dropping, the start time of an operation can only be set to a time with available capacity. This is a restriction of the graphic. However, with the action code, a start time in non-working times is possible.

As with all LMPC HJPT planning functions, moving operations into the past is not possible.

> → Tip
>
> You can use the settings of the strategy profile used to switch the function to backward scheduling. As a result, an end time can be specified instead of a desired start time.

> ⚠ Caution
>
> Do not move an operation of an order if another operation of the same order has already been dispatched. When you move the operation that has not been dispatched, the system reschedules the entire order, which resets the dispatching indicator of the operation that has already been dispatched. The operation that has already been dispatched is deallocated.

Related Information

S_MVEORD Configuration: Moving Operations in the Pool

2.6.5.29 S_RBPL Rule-Based Dispatching

Use

Various rules can be defined for this planning function that define at which times and at which work centers dispatching of operations is allowed.

Applying the rules reduces the available capacity offer at the work centers. The function searches either forwards or backwards for suitable dispatching dates in the remaining available capacity offer, depending on the selected logic. If necessary, the work center is changed during planning by changing the production version.

As a result, the operations are dispatched at a time at which all rules are fulfilled simultaneously.

The following rules exist:

- S_RBPL Rule Exclusion of Time Intervals [page 245]
- S_RBPL Production Version Rule [page 246]
- S_RBPL Quota Arrangement Rule [page 249]
- S_RBPL Equipment Check Rule [page 250]

The settings for the function can be found in the following chapters:

- S_RBPL Configuration: Rule-Based Planning
- M08 Transaction /LMPC/RBPL_CUST: Rule-Based Planning Master Data

> → Tip
>
> This type of planning is highly complex and has a large number of setting options. Therefore, it is recommended that you commission consulting support for the implementation of this action code.

Procedure

Select one or more operations that are to be dispatched.

Al..	Lock	Fmd	HJPT firm.	Dispatched	Ord. Nr.	Ord. pool	Ord. Qnt.	Work ctr	OpAc	Material	Latest start	Lat.st.tme
		X			3392741		8	MA3	0010	LMPC_FERT_12	26.09.2023	06:00:00
		X			3392741		8	MA4	0020	LMPC_FERT_12	26.09.2023	15:00:00
		X			3392743		12	MA3	0010	LMPC_FERT_12	26.09.2023	17:00:00

Selection of Operations

You can also select operations that have already been dispatched.

Execute the action code RulePl. (S_RBPL).

Check Routines

The function first performs various checks on the selected data records.

The system checks whether there is only one operation per order in the selection. If the selection contains several operations for an order, only the first operation found for the scheduling-relevant capacity is retained. All other operations for the same order are removed from the selection.

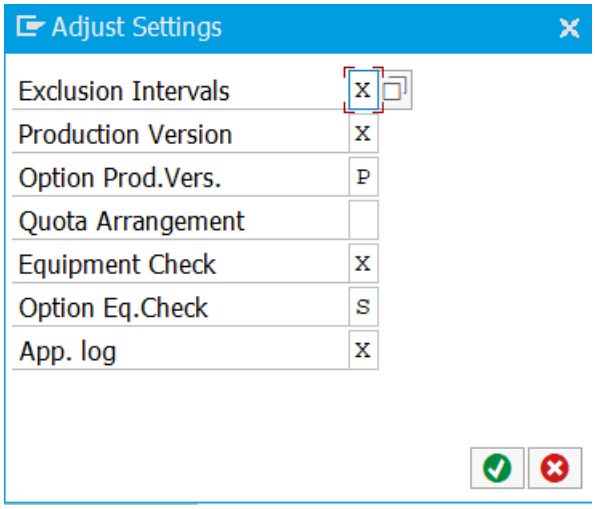
If there are operations with a certain pool ID in the processing, the system includes all operations with this pool ID in the selection.

The system checks whether production orders have the status "created". Production orders that do not have this status in the order header and operation are removed from the selection since they cannot be changed. This also applies to related operations with the same pool ID.

In addition, a check for external locks and the standard firming of operations is performed. These operations cannot be changed either. Depending on the function settings, either the operations are removed from the selection or processing is terminated if the check is positive.

Adjusting the Settings

If it was defined in Customizing that the settings can be adjusted again before dispatching, a dialog box appears.



Change Settings

The following settings can be made:

- Activate or deactivate the **rule for excluding time intervals** (X/blank).
- Activate or deactivate the **rule for the production version** (X/blank).
- Choose the **option for the production version rule**:
  - **Blank**: No change of production version.
  - **S**: Sequential search with alternative production versions.
  - **P**: Parallel search with alternative production versions.
- Activate or deactivate the **rule for the quota arrangement** (X/blank)
- Activate or deactivate the **rule for the equipment check** (X/blank)
- Choose the **option for the equipment check rule**:
  - **Blank**: Check for maintenance orders and simultaneous dispatching.
  - **I**: Check for maintenance orders only.
  - **S**: Check for simultaneous dispatching only.
- Activate or deactivate the **output of the log** (X/blank)

If the dialog box is not activated, the planning function is executed with the settings that are defined in Customizing.

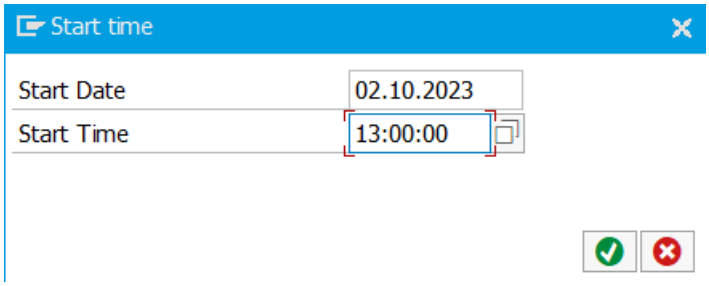
Dispatching Logic

The planning function has three dispatching logics:

- **Dispatching at the earliest possible time.**
- **Manual planning with entry of a start time.**
- **Dispatching close to the requirement date.**

The dispatching logic used is defined in Customizing and cannot be changed using the dialog box for the settings.

If manual planning is activated, the function queries the desired start date for dispatching.



Entry of Start Time

The box does not appear for the other two logics.

In the next step, the dispatched operations contained in the selection are removed from planning to release the occupied capacity. If no new scheduling date can be determined for one of these operations based on the set rules, the operation remains deallocated and is not dispatched back to its original date. It is not possible to return to the original planning since the original date has been released and may be being used by another operation.

The function then starts calculating the available capacity offer.

Dispatched operations that are not contained in the selection reduce the available capacity offer.

In the next step, the activated rules are processed and the capacity offer is further reduced. For details on the individual rules, see the following sections:

- S_RBPL Rule Exclusion of Time Intervals [page 245]
- S_RBPL Production Version Rule [page 246]
- S_RBPL Quota Arrangement Rule [page 249]
- S_RBPL Equipment Check Rule [page 250]

If no rule is active, the capacity offer is not restricted further.

In the last step, the function uses the remaining capacity offer to search for and dispatch dispatching times for the operations.

Depending on the dispatching logic selected, the search for a dispatching time differs:

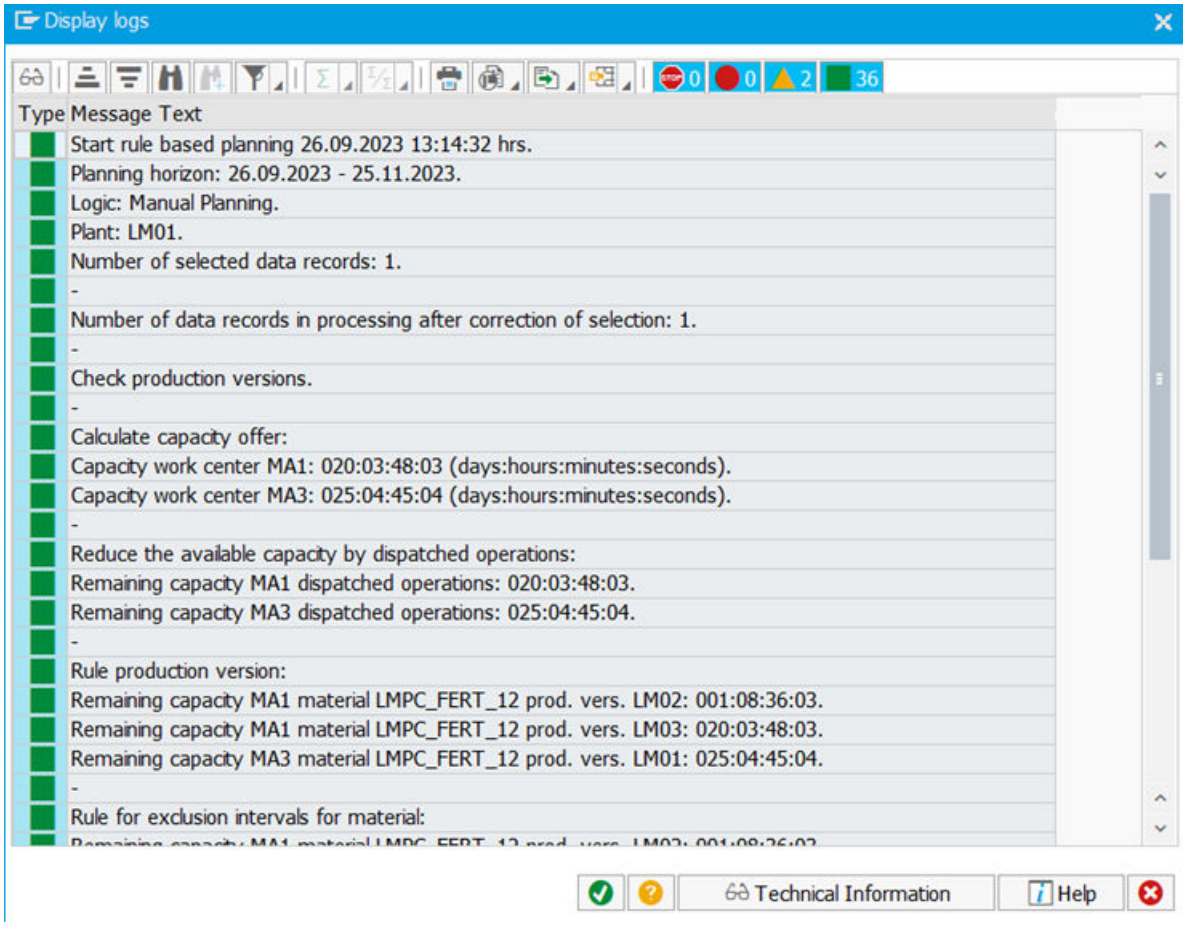
- If **dispatching at the earliest point in time** was selected, the system searches for the earliest point at which an operation can be dispatched. The search starts from the current date and time and runs forwards towards the future.
- If **manual dispatching** was selected, the function searches forwards into the future for the next possible dispatching date from the selected start date.
- If **dispatching close to the requirement date** was selected, the function reads the requirement date for each operation from the corresponding order. The requirement date is a date. The time used is 00:00

in the morning. If necessary, the days of the float after production are subtracted from this date/time from the scheduling margin key, as is the goods receipt processing time. The function assumes that the operation that is to be dispatched is the last operation of an order. Other operations of the same order cannot be taken into account. This calculation provides a date on which the operation must end at the latest in order for the order to fulfill the requirement date. From this date, the system searches backwards for the next possible date on which the operation can be dispatched. The search is performed backwards to position the operation as close as possible to the requirement date. If the backward search does not find a date, the function switches to the forward search and dispatches the operation as early as possible. If an order does not have a requirement date, the logic for dispatching at the earliest possible time is used.

If the rule of the production version is activated, it is possible to search for a dispatching date sequentially or in parallel using the available production versions. The search for a dispatching date can take place at various alternative work centers. The function enables you to change the work center by changing the production version. For more information, see the section on the production version rule. S_RBPL Production Version Rule [page 246]

Log

If the display of the log is activated, the log for the function appears when all operations have been processed:



Log

The log contains the following information:

- The planning period.

- The logic used.
- The number of selected data records and the number of data records in processing.
- Error messages for check routines.
- The initial capacity offer per work center in days, hours, minutes, and seconds (limited to a maximum of 999 days).
- The remaining capacity offer after checking the dispatched operations at the respective work center.
- The remaining capacity offer after checking a rule.
- The capacity requirement per processed operation in days, hours, minutes, and seconds.
- The changed capacity requirement for an operation if the production version has been changed.
- The times of the dispatching date (latest dates) and the work center at which dispatching takes place.
- An error message if no dispatching date can be determined.
- The total number of operations dispatched and not dispatched by this planning run.

During dispatching taking into account the HJPT firming indicator (see notes on the special logic below), dispatched operations with HJPT firming indicators are handled like breaks in the capacity offer. These thus reduce the capacity offer when calculating the initial capacity offer and are not taken into account in the further reduction of the capacity offer by dispatched operations.

During parallel dispatching with pool ID (see the notes on special logic below), only one operation is processed for each pool ID. Therefore, only the capacity requirement and the dispatching date of one operation per order pool are output in the log. However, for the number of dispatched and non-dispatched operations, all operations are counted, including all operations in order pools.

> → Tip
>
> You can use the log to get a rough impression of how the rules used influence the available capacity offer when you set up the function. It is recommended that you deactivate the log in production operation. If there is a large number of operations, the log can become very long and unclear.

The log cannot provide information about why an operation was dispatched on a specific date or why an operation was not dispatched. All rules collectively reduce the capacity offer. Therefore, it is not possible to determine which rule is responsible for this if an operation cannot be dispatched.

The log from dialog processing is not saved. Only in LMPC HJPT background processing are the messages of the log transferred to the application log of background processing and can be saved using this. Program / LMPC/HJPT Background Processing [page 26]

Dispatching Result:

Al..	Lock	Fmd	HJPT firm.	Dispatched	Ord. Nr.	Ord. pool	Ord. Qnt.	Work ctr	OpAc	Material	Latest start	Lat.st.tme
	X			X	3392741		8	MA1	0010	LMPC_FERT_12	02.10.2023	13:00:00
	X				3392743		12	MA3	0010	LMPC_FERT_12	26.09.2023	17:00:00

Dispatching Result

The operation selected in this example has been dispatched.

To enable the user to identify the processed data records, all processed data records are selected, regardless of whether they have been dispatched.

Special Additional Logics

The function also contains the following additional special logics:

- **Parallel dispatching of operations with pool ID**: Operations with the same pool ID all have the same start time and are dispatched in parallel.
- **Planning taking the HJPT firming indicator into account**: Operations that have the HJPT firming indicator remain in their positions. All new operations to be dispatched lie above these operations and become longer by the corresponding time.

For information about how these special logics work, see the following sections:

- S_EPPRLP Parallel Dispatching with Pool ID [page 280]
- Planning with Consideration of HJPT Firming Indicator [page 328]

The planning function can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

The planning function can be used together with the action code S_SETSEL. Concatenation with S_SETSEL [page 426]

> ⚠ Caution
>
> - The more rules applied and the more complex the restrictions per rule, the longer the runtime of the function and the less likely it is that a dispatching date can be found.
> - All active rules restrict the capacity offer. An operation occupies the capacity offer that is still available after the rule evaluation. It is therefore not possible to see which rule is responsible for an operation landing at a specific position or why it cannot be dispatched. The reason for an operation not being dispatched is always missing free capacity.
> - This function is not intended to create a production plan without gaps. The operations are processed in the sequence in which they are passed to the function. Each operation occupies the first available capacity offer found. Since operations do not always fit exactly into free capacity gaps, it is very likely that this function will create gaps in the production plan that cannot be closed.
> - Since this planning function enables the parallel dispatching of operations, the scheduling formulas in the work center must be configured in such a way that the duration of the operations is independent of the number of individual capacities. For more information, see the following section: Parallel Planning with Several Individual Capacities [page 277]

2.6.5.29.1 S_RBPL Rule Exclusion of Time Intervals

You use the exclusion interval rule to specify for each material and work center the periods in which a material may not be produced. Orders or operations that contain the respective material as a header material cannot be dispatched in these time intervals.

The intervals can be defined as an entire period over several days with start date, start time and end date, end time, or as daily repeating intervals, which exclude an interval from start time to end time in the period from start date to end date.

Instead of specific material numbers, an operation can also be identified using the material group or the classification of a material.

In the period of the exclusion intervals, the capacity offer is set to zero for orders that contain the corresponding material as the header material. As a result, the operation cannot be dispatched in the relevant interval.

If you use this rule, a capacity offer is calculated for each material and work center.

You can maintain exclusion intervals in transaction /LMPC/RBPL_CUST. M08 Transaction /LMPC/RBPL_CUST: Rule-Based Planning Master Data

Related Information

S_RBPL Rule-Based Dispatching [page 240]

2.6.5.29.2 S_RBPL Production Version Rule

With this rule, the production version determines the work centers at which dispatching is allowed at which times. You can use this rule to move operations to other work centers.

If the rule is active for the production version, the valid production versions are retrieved for each material.

The production version uses the routing to determine the work center at which an operation is dispatched.

With this function, the production versions also use their validity period to determine the period in which dispatching is possible.

The start day of the validity of a production version determines the earliest possible start date of the capacity requirement of an operation if the date is within the planning horizon. If the start day is before the start of the planning horizon, the current day is the earliest possible start date.

A different logic applies to the end day of the validity. In the standard SAP system, the validity of a production version for changing an order is measured according to the basic end date of an order. To ensure that the standard scheduling that is used for this function works correctly, the basic end date of an order must be in the validity period and not just the end date of the capacity requirement of an operation. Therefore, the day on which a capacity requirement must end at the latest is calculated from the end date of the validity of the production version using the scheduling margin key from the material master so that the basic end date of the order is still in the validity period. As a result, the end day of the validity of the production version is not identical to the end day of the capacity offer. Depending on the scheduling margin key, the end of the capacity offer is at least one day before the end of the validity period of the production version. This must be taken into consideration when modeling the data.

In this calculation, it is assumed that the operation for dispatching is the last capacity-relevant operation of this order. No other operations of an order are taken into account.

When checking whether a production version is valid for an order, the specified range of lot sizes is also taken into account. The order quantity is compared with the specified minimum and maximum lot size. If no lot sizes are maintained in the production version, this is valid for all orders for this material.

Only production versions that provide for a change to work centers that are currently open in the HJPT planning table are processed. It is not possible to switch operations to work centers that are not open.

If the production version rule is active, the available capacity offer is calculated for each order and production version of the corresponding material.

Logics for Changing the Production Version

Depending on the settings in Customizing:

- It may be prohibited to change the production version.
- The search for a dispatching date may take place in parallel across all valid production versions.
- The search for a dispatching date may take place sequentially across all valid production versions.

S_RBPL Configuration: Rule-Based Planning

These three logics for changing the production version are combined with the three options for selecting the start date for dispatching, which are described in the main chapter for S_RBPL. S_RBPL Rule-Based Dispatching [page 240]

If **changing the production version is not allowed**, only the production version that is currently in use is assigned for an order. As a result, fewer capacity offers need to be calculated. Dispatching takes place at the work center at which the operation has already been scheduled.

> → Remember
>
> It is possible that the production version with which the respective order was created is not valid in the current planning horizon. In addition, if the change of the production version is not allowed, it will not be possible to dispatch the operation of this order since no free capacity offer can be calculated.

If the **search is performed in parallel**, a capacity offer is calculated for each production version that is possible for an operation. For each production version, the system then calculates when the earliest dispatching date can be realized. The possible dates are then compared with each other. The production version with which the earliest date can be realized is selected. The earliest date is the date at which the operation ends at the earliest. If the date is the same, the first of the two production versions is used. The first production version is always the production version that is currently used in the order. Afterwards, all other production versions found are processed.

This applies to the logic of manual dispatching and the logic of dispatching on the earliest date. In the dispatching for the requirement date logic, the system first searches backwards in time across all production versions starting from the requirement date and uses the latest date found so that the operation is as close to the requirement date as possible. The latest date is the date at which the operation ends at the latest. If no date can be found backwards, the search switches logic to the forward search. As with the other logics, the system then searches for the earliest date.

If the **search is sequential**, the system first searches for a dispatching date using the production version that is currently used in the order. If a date is found, it is used for dispatching. If no date can be found, the system searches for a date with the next production version found for the material. This continues until a date is found or until all production versions have been checked. In the case of the requirement date, the system also first searches backwards from the requirement date. If no date can be found backwards for all production versions, the system searches forwards.

If the logic leads to the result that a change of production version is necessary, the change is made and the order is then dispatched.

When you change the production version, the BOM and routing are exploded again at the future basic finish date of the order. To this end, the basic end date of the order is calculated. The explosion is necessary to

update the operation data. It must take place on the order finish date because an explosion is only allowed in the validity period of the production version and the standard SAP logic checks for the order finish date during explosion.

> ⚠ Caution
>
> - If there is a large number of production versions and operations, this rule can cause a large runtime load. Therefore, the use of different production versions should be handled sparingly.
> - Switching the production version requires a certain runtime since the BOM and routing are exploded again. If a large number of production version changes have to be made, the runtime of the function can become very long.
> - Most runtime can be saved if the change of the production version is not allowed, after which the serial search is performed. The parallel search requires the largest runtime since the parallel search has to calculate the dates for all available production versions.

Special Logic for Parallel Operations with Pool ID

There is a special check logic for processing parallel operations with a pool ID.

The logic works with a simplification:

An order pool uses the operation that has the largest capacity requirement to search for a dispatching date, that is, the operation that lasts the longest. This is the leading operation for an order pool.

For the other parallel operations, the system does not search for a dispatching date since these operations are parallel to the leading operation.

When you change the production version of the leading operation, the orders of the parallel operations that belong to the same pool ID must also be moved. They are moved to the same work center.

For the parallel operations, the logic searches for possible production versions for the same work center to which the leading order is moved.

The system checks the following for the production version of the parallel material:

- That it has a capacity requirement at the same work center.
- That it is valid for the lot size of the order.
- That it has the same validity period within the planning horizon as the leading material. This means the following in the first step of the check: If the validity dates lie outside the planning horizon, they are reduced to the limits of the planning horizon. If not, their times remain unchanged. In the second step, the times are compared and must be identical.

The first production version found for the new work center is used for the parallel materials. If there are several production versions for the same work center, the logic cannot recognize which production version is to be used and uses the first production version found that is valid according to the check. The user must use the modeling of master data to ensure that the production versions can be assigned uniquely.

If no suitable production version can be found for a parallel material, all operations of the order pool are excluded from processing.

> ⚠ Restriction
>
> - **In all alternative production versions for a material, the operation numbers of the operations used for dispatching must be identical in the routing. When an order is moved to another production version, the operation number of the operation must remain the same during processing. It is not**

possible to move an order to another production version and change the operation number of the operation in processing. The user must create the master data accordingly. Production versions that use other operation numbers for the capacity-relevant operations are not recognized and are excluded from processing.

- Only production versions that are valid in the planning period are processed.
- Locked production versions are not processed.
- Production versions must be checked. Only production versions whose check status is OK (green traffic light) can be processed.
- Only routings can be processed. Line routings cannot be processed.
- For parallel materials, the capacity requirements of the leading material in all production versions for the respective work center must be greater than the capacity requirements of the parallel materials in all production versions for the respective work center. When moving the leading operation to another work center, the capacity requirement of the leading operation must always be greater than the capacity requirement of any other parallel operation at this work center.

Related Information

S_RBPL Rule-Based Dispatching [page 240]

2.6.5.29.3 S_RBPL Quota Arrangement Rule

The quota arrangement rule extends the rule for the production version.

If the quota arrangement rule is activated, the rule for the production version is also activated automatically.

The quota arrangements that overlap with the planning period are read for each material and plant. The quota arrangement header data specifies the validity of the data. In the quota arrangement items, you specify whether internal procurement or external procurement is used for a material.

External procurement

The entry for external procurement is only processed if there is an entry for external procurement in the items and no further entries for in-house production.

In the period entered in the quota arrangement, all capacity offers for the material are updated. The period of the quota arrangement is marked as occupied for the capacity on which the operation is currently located and also for all alternative capacities (production version) that may exist. The entry for external procurement specifies that the material cannot be scheduled anywhere in the period of the quota arrangement.

Internal procurement

The system only checks items for which "In-House Production" is entered in both the column for the procurement type and in the column for the special procurement. All other items are ignored. Therefore, if an additional item is entered for external procurement, it is not taken into account.

The system checks which production versions are specified in the quota arrangement items.

In the period of the quota arrangement, it is possible to reschedule operations to the work centers of the specified production versions. Dispatching cannot take place to other production versions and therefore to other work centers. All capacity offers of the material that do not belong to the maintained production versions are locked for the period of the quota arrangement.

However, this does not apply conversely. For all periods in which no quota arrangements are maintained, you can switch between the production versions and therefore work centers within the validity of the respective production version.

Summary of logic in a single sentence

The quota arrangement is an additional option to restrict the dispatching of operations in a certain period to specific work centers using production versions (in-house production) or to prevent dispatching completely (external procurement).

Additional logic for parallel dispatching with pool ID

Since the materials that are planned with a pool ID are all planned at the same start time, all quota arrangements for the parallel materials must be identical.

If the logic recognizes a pool ID, the quota arrangements for all materials in the order pool are read and compared with each other. If the quota arrangements of the materials are not identical with regard to the validity period or the number of production versions maintained for each material, the entire order pool is removed from processing and a note is written to the application log stating that the pool cannot be processed due to inconsistency in the quota arrangements.

> ⚠ Restriction
>
> - The percentages that can be entered in the quota arrangement have no influence on the logic. The system only checks for internal or external procurement.
> - The function does not check whether the periods of the quota arrangement match the validity periods of the production versions. The maintenance transaction for the quota arrangements contains a check of the validity of the production versions, but this check can be overridden by the user. The consistent maintenance of the settings is the responsibility of the user.

Related Information

S_RBPL Rule-Based Dispatching [page 240]

2.6.5.29.4 S_RBPL Equipment Check Rule

There are two logics for the equipment check rule:

- **Check for maintenance orders for equipment.**
- **Check for simultaneous dispatching of equipment.**

You can use the settings for the function to select whether both or only one of the two logics are active. S_RBPL Configuration: Rule-Based Planning

The required equipment is read for each operation in processing. The relevant check is then performed.

Check for Maintenance Orders

The check for maintenance orders works according to the same logic as the equipment check chart. The operations are dispatched at times at which no maintenance order exists for a specific piece of equipment.

Equipment Check [page 94]

The maintenance orders for the pieces of equipment that are to be executed in the planning period are then determined.

During the period in which maintenance orders exist for the equipment, the capacity offer is blocked at all work centers that are possible for dispatching the operation. The information about which work centers are possible comes from the production versions.

This means that the operation cannot be dispatched if at least one piece of equipment is occupied during a certain time period due to a maintenance task.

You can use the settings for the filters of the production resources/tools to restrict the reading of equipment. C17 Transaction /LMPC/PRT_CUST, M06 Transaction /LMPC/PRT_CUSTS: Filter for Production Resources/Tools

Check for Simultaneous Dispatching

This logic ensures that operations that use the same equipment are not dispatched at the same time. The logic assumes that a piece of equipment can only be used once per period.

If an operation is dispatched in a certain period, the capacities are blocked in the same period for all other operations that use the same equipment. This ensures that no other operation that uses the same equipment is dispatched at the same time.

In this check routine, the capacity offer is only reduced during the calculation of the dispatching dates. The application log does not show a reduction in capacity for this logic.

The equipment check chart cannot be used for this logic.

Special Logic for Parallel Operations with Pool ID

In contrast to the other logics, the equipment check checks all operations of a pool ID, not just the leading operation. The pieces of equipment are maintained for an operation and can differ from order to order. Therefore, all equipment for a pool ID must be included in the check.

> **⚠ Restriction**
>
> If the production version rule is active, a simplification is applied: The logic assumes that the equipment used in the routings that are contained in the alternative production versions for a material are identical. The equipment is read either from the current operation of the production order or from the routing of the planned order. Alternative equipment from routings in alternative production versions are not taken into account. Therefore, if a piece of equipment is occupied in a certain time period, the order cannot switch to another production version that has a different piece of equipment available during this time period. This is because the logic does not recognize the alternative equipment.

> ⚠ Caution
>
> If the equipment check is active, the available capacity offer is calculated for each operation in processing and for each production version, as well as for the parallel operations with a pool ID. This can lead to a long runtime of the function if there is a large number of operations in the selection.

Related Information

S_RBPL Rule-Based Dispatching [page 240]

2.6.5.30 S_RESCD Reschedule All

Use

You can use the function "Reschedule All" to deallocate operations that have already been dispatched and dispatch them again in the same order at the earliest possible time. For example, you can thereby update a production plan that has been run in the past.

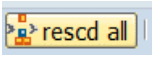
This action code can also be used to dispatch the operations in a new sequence if you have previously used drag and drop to change the sequence of the dispatched operations.

Procedure

- Select an order operation in the ALV Grid of the LMPC HJPT planning table, as of which rescheduling is to be performed.

Status	D	F_	Work center	Order	OpAc	Cat	Cat	Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34		25.08.2017	13:42:01	25.08.2017	17:12:01
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34		25.08.2017	13:42:01	25.08.2017	17:12:01
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34		25.08.2017	17:12:01	26.08.2017	08:42:01
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34		25.08.2017	17:12:01	26.08.2017	08:42:01
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34		26.08.2017	08:42:01	26.08.2017	11:12:01
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34		26.08.2017	08:42:01	26.08.2017	11:12:01
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34		26.08.2017	11:12:01	26.08.2017	13:42:01
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34		26.08.2017	11:12:01	26.08.2017	13:42:01

Select Order Operation

- Execute the action code 

(S_RESCD).
- Result:

Status	D	F_	Work center	Order	OpAc	Cat	Cat	Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34		29.08.2017	17:11:00	30.08.2017	08:41:00
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34		29.08.2017	17:11:00	30.08.2017	08:41:00
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34		30.08.2017	08:41:00	30.08.2017	12:11:00
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34		30.08.2017	08:41:00	30.08.2017	12:11:00
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34		30.08.2017	12:11:00	30.08.2017	14:41:00
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34		30.08.2017	12:11:00	30.08.2017	14:41:00
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34		30.08.2017	14:41:00	30.08.2017	17:11:00

Result

  All dispatched operations have been rescheduled. You can recognize this from the start date of the orders.

In the outbound delivery, the action code is configured such that all operations as of the first selected operation are rescheduled. In Customizing, you can make settings so that all dispatched operations are rescheduled.

Special feature of pool ID: If an operation with a pool ID is found during processing, all operations with the same pool ID are dispatched after this operation. The function combines operations with a pool ID.

The action code can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

→ Remember

The planning function processes the operations in the sequence in which they are displayed in the ALV Grid. For the planning function to work correctly, the operations in the ALV Grid must be sorted according to the start times of the capacity requirements. Since sorting by the ALV Grid does not exist in background processing, the operations in background processing are automatically sorted according to the start times of the capacity requirements before processing.

⚠ Caution

- Operations that are locked externally cannot be rescheduled. External locks arise when an operation is being processed at the same time. You can identify external locks in the column for locks. Data Provider /LMPC/CL_DP_ENQUEUE Order Locks (Icon) [page 474]
  Similarly, operations of production and process orders that have the firming indicator cannot be rescheduled. S_FIX, S_FIXE Firm and remove firming of orders [page 395]
  Operations that are fixed or locked externally are not rescheduled. As a result, gaps may occur in the production plan when the function is executed, or the sequence of the operations might be mixed up.
- This function does not correct the sequence of the operations of an order. The operations are dispatched again chronologically, as they were already dispatched before rescheduling. If the sequence of operations was already incorrect before rescheduling, it is not corrected by this function.
- Since the action code has its own selection routine, the action code limitation function does not work for this action code. Action Code Limits [page 104]

2.6.5.31 S_PLVERS HJPT Read/Save Plan Version

Save Production Plans as Version

Use

In the HJPT planning table, planning is simulated. This means that all planning steps can be discarded. The configured planning is not written to the database until you save.

You can use the action code S_PLVERS to create up to 5 different versions of a production plan during the simulation without having to save these versions to the database.

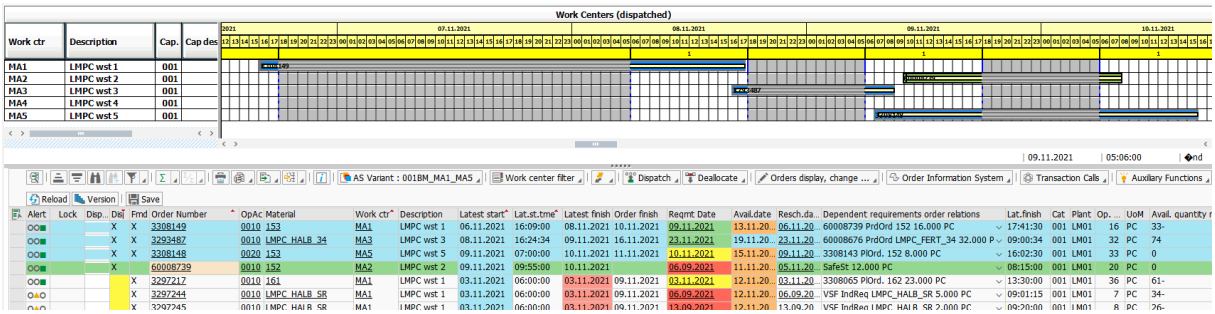
This allows production planners to try out different sequences of orders at the same time.

In one version, the start times of the operations are stored for each user name and selection criteria of the HJPT planning table.

Procedure

Create Version

A production plan has been created.

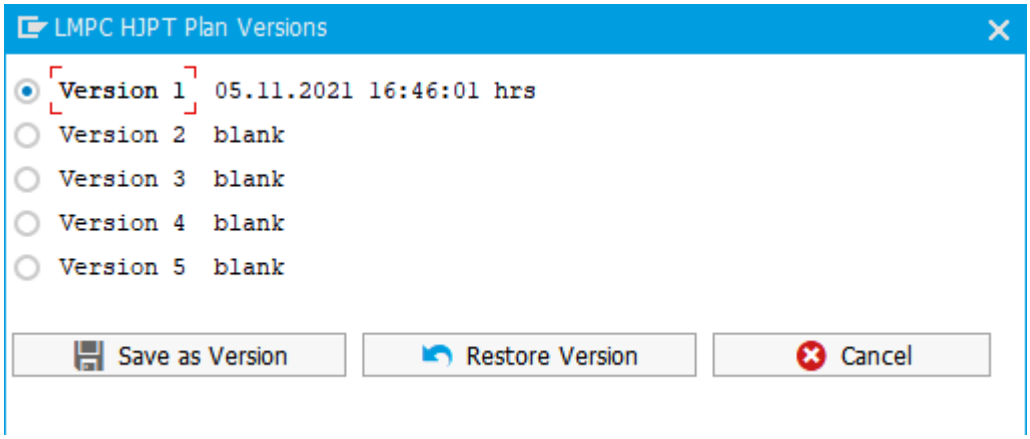


Example Production Plan

This production plan is to be stored as a test version.

Execute the action code Version (S_PLVERS).

A selection screen for plan versions appears.



Selection Screen for Plan Versions

The created production plan can be saved in one of the five possible versions.

If data already exists for a version, the date and time at which this version was created is displayed. If no data is stored for a version, the relevant version is empty.

The data of a version is always saved per user name and per selection criteria. If you want to restore a saved version when you call the HJPT planning table later, you must use the same selection criteria. This means that you can only restore the data for the version if you reenter with exactly the same work center selection.

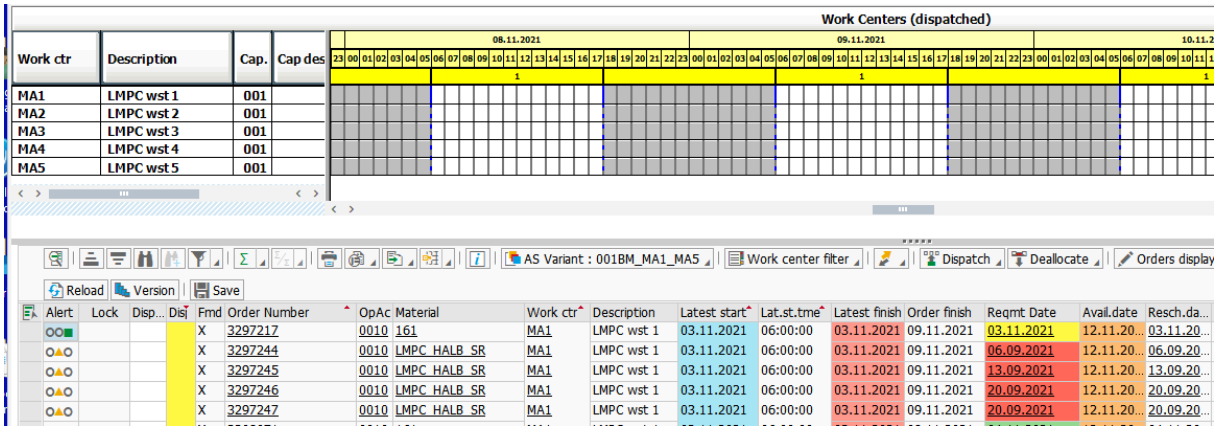
The data for a version is stored for 28 days. It is then deleted automatically.

To save the data, use the radio buttons to select a version and choose the Save button.

The start times of the operations are stored in the respective version for recovery at a later point in time.

Restore Version

Initial situation:



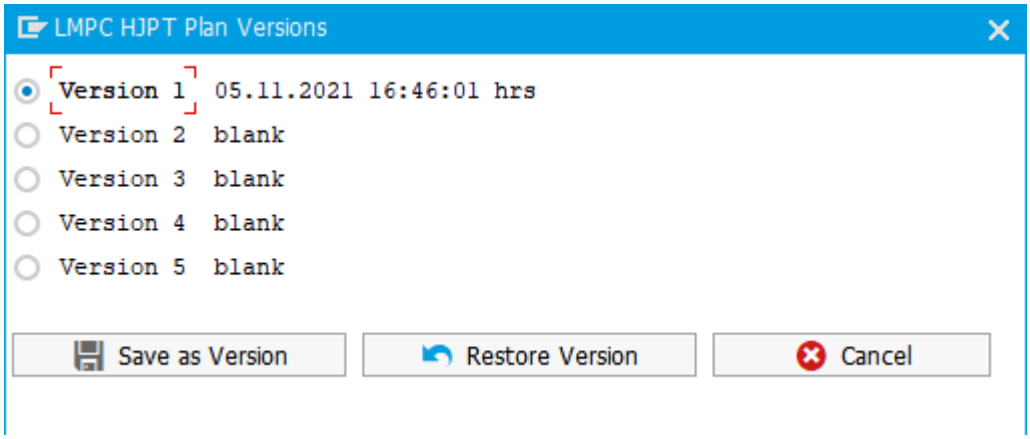
Empty Production Plan

No operations are dispatched.

You want to restore the planning status of a version.

Execute the action code Version (S_PLVERS).

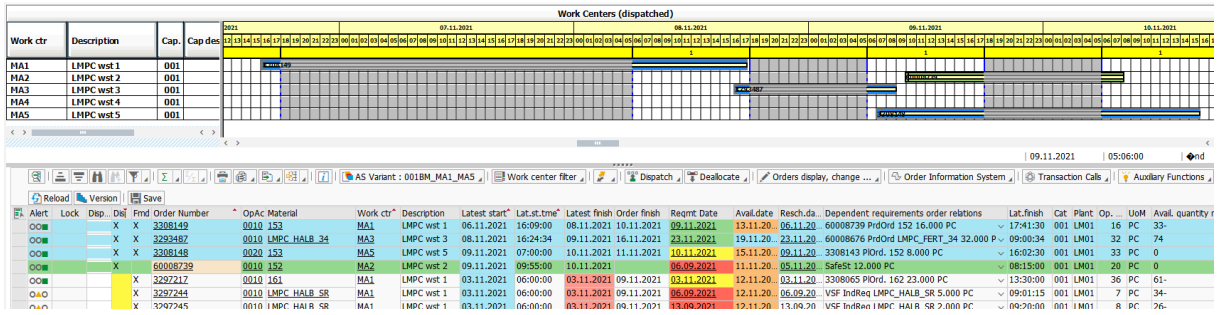
A selection screen for plan versions appears.



Selection Screen for Plan Versions

Use the radio buttons to select the version you want to restore and click the Restore button.

Result:



Restored Production Plan

The production plan from the planning version has been restored.

The function restores not only the times of the dispatched operations. It also restores the dates of the non-dispatched operations if these are not in the past.

If planned orders have been converted to production orders or process orders since a version has been saved, the new orders are set to the defined start times of the earlier planned orders.

If you now want to use this production plan for production, use the standard save function to save it. This writes it to the database.

⚠ Restriction

- Restoring a planning version involves dispatching operations to saved start times in the simulation.
- The plan versions are not a function for completely restoring a dataset. This function can only be used to restore the planning sequence of operations. To do this, the operations are scheduled for the times stored in the plan version.
- It is not possible to dispatch into the past. If the times of the operations that are stored in the version are already in the past, these times are transferred to the dispatching function anyway. Since the dispatching function does not dispatch into the past, the operations are dispatched in the saved sequence into the future, from the current point in time. As a result of this procedure, the saved production plan of the version is moved to the present.
- When operations are moved to the present, no planning logic of other LMPC HJPT planning functions are taken into account, such as the LMPC HJPT timetable, two-step dispatching, or dispatching by setup matrix. The function reschedules the operations strictly in the defined sequence, starting from the current time. Therefore, the shift to the present can also lead to planning gaps being closed.
- The data of the orders is saved for the user name and the selection of the work centers. A version can only be determined if exactly the same work centers have been specified in the selection when the planning table is called at a later point in time. If, for example, only some of the work centers or more work centers are selected than in an existing version, this version cannot be found.
- No version is saved using the regular save process. Data is only stored in a version using the action code.
- The change in operation quantity of an order is not taken into account. Changing the operation quantity usually changes the duration of an operation. If the quantities of an order have been changed since a version has been saved, this can lead to shifts or gaps in the restored production plan because dispatching takes place with the quantity currently valid.
- It is not possible to restore the change of the production version or the rescheduling of operations to other work centers. During recovery, the operations are dispatched to the work centers to which they are currently assigned.
- Deleted orders cannot be restored.
- Simulative orders with temporary order numbers cannot be processed. S_CRORD Create Simulative Order [page 156]
- The conversion of planned orders into production or process orders cannot be reset.
- Status changes to orders that are a result of orders being released or the material availability check being executed, for example, cannot be reversed.
- The changes to standard values, such as setup times, cannot be undone.
- The function of the work center filters can have a negative effect on the saving of planning versions. In contrast to filters of the ALV Grid that only hide the data records, the work center filters' function filters out the data records in such a way that they cannot be processed by action codes. This means that all data records that are filtered by work center filters are not stored in a plan version. Therefore, it is

recommended to avoid the use of work center filters when working with plan versions. S_WPFLT Work Center Filter [page 418]

2.6.5.32 S_SETSTR Change Strategy Profile Settings

Use

The LMPC HJPT planning functions all work with a strategy profile in each case. For HJPT action codes, the strategy profile is defined as a parameter in the respective planning function for the action code. Action Codes for Planning Functions

For planning in the graphic, the strategy profile that is defined in the overall profile of the graphic is used. G01 Transaction /LMPC/OPD0: Overall Profile for Capacity Leveling

You can use this action code to temporarily adjust the settings of strategy profiles to be able to perform subsequent dispatching with changed settings. This allows you to change the behavior of planning functions.

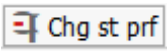
The changes are only retained for as long as the planning table is open and until the planning table is reloaded. The changes are not stored in the database.

→ Tip

It is not usually necessary to adjust the settings of strategy profiles. A parameter can be used to transfer a strategy profile for each planning function. This allows you to predefine the most diverse planning functions.

Using predefined planning functions instead of adjusting the settings of the strategy profiles before each dispatching saves production planners a lot of time. It is therefore recommended that you use predefined planning functions.

Procedure

Call the action code 

(S_SETSTR).

The system displays a window for adjusting the settings.



Strategy Profile

The selected profile or the profile that was specified using a parameter is stored in the window.

You can change the settings.

If you want to change a different strategy profile, you can switch strategy profile.

When you then execute the planning function, the changed settings are taken into account.

> ⚠ Restriction
>
> You can only use this function to change the settings for strategy profiles. It is not possible to select a different strategy profile for a planning function.
>
> Example: For the drag and drop function in the graphic, the strategy profile LMP_D&DE is defined in the HJPT overall profile. You cannot use this function to select a different strategy profile for drag and drop. You can only change the settings for drag and drop in the strategy profile LMP_D&DE which is used for drag and drop.
>
> .

Also see the section on the configuration options for strategy profiles in the LMPC Configuration Guide. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

2.6.5.33 S_SHFTPP Shift Production Plan

Use

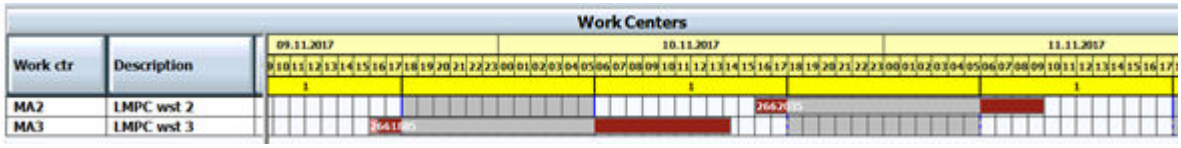
With this action code, production plans containing operations on different resources/work centers can be shifted forward and backward in time.

The function calculates an offset for shifting the selected operations. The start time of each selected operation is shifted by this offset. As a result, the position of the operations to each other remains constant and the gaps are retained.

Please note the restrictions below.

Procedure

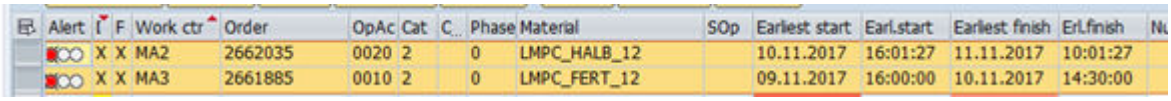
Initial situation:



Production Plan at the Start

One operation is dispatched to one work center. The gap between the operations is approximately 1 ½ hours.

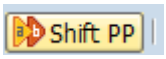
Select the dispatched operations in the ALV Grid.



Alert	I	F	Work ctr	Order	OpAc	Cat	C..	Phase	Material	SOp	Earliest start	Earl.start	Earliest finish	Erl.finish	N
	X	X	MA2	2662035	0020	2		0	LMPC_HALB_12		10.11.2017	16:01:27	11.11.2017	10:01:27	
	X	X	MA3	2661885	0010	2		0	LMPC_FERT_12		09.11.2017	16:00:00	10.11.2017	14:30:00	

Selection of Dispatched Operations

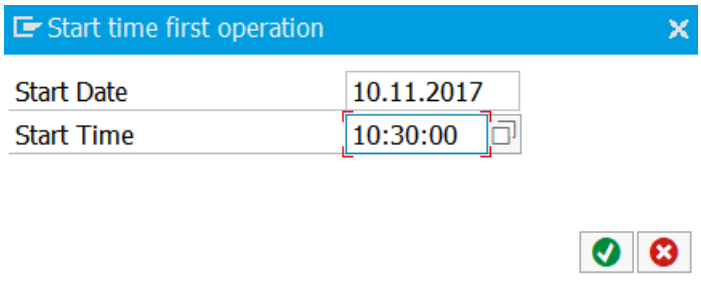
Only operations that were selected are processed. For operations with a pool ID, depending on the settings in Customizing, the operations with the same pool ID are added to the selection.

Execute the action code 

(S_SHFTPP).

A popup window appears, in which you can enter the new start time of the production plan. By default, the system displays the start time of the earliest operation. If the operation is in the past, the suggested time is the current time.

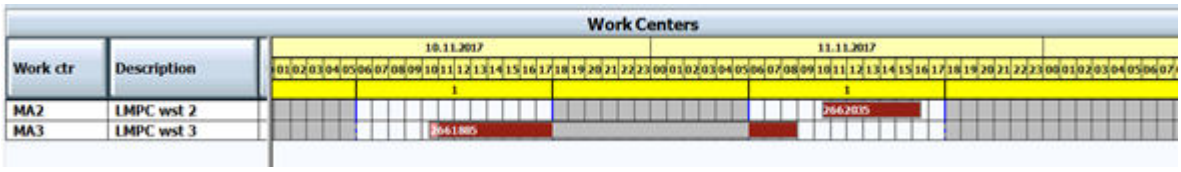
Enter the desired new start time, and confirm the window. The operations are to be moved to the right, meaning forward in time.



Dialog Box for New Start Time

The function now calculates the linear time by which the first operation is moved in the work center. The calculation considers only the times for which the work center has available capacity. This time is the shifting time. The shifting time is then used to calculate the new start time of all other selected operations in the production plan. These will also be moved to the future by the shifting time.

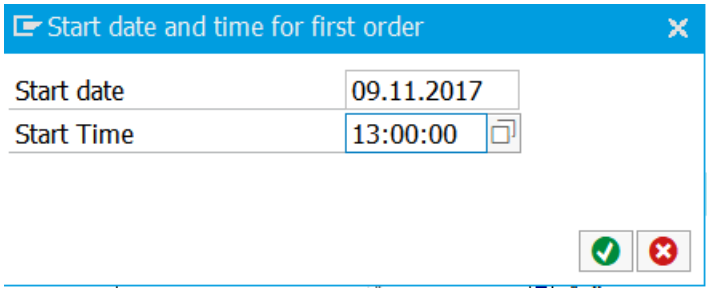
Result:



Planning result

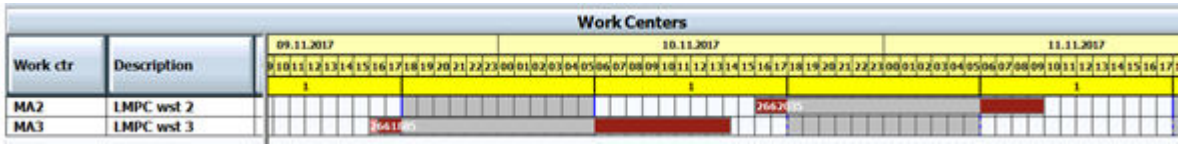
The operations have been moved. The gaps between the operations remain the same, at approximately 1 ½ hours.

The same shift is also possible in the other direction.



New Start Time Backwards

Result:



Result Movement to the Left

The operations have been moved to the left, meaning backwards. The gap is still approximately 1 ½ hours.

⚠ Restriction

- It is only possible to move operations up to the present point in time. It is not possible to shift into the past.
- The shift only takes place for selected operations. All operations that were not selected are not moved.
- The calculation of the new start time for the individual operations works correctly only if all work centers involved have the exact same capacity offer. It is not possible to apply the function to work centers with different capacity offers.
- The new start time can only be calculated correctly if the utilization rate of the capacity is constant in the entire planning period and does not change.
- Based on the shift time, the function calculates the new start times of the operations and transfers the operations with this new start time to the dispatching function. The function does not check whether there is free capacity at the point to which the operations are to be moved. The planner must first check whether the capacities are free and not occupied by other operations. If operations are moved to times for which other operations already exist, the production plan can be mixed up.
- If operations are rescheduled that have been changed outside the application since the last dispatching, for example, due to a quantity change through a partial confirmation, the length of the bars of the operations changes as a result of dispatching again. This is a standard behavior during

planning because rescheduling updates the data of the operations. Since only the start dates of the operations are shifted with this function, rescheduling after a partial confirmation changes the gaps between the operations.

- The shift is only possible for dispatched operations. If you wish to shift operations that have not yet been dispatched, use the action code S_MVEORD. S_MVEORD Move Order Operations in the Pool [page 237]

→ Tip

The data provider /LMPC/CL_DP_GAP calculates the free capacity in the dispatching gaps. You can use these fields to ensure that the gaps remain the same when they are shifted.

Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476]

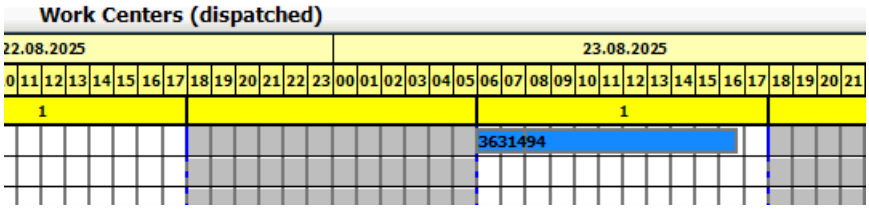
Order	Earliest start	Earl.start time	Start time gap	Free capacity gap
60005349	21.12.2020	08:00:00	17.12.2020 11:25:33	28:34:27
920376	21.12.2020	18:36:00	21.12.2020 16:30:00	02:06:00
920352	22.12.2020	13:48:00	22.12.2020 07:46:00	06:02:00
920403	23.12.2020	06:48:00	22.12.2020 18:08:00	04:40:00
920377	23.12.2020	15:50:00	23.12.2020 08:38:00	07:12:00
920353	08.12.2020	17:40:00		00:00:00

Fields with Information About the Planning Gaps

2.6.5.34 S_UNDO Undo Planning Step

You can use this functionality to reset planning steps.

Initial situation:



Initial Situation

An operation has just been dispatched.

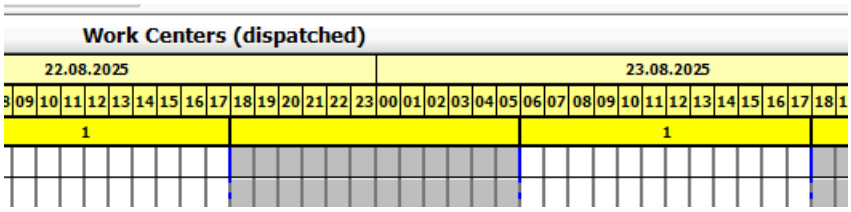
This planning step is to be reset.

Execute the action code



(S_UNDO).

Result:



Result

Dispatching was undone.

Dispatching, deallocating, and rescheduling operations can be undone. Up to 5 planning steps can be undone.

Reverting changes works for most planning activities. Other changes, such as changing the order quantity, creating or deleting a pool ID, changing texts, or converting planned orders to production orders, cannot be undone.

Undoing planning has been realized in such a way that the operations are dispatched to their previous positions again. Therefore, this function is also a planning function with a strategy profile.

As soon as the data has been saved or reloaded, the memory of the planning steps is empty and it is no longer possible to undo planning steps.

Not all planning functions can be undone.

Undo works for the following functions:

- Planning using drag and drop in the graphic: Dispatch, Deallocate, Reschedule.
- S_APALL Deallocate All Operations [page 181]
- S_APGRP Deallocate with Group ID [page 313]
- S_APSC Deallocate via Status Change Without Scheduling [page 182]
- S_APSCG Deallocate Selected Operations and Close Gaps [page 183]
- S_APSEL Deallocate Selected Operations [page 185]
- S_APSELP Deallocate with Pool ID [page 295]
- S_AV06 Dispatching Operations Individually [page 187]
- S_AV07 Deallocating Operations Individually [page 188]
- S_D&D Dispatching Operations with Drag and Drop in the ALV Grid [page 189]
- S_EPALL Dispatch All Operations [page 192]
- S_EPALV Dispatching by Entering Dates in the ALV Grid [page 194]
- S_EPBKFG Two-Step Dispatching with Pool ID [page 300]
- S_EPCAV Dispatch to Component Availability [page 196]
- S_EPGRP Planning with Group ID [page 311]
- S_EPMSQ Dispatching According to Material Master Field [page 198]
- S_EPNP Dispatching Operations of Networks [page 202]
- S_EPRSIN Insert Setup Optimum Operation [page 266]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELL Dispatching with Check on Gaps and Pool Orders [page 210]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]

- S_EPSELX Dispatching Insert in Gaps with and Without Pool Orders [page 212]
- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_EPTBSQ Dispatch by Table [page 222]
- S_EPML Multilevel Planning [page 323]
- S_EPPRLL Parallel Planning with Parallel Sequences [page 287]
- S_EPPRLP Parallel Dispatching with Pool ID [page 280]
- S_EPRQD Dispatch on Requirement Date [page 205]
- S_FPL Dispatch by LMPC Timetable [page 223]
- S_MANP Manual Dispatching [page 233]
- S_MANPL Manual Dispatching List with Gap Check [page 235]
- S_MANPLX Manual Dispatching with Insert [page 237]
- S_PLVERS HJPT Read/Save Plan Version [page 253]
- S_RESCD Reschedule All [page 252]
- S_SHFTPP Shift Production Plan [page 258]

⚠ Restriction

- You can only undo planning steps. It is not possible to restore a reverted planning step.
- Restoring dispatching dates in the past is not possible.
- The sorting of the ALV Grid cannot be restored.
- The selection of data records cannot be restored.
- Changes of work centers for order operations cannot be undone.
- Dispatching and deallocating using the standard functions on the toolbar of the capacity planning table cannot be undone.
- The setup optimum insertion of operations can be undone, but not changes to the setup times of the operations.
- You cannot undo planning that was executed with planning functions that work with the HJPT firming indicator. Planning with Consideration of HJPT Firming Indicator [page 328]

Related Information

S_UNDO Configuration: Undo Planning Step

2.6.5.35 Planning Taking Account of Setup Time

Action codes for dispatching taking into account the setup time of operations.

In the HJPT planning table, there are three dispatching functions for which the setup time of the operations is taken into account and, if necessary, changed:

- S_EPRST Dispatching Using Setup Matrix [page 264]
- S_EPRSIN Insert Setup Optimum Operation [page 266]
- S_OPL Optimized Dispatching [page 268]

2.6.5.35.1 S_EPRST Dispatching Using Setup Matrix

Use

You can use this function to dispatch operations using a heuristic for minimizing the setup times.

The action code S_EPRST does two things:

- It dispatches the selected operations in a sequence that minimizes the total setup time.
- It adjusts the setup time of the operations according to the settings of the setup matrix.

Order operations from several work centers can be processed simultaneously. Dispatching always takes place per work center. Dispatched operations can be rescheduled. They can, therefore, be included in the selection and are then rescheduled together with all other selected operations.

The optimum dispatching sequence is determined from the settings in the setup matrix (transaction OPDA) using a heuristic. The heuristic for PI follows the heuristic for PP.

The setup time of the operations to be dispatched is adjusted automatically according to the transitions in the setup matrix.

If no valid setup sequence can be determined for the order operations, since setup transitions were prohibited in the setup matrix, no dispatching takes place.

The operations to be dispatched are always placed after the last dispatched operation. Already dispatched operations that have not been selected are not changed.

If there is no dispatched operation for the respective resource, or if the last dispatched operation is in the past, the order operations are dispatched at the current time. Then the dispatching is seen as initial dispatching. The setup time of the first operation is adjusted if an initial state has been maintained via the strategy profile (see Initial Setup State checkbox).

> → Remember
>
> - Action codes S_AVRU and S_AVRR can be used to adjust the setup time of operations already dispatched.
> - If no entry was maintained in the matrix for a transition, then no change is made to the setup time for this transition.
> - To ensure that setup-optimized dispatching works, the strategy profiles used must be configured correctly. The LMPC delivery includes preconfigured strategy profiles that can be used.

> ⚠ Restriction
>
> No setup time adjustment is possible for PI planned orders (planned orders for the process industry). However, PI planned orders can be scheduled in an optimum setup time sequence. This means that PI planned orders, if they are processed with this function, are dispatched in an optimum setup time sequence, but the setup times are not adjusted. This is a technical restriction and cannot be changed. These restrictions do not apply to process orders.

Prerequisites

PP Production planning:

- You have defined setup type keys in transaction OP38 (Customizing).
- You have defined setup group categories in transaction OP43 (Customizing).
- You have defined a setup matrix in transaction OPDA.
- You have defined the setup group in the routing settings.
- You have defined setup times in the routing of your materials.

PP-PI Process industry:

- You have defined a default value for the setup time.
- You have adjusted the master recipes.
- You have adjusted the scheduling formulas for the resources.
- You have created material groups as setup groups in the material master.
- You have defined a setup matrix in transaction OPDA.

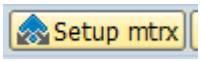
For information about the prerequisites and corresponding settings, see the LMPC Configuration Guide.

Procedure

- Select a number of orders.

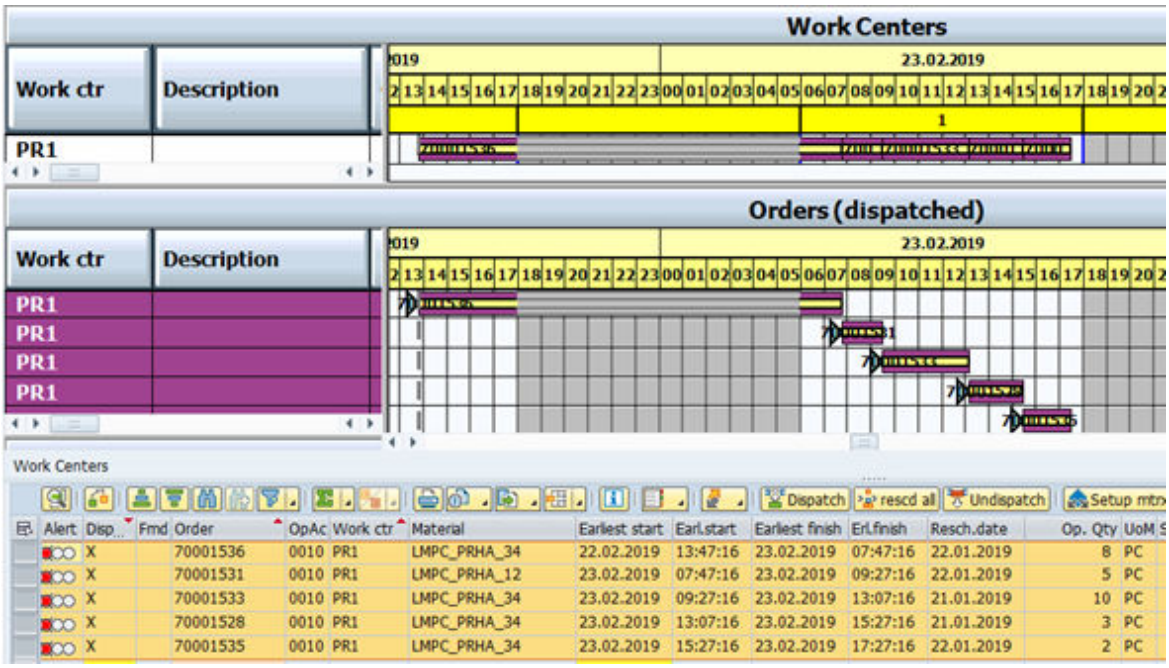
Alert	Disp_	Fmd	Order	OpAc	Work ctr	Material	Earliest start	EarlStart	Earliest finish	ErlFnish	Resch.date	Op. Qty	UoM
			70001531	0010	PR1	LMPC_PRHA_12	23.02.2019	06:00:00	23.02.2019	07:00:00	22.01.2019	5	PC
			70001533	0010	PR1	LMPC_PRHA_34	23.02.2019	14:20:00	23.02.2019	18:00:00	21.01.2019	10	PC
			70001536	0010	PR1	LMPC_PRHA_34	23.02.2019	14:40:00	23.02.2019	17:40:00	22.01.2019	8	PC
			70001528	0010	PR1	LMPC_PRHA_34	23.02.2019	16:40:00	23.02.2019	18:00:00	21.01.2019	3	PC
			70001535	0010	PR1	LMPC_PRHA_34	23.02.2019	17:00:00	23.02.2019	18:00:00	22.01.2019	2	PC

Selection

- Execute the action code 

(S_EPRST).
- Based on the settings in the setup matrix, the heuristic for the dispatching function of the graphical planning table generates an optimum dispatching sequence for the orders and dispatches the orders as soon as possible. The heuristic proceeds sequentially. The logic looks for an optimum dispatching time for dispatching operations sequentially at the target work center. It also searches for a minimum total setup time across all operations. If there are multiple equally good transitions for an operation to be dispatched, the operation is dispatched on the latest date.

- Result:



Result

The operations have been dispatched in an optimum setup time sequence. The entire setup time over all operations, including the initial setup transition, has been minimized.

Related Information

S_EPRST and S_EPRSIN Configuration: Dispatching and Inserting Using Setup Matrix

2.6.5.35.2 S_EPRSIN Insert Setup Optimum Operation

LMPC planning function for adding orders to a position at which the setup time is minimized

Use

This action code inserts the selected operations one after the other into an existing production plan. For each adjacent pair of dispatched operations, it calculates how the total setup time would change if the operation to be dispatched were placed between these two operations. The dispatching position chosen is the position at which the difference between the current total setup time and the future total setup time is the lowest, and the operation is dispatched there. If this is the best place for dispatching, the operation can also be dispatched before the first or the last dispatched operation. If several items are equally good, the last item is chosen.

Dispatching considers the following conditions:

- The sequence of operations within the order is respected
- Planning is not performed in the fixed planning period

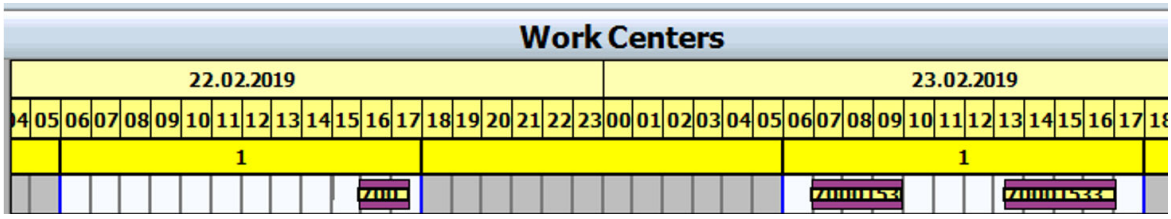
- Operations are not dispatched in the past

> **⚠ Restriction**
>
> When inserting, the setup time is not adjusted, neither for the operation to be dispatched, nor for its new successor after dispatching. You can use the action codes S_AVRU and S_AVRR for setup time adjustment.

> **→ Remember**
>
> - Special feature when dispatching at the beginning: If the function finds out that the new operation to be dispatched is to be set at the beginning before all operations already dispatched, it dispatches the new operation at the start time of the order that is dispatched first. This will postpone this operation.
> - If the setup transitions are prohibited for all possible dispatching positions in the setup matrix, the operation is placed after the last dispatched operation in the work center, even if this transition is prohibited in the setup matrix.
> - If one of the transitions in question is not maintained in the setup matrix, the current setup times from the operation are accepted in PP. In PP-PI, on the other hand, a setup time of 0 is assumed in this case.
> - The same prerequisites apply as for action code S_EPRST

Procedure

- Situation at start:



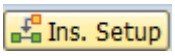
Initial Situation

Orders are already dispatched. An operation should be inserted into the production plan in such a way that the overall setup time increases as little as possible.

- Select the operation that is to be dispatched.

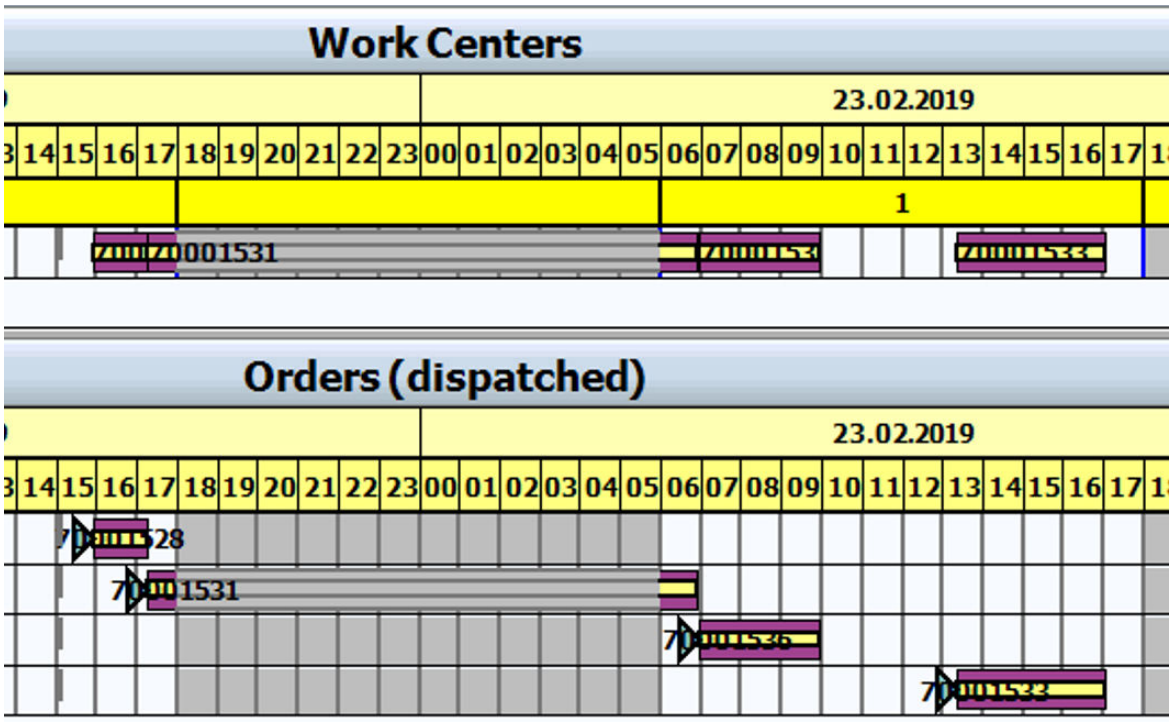
Alert	Disp...	Fmd	Order	OpAc	Work ctr	Material	Earliest start	Earl.start	Earliest finish	Erl.finish
			70001528	0010	PR1	LMPC_PRHA_34	23.02.2019	16:40:00	23.02.2019	18:00:00
			70001535	0010	PR1	LMPC_PRHA_34	23.02.2019	17:00:00	23.02.2019	18:00:00

Selection

- Execute the action code 

(S_EPRSIN).

- Result:



Planning result

In this case, the best position for insertion was the first position before all other operations. The order operation was dispatched there.

Related Information

S_EPRST and S_EPRSIN Configuration: Dispatching and Inserting Using Setup Matrix

2.6.5.35.3 S_OPL Optimized Dispatching

Dispatching with an algorithm for sequencing with or without adjustment of setup times

Use

You can use this function to optimize the dispatching of operations and adjust the setup times of the operations. The dispatching function uses a heuristic to determine the dispatching sequence in such a way that the setup times of the operations become minimal.

For the function, rules must be defined in Customizing that are evaluated to determine the optimum sequence.

The adjustment of the setup times can also be deactivated. You can do this using the parameter settings for the action code. In this case, the setup times defined in Customizing serve as costs for the optimization.

> **Note**
>
> - The setup times are only adjusted if the operations differ according to the rule definition. Operations that connect to each other and are identical after the rule definition are not adjusted.
> - It is not possible to set the setup time to zero. If, for example, the setup times are to be zero for material transitions for the same material, the setup times must be set to zero in the master data. This function then adds the setup times using rule evaluation.

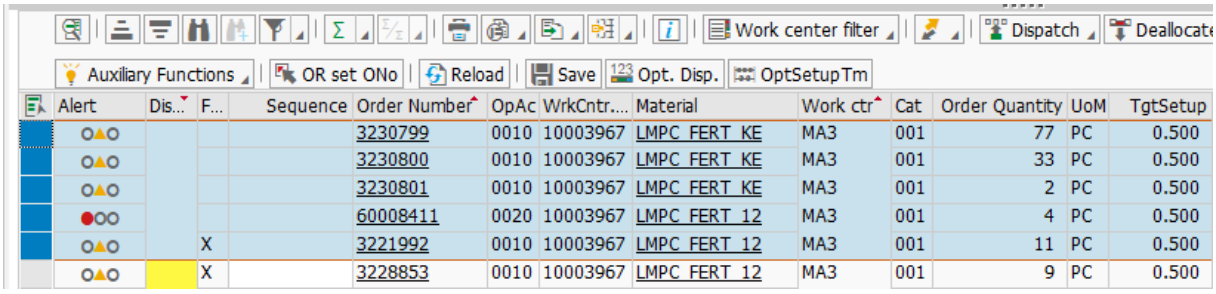
The behavior of the function can be adjusted using a variety of settings. For the possible settings, see the LMPC Configuration Guide. S_OPL, S_OSC Configuration: Optimized Dispatching and Optimized Adjustment of Setup Time

> **→ Tip**
>
> Since the configuration for this function is very complex, it is recommended that you contact SAP for consulting to set up the function.

> **⚠ Restriction**
>
> You can use this function to process operations of planned orders, production orders, and process orders. For planned orders in the process industry (PP-PI), the adjustment of setup times is excluded due to technical restrictions. Only sequencing is possible for PP-PI planned orders. For orders in the process industry, the requirements for the design of the individual phases apply in the same way as for PP-PI optimum dispatching.

Procedure

Select the operations that are to be dispatched.

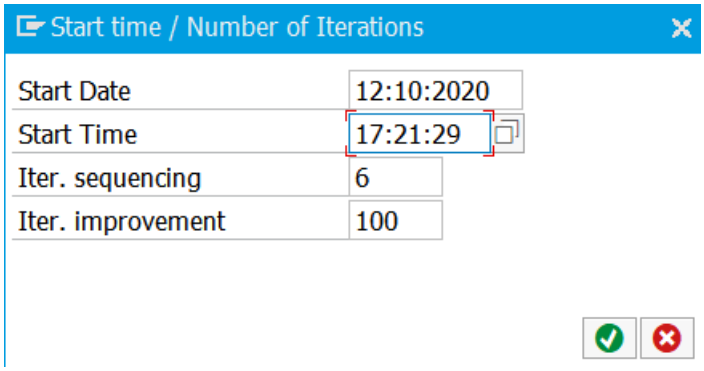


Alert	Dis...	F...	Sequence	Order Number	OpAc	WrkCntr....	Material	Work ctr	Cat	Order Quantity	UoM	TgtSetup
				3230799	0010	10003967	LMPC_FERT_KE	MA3	001	77	PC	0.500
				3230800	0010	10003967	LMPC_FERT_KE	MA3	001	33	PC	0.500
				3230801	0010	10003967	LMPC_FERT_KE	MA3	001	2	PC	0.500
				60008411	0020	10003967	LMPC_FERT_12	MA3	001	4	PC	0.500
		X		3221992	0010	10003967	LMPC_FERT_12	MA3	001	11	PC	0.500
		X		3228853	0010	10003967	LMPC_FERT_12	MA3	001	9	PC	0.500

Selection of Operations

Execute the action code Opt. Disp. (S_OPL).

If you have specified that you want to execute manual dispatching or/and specify the number of iterations for the optimization run, a popup appears.

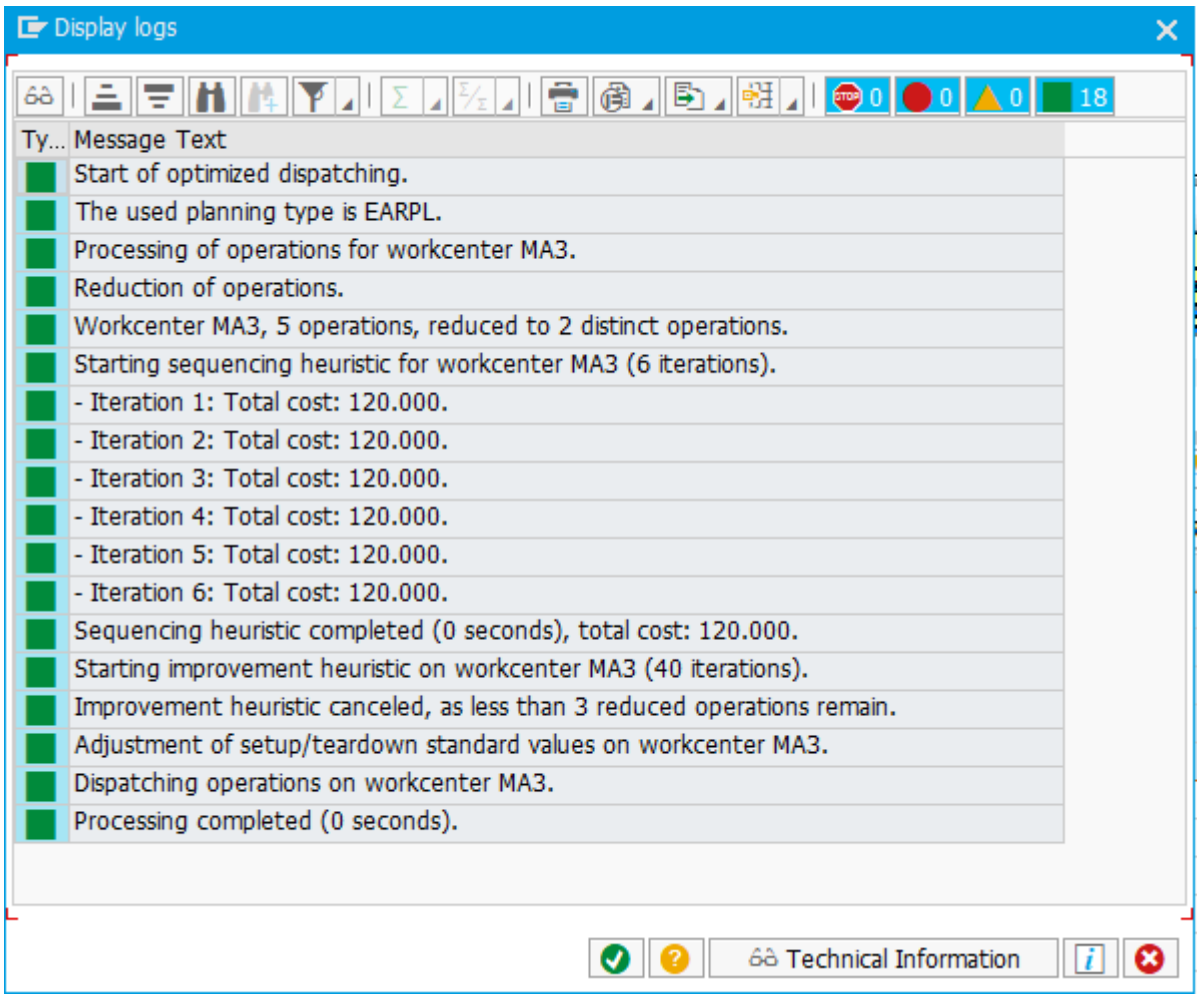


Selection Start Time / Number of Iterations

Choose the required start time and/or the required number of iterations for the sequence heuristic or improvement heuristic. Confirm your selection.

Processing starts.

If you have specified that the log is to be displayed, a dialog box appears.



Log Popup Window

The messages in the log show the process flow of the function.

The operations of the orders are always processed for each work center.

Preprocessing

First, preprocessing is started. The rules for the work center are read.

The selected operations are reduced to different operations with regard to the rules. For the same operations, it is sufficient if only one operation is entered as a representative for all other operations in the sequence optimization. This saves runtime. After the sequence has been optimized, the operations that were sorted out are included in the number of operations again and are sorted where the representative operation is.

Sequence Heuristic

After preprocessing, the sequence heuristic starts.

This randomly selects an operation from the quantity of reduced operations as the start operation. Now, another operation is selected randomly. All possible positions of this operation are checked and the operation is placed where the fewest additional costs are incurred. In the case of two operations, there is only before or after. If there are several operations, there are therefore more possible positions. This procedure continues until all operations are put into a sequence. This positioning results in total costs, which are output as a message in the log. This is the first iteration.

The placement process is now repeated as many times as the number of iterations set in the settings. The total costs are calculated each time.

At the end of sequencing, the sequence that has the lowest total costs is selected. If the costs are the same for different sequences, the first sequence with the lowest total costs is selected.

If there are already dispatched operations at the work center, the last dispatched operation is determined and also taken into account in the heuristic. This operation is then assumed to be a fixed start operation. The determination of the start operation depends on the configured dispatching strategy: as early as possible, last dispatched operation on the resource, or block planning. The system searches for the operation that the new operations to be dispatched are to follow.

> → Remember
>
> If you want to dispatch operations in a dispatching gap, note that the logic determines the last dispatched operation at the start of the gap and takes this into account. However, it does not take into account which operations are already dispatched at the end of the gap. This means that the logic is not aligned with the operations that follow. Only ever with the preceding operations.

Improvement Heuristic

If an improvement of the result is set using the improvement heuristic, it is executed next.

The improvement heuristic is only recommended for very complex planning scenarios. As a rule, the improvement heuristic is not required because sequencing will already deliver a very good result.

The improvement heuristic works according to the following principle: Cut and paste.

It selects a random section of a random number of operations from the determined sequence. This section is removed from the sequence and an attempt is made to insert this section into all remaining possible positions. All possible positions are tried out and the position with the lowest total costs is selected. This is an iteration.

A new section with a random number of operations is selected for each iteration.

If the improvement heuristic is used, it should be set with a high number of iterations. An improvement can only be made if many alternatives are tried out.

The total costs of the respective iteration are written to the log. In this way, you can see whether the total costs improve at all with additional iterations.

The improvement heuristic can only be executed if there are at least three different operations in the reduced selection.

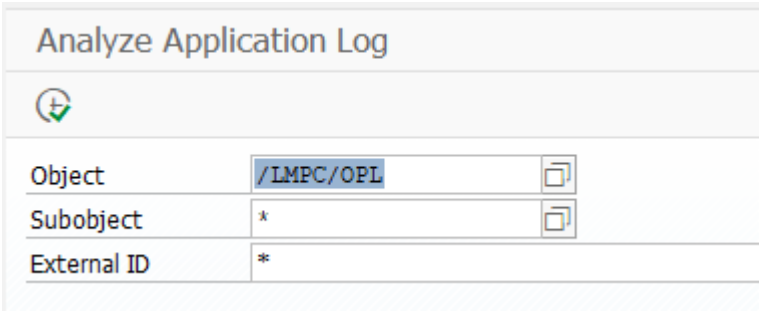
Log

It is recommended that you only use the log when setting up the function. The log will probably not be relevant for a user who wants to dispatch operations.

The log is not lost. It is stored in the database each time the function is called. When you save, the system transfers an expiration date that is six months in the future.

You can use transaction SLG1 to view the saved logs.

Log object /LMPC/OPL.



Evaluation of Log for Planning Function

You can use the log to find out how the total costs or the total setup time improve for each iteration. This enables you to identify the number of iterations that make sense in the respective system for each maintained rule set. There is always a conflict of aims between the runtime and the improvement of the result. As the number of iterations increases, the result will usually improve further, but the runtime of the function will increase. By choosing Try Out, you define a number of iterations in which an acceptable runtime is achieved with a sufficiently good solution.

Adjustment of Setup Time and Sequence

After sequencing and improvement have been completed, the setup times of the operations are adjusted if this is activated via a parameter in Customizing.

If you have specified that only one sequence is to be created, you see the proposal for the dispatching sequence in the “Sequence” column.

Alert	Dis...	F...	Sequence	Order Number	OpAc	WrkCntr....	Material	Work ctr	Cat	Order Quantity	UoM	TgtSetup
			4	3230800	0010	10003967	LMPC_FERT_KE	MA3	001	33	PC	0.500
			5	3230801	0010	10003967	LMPC_FERT_KE	MA3	001	2	PC	0.500
			1	60008411	0020	10003967	LMPC_FERT_12	MA3	001	4	PC	0.500
		X	2	3221992	0010	10003967	LMPC_FERT_12	MA3	001	11	PC	0.500
			3	3230799	0010	10003967	LMPC_FERT_KE	MA3	001	77	PC	2.000
		X		3228853	0010	10003967	LMPC_FERT_12	MA3	001	9	PC	0.500

Example of Dispatching Sequence

If the change to the setup times is set, you see the changed setup requirements in the column for the target setup values. The bars in the graphic are adjusted accordingly.

If the sequence of the orders meets your requirements, you can now dispatch them using the action code for dispatching by sequence entered (S_EPSEQ). S_EPSEQ Dispatch According to the Sequence Entered [page 215]

Immediate Dispatching

If you have set direct dispatching in the action code, the operations are dispatched immediately in the determined sequence and, if set, the setup times are also adjusted.

Alert	Dis...	F...	Sequence	Order Number	OpAc	WrkCntr....	Material	Work ctr	Cat	Order Quantity	UoM	TgtSetup
●○○	X			60008411	0020	10003967	LMPC_FERT_12	MA3	001	4	PC	0.500
○▲○	X	X		3221992	0010	10003967	LMPC_FERT_12	MA3	001	11	PC	0.500
○▲○	X	X		3230799	0010	10003967	LMPC_FERT_KE	MA3	001	77	PC	2.000
○▲○	X	X		3230800	0010	10003967	LMPC_FERT_KE	MA3	001	33	PC	0.500
○▲○	X	X		3230801	0010	10003967	LMPC_FERT_KE	MA3	001	2	PC	0.500
○▲○		X		3228853	0010	10003967	LMPC_FERT_12	MA3	001	9	PC	0.500

Result of Dispatching with Setup Time Adjustment

The time at which the operations are dispatched depends on the selected planning type and the settings in the strategy profile used. Different dispatching categories can be used:

- Dispatch as early as possible.
- Dispatching after the last dispatched operation at the work center.
- Manual dispatching by entering the start time.
- Block planning.

In block planning, the earliest start time is determined from the currently scheduled times of the selected operations and dispatching begins at this time. The operations thus remain in the “block” for which the first operation was scheduled. The dispatching strategies are defined using a parameter in Customizing.

Optimized dispatching can also be executed in the background via a nightly planning run. For this, a job is defined for the program /LMPC/HJPT. You can use transaction SLG1 to evaluate the log for dispatching. Program /LMPC/HJPT Background Processing [page 26]

The functionality described here is only an example. The behavior may differ depending on the selected settings in your system.

> **→ Tip**
>
> You can temporarily save the sequence that the function created in the LMPC HJPT function of the planning version. This enables you to save a plan that the function has created for later use. This is useful if the function is executed repeatedly to generate and compare different production plans. S_PLVERS HJPT Read/Save Plan Version [page 253]

> **⚠ Restriction**
>
> - The planning logic is always executed per work center. Relationships between operations at different work centers cannot be taken into account. This is particularly important if an order exists with operations at different work centers. For such planning, it is recommended that you only execute optimized dispatching on the bottleneck machine. Due to midpoint scheduling, the operations at the other work centers are scheduled correctly in the time sequence.
> - The planning logic is pure sequencing. During sequencing, dates, such as MRP availability or requirement date, cannot be taken into account. This is a technical restriction and cannot be changed. This function is a heuristic. A mathematical optimization, which would be required to take dates into account, cannot be provided in the LMPC HJPT planning table.

The requirement date cannot be taken into account directly, but indirectly. For example, you can generate costs if the requirement date of the predecessor is later than the requirement date of the successor. As a result, orders with earlier requirement dates tend to be dispatched earlier.

2.6.5.36 Planning with Parallel Operations and Tool Planning

Parallel Planning and Tool Planning

With the HJPT planning table, it is possible to plan operations in parallel for capacities of work centers.

Most HJPT action codes are intended for sequential planning, for which operations are in sequence and cannot overlap. However, with a few action codes, it is possible to plan operations in parallel.

There are different use cases as to why operations must lie in parallel. Parallel operations can be used, for example, to map the occupancy of tools. Tools that are used in the production of different materials are mapped as work centers for this purpose.

During dispatching, the planning function searches for a planning window in which all parallel operations can lie in parallel. This ensures that the tool for producing the order is available and is not occupied by another order.

In the HJPT planning table, there are three different approaches for implementing parallel dispatching:

- Parallel Planning with Suboperations [page 274]
- Parallel Planning with Several Individual Capacities [page 277]
- S_EPPRLL Parallel Planning with Parallel Sequences [page 287]

→ Tip

If you have any questions about the configuration of the master data and the configuration of the planning functions for setting up parallel planning, please contact LMPC Consulting.

2.6.5.36.1 Parallel Planning with Suboperations

Usage

In parallel planning with suboperations, suboperations are created for the main operations via the routing for the respective material.

The suboperations, for example, occupy the capacity of a tool that is mapped as a separate work center.

A large number of LMPC HJPT planning functions can be used for orders with suboperations.

You can use the following functions to plan operations with suboperations:

- S_APALL Deallocate All Operations [page 181]
- S_APSEL Deallocate Selected Operations [page 185]
- S_AV06 Dispatching Operations Individually [page 187]
- S_AV07 Deallocating Operations Individually [page 188]

- S_D&D Dispatching Operations with Drag and Drop in the ALV Grid [page 189]
- S_EPALL Dispatch All Operations [page 192]
- S_EPCAV Dispatch to Component Availability [page 196]
- S_EPMSQ Dispatching According to Material Master Field [page 198]
- S_EPRQD Dispatch on Requirement Date [page 205]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSELX Dispatching Insert in Gaps with and Without Pool Orders [page 212]
- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_EPTBSQ Dispatch by Table [page 222]
- S_MANP Manual Dispatching [page 233]
- S_MANPLX Manual Dispatching with Insert [page 237]
- S_MVEORD Move Order Operations in the Pool [page 237]
- S_RESCD Reschedule All [page 252]
- S_EPRST Dispatching Using Setup Matrix [page 264]
- S_EPRSIN Insert Setup Optimum Operation [page 266]
- S_OPL Optimized Dispatching [page 268]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- S_APSELP Deallocate with Pool ID [page 295]
- S_SHFTPP Shift Production Plan [page 258]

The following functions **cannot** be used to plan operations with suboperations:

- S_EPNP Dispatching Operations of Networks [page 202]
- S_EPSELL Dispatching with Check on Gaps and Pool Orders [page 210]
- S_FPL Dispatch by LMPC Timetable [page 223]
- S_MANPL Manual Dispatching List with Gap Check [page 235]
- S_EPBKFG Two-Step Dispatching with Pool ID [page 300]
- S_EPML Multilevel Planning [page 323]

> ⚠ Restriction
>
> The functions can only be used with suboperations if the capacities of the work centers are only utilized by one operation each. The functions do not support multiple utilization of capacities.

Example

There is an order with an operation at a work center and a suboperation belonging to this operation at another work center.

In the ALV Grid, select the operation or suboperation. It is sufficient to select one operation, the operation or the suboperation. Both operations are always dispatched.

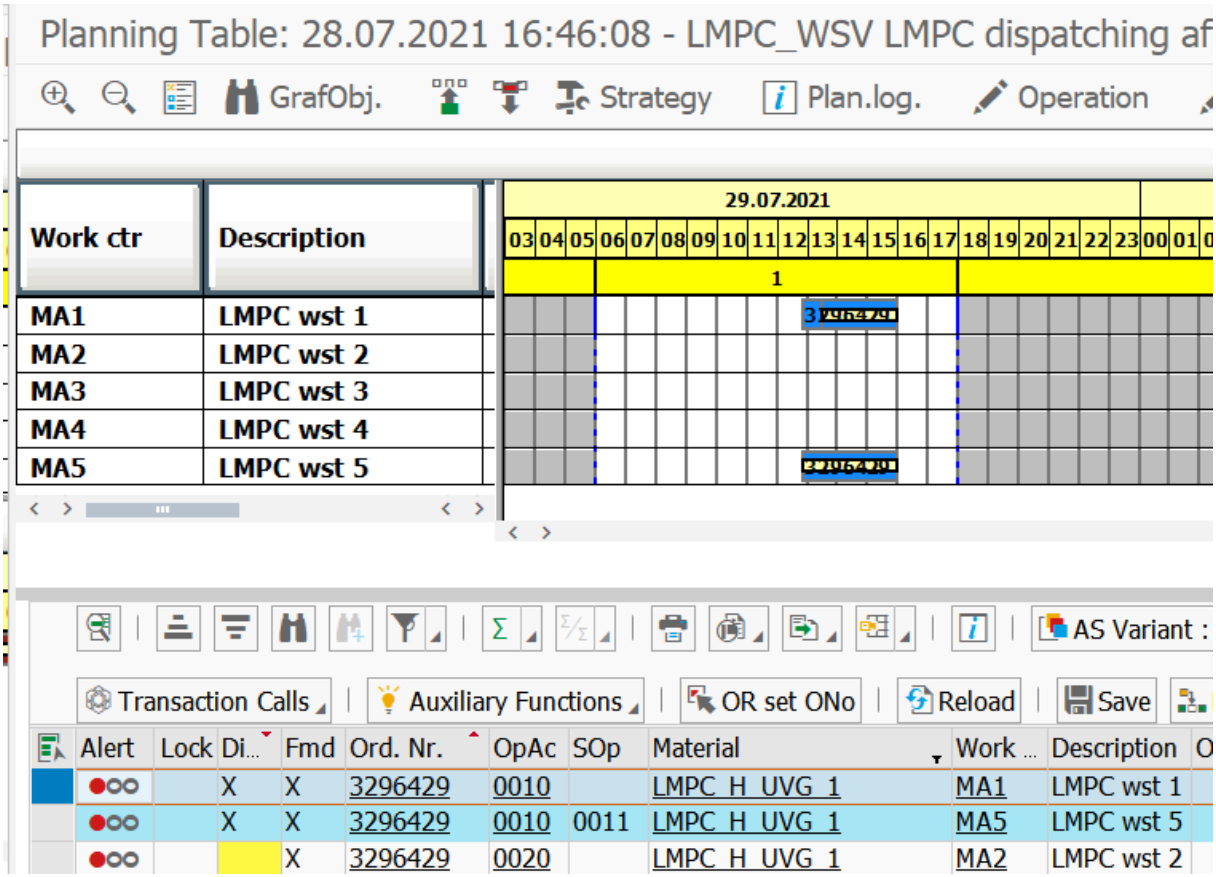
Alert	Lock	Di...	Fmd	Ord. Nr.	OpAc	SOp	Material	Work ...	Description
●○○			X	3296429	0010		LMPC_H_UVG_1	MA1	LMPC wst 1
●○○			X	3296429	0010	0011	LMPC_H_UVG_1	MA5	LMPC wst 5
●○○			X	3296429	0020		LMPC_H_UVG_1	MA2	LMPC wst 2

Select Order Operation

In this example, the operation is on work center MA1 and the suboperation on work center MA5.

Execute the required HJPT planning function. For example, Dispatching for Date. Disp targ (S_EPSELT).

Result:



Alert	Lock	Di...	Fmd	Ord. Nr.	OpAc	SOp	Material	Work ...	Description
●○○		X	X	3296429	0010		LMPC_H_UVG_1	MA1	LMPC wst 1
●○○		X	X	3296429	0010	0011	LMPC_H_UVG_1	MA5	LMPC wst 5
●○○			X	3296429	0020		LMPC_H_UVG_1	MA2	LMPC wst 2

Dispatching Result

The operation and its suboperation were dispatched in parallel.

→ Remember

- When dispatching, the operation and suboperation are always dispatched together. It is not possible to dispatch only the operation or only the suboperation. The same applies to deallocation.
- Unlike other planning functions, dispatching also takes place if the work center of the suboperation is not open in the planning table. The operation and suboperation always have the same dispatching status.
- It is recommended that you open all work centers in the planning table that contain the suboperations for the operations. When dispatching, only the capacity offer of open work centers can be taken into

account. If you dispatch an operation and the work center of the suboperation is not open, the capacity offer of the unopened work center is not taken into account. Dispatching takes place infinitely for the suboperation. This can lead to an overload on the unopened work center.

- It is not possible to dispatch suboperations if the work center of the related operation is not open in the planning table. It is not possible to dispatch only suboperations without the corresponding operation.

2.6.5.36.2 Parallel Planning with Several Individual Capacities

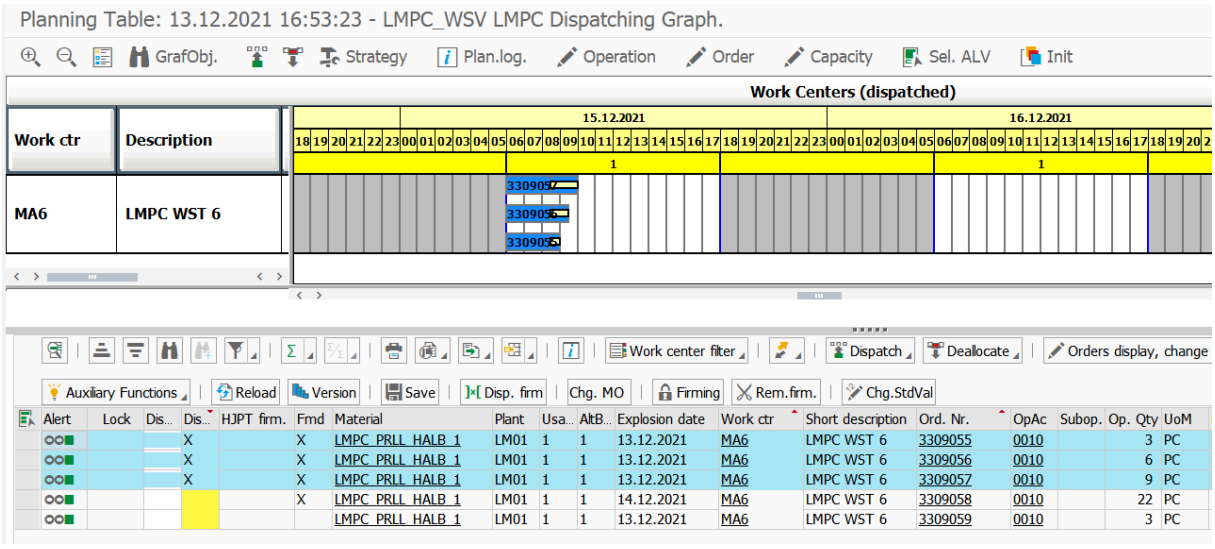
Use

You can set the capacities of work centers in such a way that several operations can be planned at the work centers in parallel.

To do this, you need to make several settings:

- The capacity offer must have several individual capacities.
- The capacity must be set as being able to be used by several operations.
- The scheduling formulas must be set in such a way that the duration of an operation is not dependent on the number of individual capacities.

If these settings are made in this form, the number of individual capacities specifies how many operations can be parallel.



Example: Parallel Assignment of a Capacity

You can use the following LMPC HJPT dispatching functions to dispatch operations in parallel to a capacity that contains several individual capacities:

- S_AV06 Dispatching Operations Individually [page 187]
- S_EPALL Dispatch All Operations [page 192]
- S_EPALV Dispatching by Entering Dates in the ALV Grid [page 194]

- S_EPPRLP Parallel Dispatching with Pool ID [page 280]
- S_EPRQD Dispatch on Requirement Date [page 205]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_MANP Manual Dispatching [page 233]
- S_RBPL Rule-Based Dispatching [page 240]
- S_RESCD Reschedule All [page 252]
- S_RESCPF Reschedule: HJPT Firming Indicator and Parallel Planning with Pool ID [page 333]

You should pay particular attention to the function S_EPPRLP. This function dispatches operations with the same pool ID so that they start at the same start time. The creation of the order pools for this function and the function itself are described in the following chapters.

The rule-based planning function S_RBPL also uses this planning logic.

No other planning functions can be used for this planning scenario. If you have questions about the selection and functioning of the LMPC HJPT planning functions, please contact LMPC Consulting.

> ⚠ Restriction
>
> Planning with several individual capacities should not be confused with planning on the individual capacities. It is not possible to use an HJPT planning function to plan the operations to individually defined individual capacities and to assign the operations to a specific individual capacity. Planning is only possible for a total capacity that contains several individual capacities.

2.6.5.36.2.1 S_PBPRLL Form Order Pool for Parallel Dispatching with Pool ID

Use

The function S_PBPRLL belongs to the function for parallel dispatching with pool ID S_EPPRLP, which is described in the following section. Function S_PBPRLL forms the order pools for the dispatching function.

Using the pool ID that is assigned to the order operations, you define which operations are to start at the same time later when dispatching.

A maximum of as many operations of a work center as individual capacities are available for the scheduling-relevant capacity of the work center can be added to an order pool.

S_PBPRLL and S_EPPRLP can be used for PP planned and production orders, as well as for PP-PI planned and process orders.

Procedure

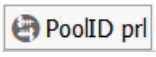
Select the order operations that are to be dispatched in parallel.

Alert	Lock	Dis...	Order pool	Order Number	Material	Plant	Work center	Short description
				60008509	LMPC_FERT_KE	LM01	MA4	LMPC wst 4
				3309671	LMPC_FERT_34	LM01	MA4	LMPC wst 4
				60008677	LMPC_HALB_34	LM01	MA4	LMPC wst 4
				3307471	LMPC_FERT_12	LM01	MA4	LMPC wst 4
				3233582	LMPC_FERT_KE	LM01	MA4	LMPC wst 4
				3233562	LMPC_FERT_KE	LM01	MA4	LMPC wst 4

Selection of Operations

You can only select operations for the same work center. If this condition is violated, the function terminates processing.

In this example, there are four individual capacities for the scheduling-relevant capacity of the machine, so up to four operations can be selected.

Execute the action code for forming order pools for parallel dispatching 

(S_PBPRLL).

Result:

Alert	Lock	Dis...	Order pool	Order Number	Material	Plant	Work center	Short description
			1032	60008509	LMPC_FERT_KE	LM01	MA4	LMPC wst 4
			1032	3309671	LMPC_FERT_34	LM01	MA4	LMPC wst 4
			1032	60008677	LMPC_HALB_34	LM01	MA4	LMPC wst 4
			1032	3307471	LMPC_FERT_12	LM01	MA4	LMPC wst 4
				3233582	LMPC_FERT_KE	LM01	MA4	LMPC wst 4
				3233562	LMPC_FERT_KE	LM01	MA4	LMPC wst 4

Result of Pool Formation

The operations have all been assigned the same pool ID.

You can only use this function to set the pool ID. You can use the function S_POOLID to remove the pool ID.
S_POOLID Create Order Pool Manually [page 290]

⚠ Restriction

- Only data records without a pool ID can be processed. The function terminates if operations with a pool ID were selected. It is not possible to add operations to an existing order pool.
- It is not possible to manually assign a pool ID by making an entry in a popup window. The pool ID is determined using a number range. If no number range is maintained, a 12-digit random number is generated.
- Only data records for the same work center can be processed.
- It is not intended that more than one operation for the same order is processed at the same work center. Only orders that have exactly one operation at the work center can be processed.
- The number of individual capacities is checked using the capacity offer at the work center. The offer is determined on the first day of the planning period. If the first day of the planning period is in the past, the user's local date is used. If the day being checked does not have capacity offer, the next day with capacity offer is checked. The number of individual capacities should be identical throughout the planning period. When forming the pool IDs, the time at which the operations of the order pool are dispatched is not yet defined. During later dispatching, operations can be dispatched in the entire planning period. The planning function can only work correctly if the number of individual capacities is constant in the entire planning period.

- The pool ID is always assigned for the entire order. All order operations receive the pool ID, even if only one operation was selected. However, in this planning scenario, it is not intended for orders to have more than one operation. Note also the restrictions for processing in the associated planning function.

2.6.5.36.2.2 S_EPPRLP Parallel Dispatching with Pool ID

Use

You can use this function to dispatch operations from the order pool in such a way that all operations with the same pool ID have the same start time. After dispatching, the operations are on the same capacity in parallel and have the same start time.

Operations are grouped in an order pool for this function using the function S_PBPRLL, which was described in the preceding section. S_PBPRLL Form Order Pool for Parallel Dispatching with Pool ID [page 278]

S_PBPRLL and S_EPPRLP can be used for PP planned and production orders, as well as for PP-PI planned and process orders.

Certain settings must be made in the master data so that this planning function can be used. The settings are described in the section on parallel planning with several individual capacities. Parallel Planning with Several Individual Capacities [page 277]

The function has three different logics:

- Logic 1: Connect to dispatched operations.
- Logic 2: Manual dispatching with insert.
- Logic 3: Dispatch using drag and drop

You use parameter settings to define the logic used. S_EPPRLP Configuration: Parallel Dispatching with Pool ID

Logic 1: Connect to the end of the production plan without gaps

Several order pools can be dispatched at the same time. The function searches for the last dispatched operation at the work center. At its end time, the new operations to be dispatched are connected without gaps. If there are no dispatched operations at the work center, dispatching takes place at the current time. Both operations with and without a pool ID can be selected. Operations with a pool ID are dispatched in parallel. Operations without a pool ID are dispatched sequentially. Operations that have already been dispatched can be included in the selection. They will be rescheduled.

Logic 2: Inserting Operations into the Production Plan

A popup window is used to query the desired start time for the selected operations. If an operation has already been dispatched at the desired start time, the behavior of the function depends on the parameter settings.

For the standard logic, the start time is corrected to the end time of the operation that has already been dispatched. The selected order pools are inserted after this operation. All operations that are dispatched after this time are shifted.

You can use a parameter to activate a special logic for insertion. If the special logic is active, the selected operations are inserted at the desired start time. The operations that have already been dispatched at this point are also shifted to all subsequent operations.

Operations that have already been dispatched are moved in order pools in such a way that the operations have parallel start times. Operations that have not been assigned a pool ID are rescheduled sequentially. This means that they are scheduled one after the other.

Operations that have already been dispatched are rescheduled without gaps. All operations that lie after the desired time are rescheduled. The operations then connect to the newly dispatched operations without gaps. Both operations with and without a pool ID can be selected. Operations with a pool ID are dispatched in parallel. Operations without a pool ID are dispatched sequentially.

Operations that have already been dispatched can be included in the selection. They will be rescheduled.

> → Remember
>
> If operations that have already been dispatched are rescheduled into the future, gaps remain in the previous positions. Only those operations that lie after the dispatching date are connected without gaps.

Logic 3: Dispatching and Rescheduling Using Drag and Drop

There are three options for dispatching using drag and drop:

- In the ALV Grid in two steps.
- In the ALV Grid in one step.
- Using the capacity planning table.

When planning using the ALV Grid, one or more operations are drawn between operations that have already been dispatched. In the two-step procedure, these operations must still be selected for dispatching and the action code must be executed. In the one-step procedure, immediate dispatching takes place when the respective operation is stored.

> ⓘ Note
>
> For this type of planning, the operations in the ALV Grid must be sorted in ascending order, according to the start times of the capacity requirements.

When planning using the capacity planning table, operations can be dispatched, deallocated, and rescheduled. Operations with a pool ID are dispatched in parallel. Operations without a pool ID are dispatched sequentially.

> ⚠ Restriction
>
> - With this function, only forward scheduling is possible. Backward scheduling is not supported.
> - The system does not check whether there is a sufficient number of individual capacities for parallel dispatching of the operations. This check is already implemented in the function for creating the order pool S_PBPRLL. Therefore, this planning function can only be used to process order pools that were formed with the action code S_PBPRLL.
> - The logics were developed for dispatching operations at a work center. Dispatching across work centers is not supported. Therefore, it is also not possible to dispatch all operations of an order to different work centers at the same time. If you want to process orders with several operations at different work centers, it is recommended that you only plan the bottleneck work center. Using midpoint scheduling, the times of the operations at the other work centers are adjusted automatically.
> - The logics have been developed in such a way that only one operation per order exists at a work center.
> - Operations from several work centers can be planned at the same time, but the operations are only processed for each work center. The order pools are only created for operations of a work center. For

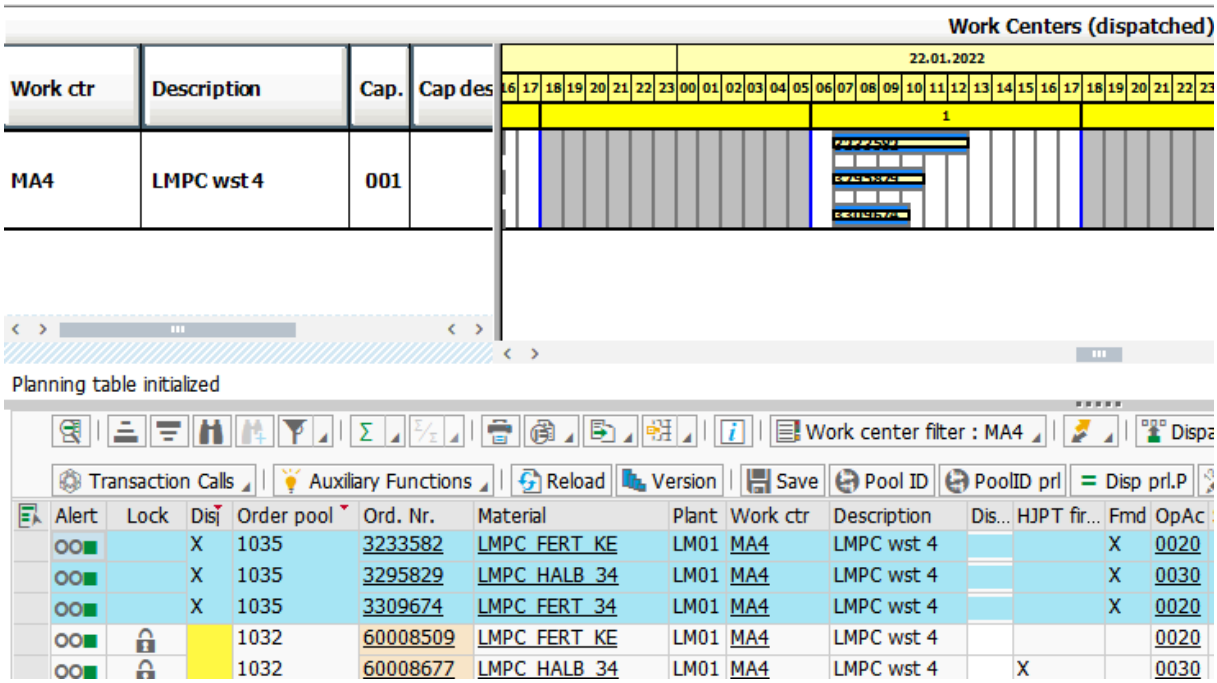
the function for inserting for each work center, the system displays a dialog box for querying the start time.

- Using the LMPC action code limitation is only possible for this function with limitations because the function reads operations independently and no check for action code limitation is applied to these operations that have been read. Action Code Limits [page 104]

Procedure

Logic 1: Connect to the end of the production plan without gaps

Initial situation:



Initial Situation

To start with, an order pool with three operations has already been dispatched.

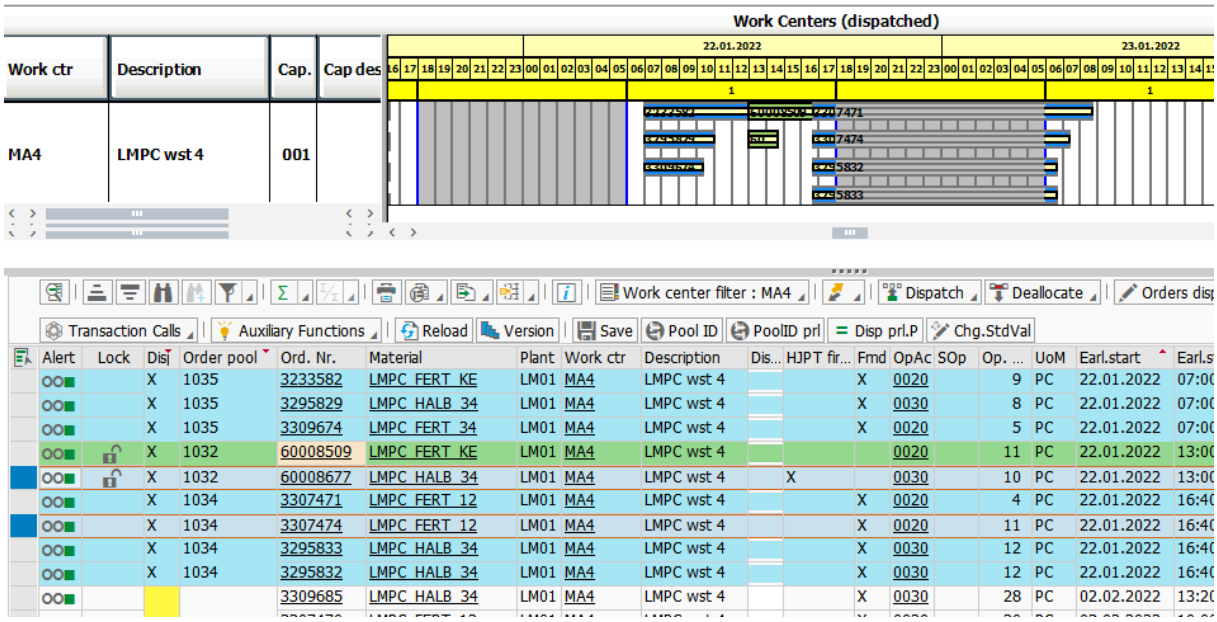
Select one or more operations from order pools. It is sufficient to select only one operation for each order pool. The function reads all operations that belong to an order pool and have not been selected.

Alert	Lock	Disj	Order pool	Ord. Nr.	Material	Plant	Work ctr	Description
		X	1035	3233582	LMPC_FERT_KE	LM01	MA4	LMPC wst 4
		X	1035	3295829	LMPC_HALB_34	LM01	MA4	LMPC wst 4
		X	1035	3309674	LMPC_FERT_34	LM01	MA4	LMPC wst 4
			1032	60008509	LMPC_FERT_KE	LM01	MA4	LMPC wst 4
			1032	60008677	LMPC_HALB_34	LM01	MA4	LMPC wst 4
			1034	3307474	LMPC_FERT_12	LM01	MA4	LMPC wst 4
			1034	3307471	LMPC_FERT_12	LM01	MA4	LMPC wst 4
			1034	3295833	LMPC_HALB_34	LM01	MA4	LMPC wst 4

Selection of Operations

Execute the action code = Disp prl.P (S_EPPRLP).

Result:

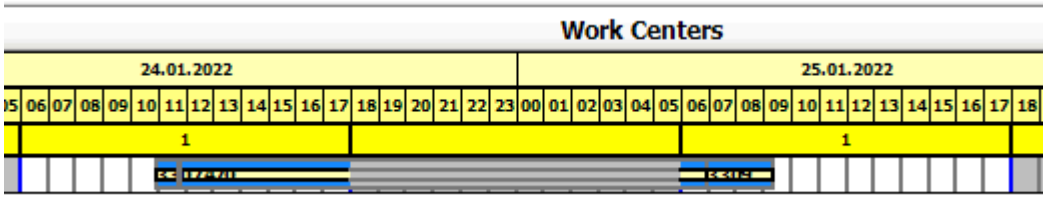


Dispatching Result

The two selected order pools have been dispatched in such a way that they connect directly to the order pool that has already been dispatched. The operations of the subsequent order pool do not start until all operations of the preceding order pool have been completed.

Logic 2: Inserting Operations into the Production Plan

Initial situation:

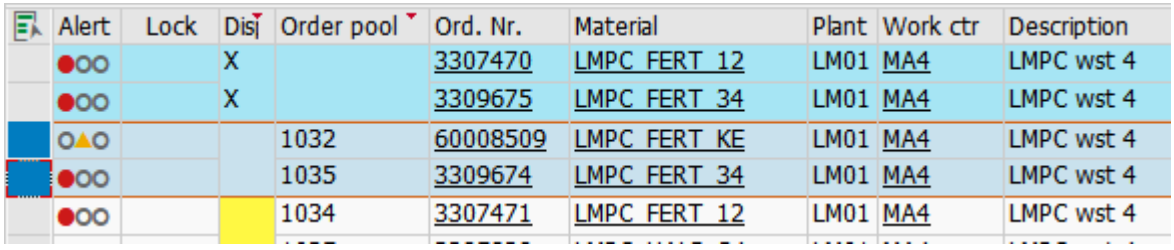


Situation at Start

Some operations have already been dispatched sequentially.

Two order pools are to be inserted between the operations that have already been dispatched.

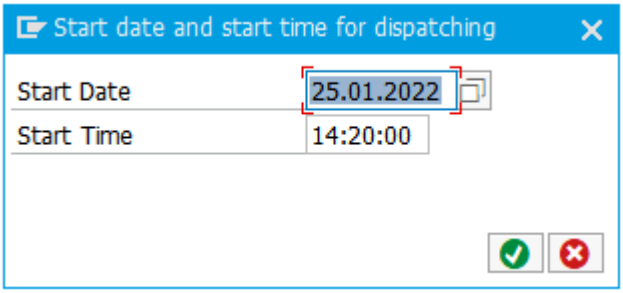
Select at least one operation per order pool.



Selection of Operations

Execute the action code = Disp prl.P (S_EPPRLP).

A popup window for entering the desired start time appears.



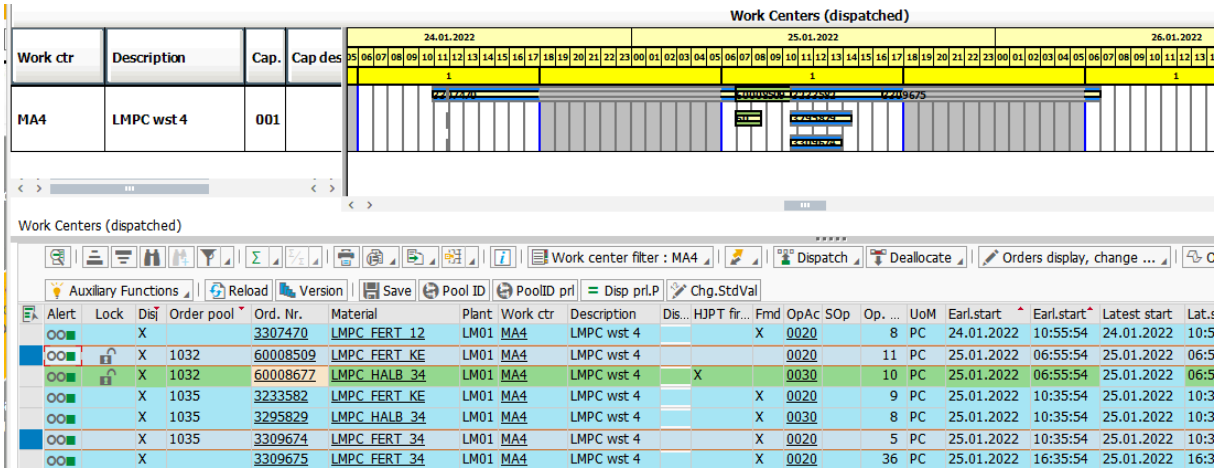
Popup Window for Entering Start Time

In this example, the start time is chosen so that it is during the first dispatched operation.

The logic automatically corrects the start time internally to the end of the operation that has already been dispatched, and inserts the new operations to be dispatched after this operation.

> → Tip
>
> A parameter can be used to change the logic in such a way that the operations are dispatched exactly at the start time entered. S_EPPRLP Configuration: Parallel Dispatching with Pool ID

Result:



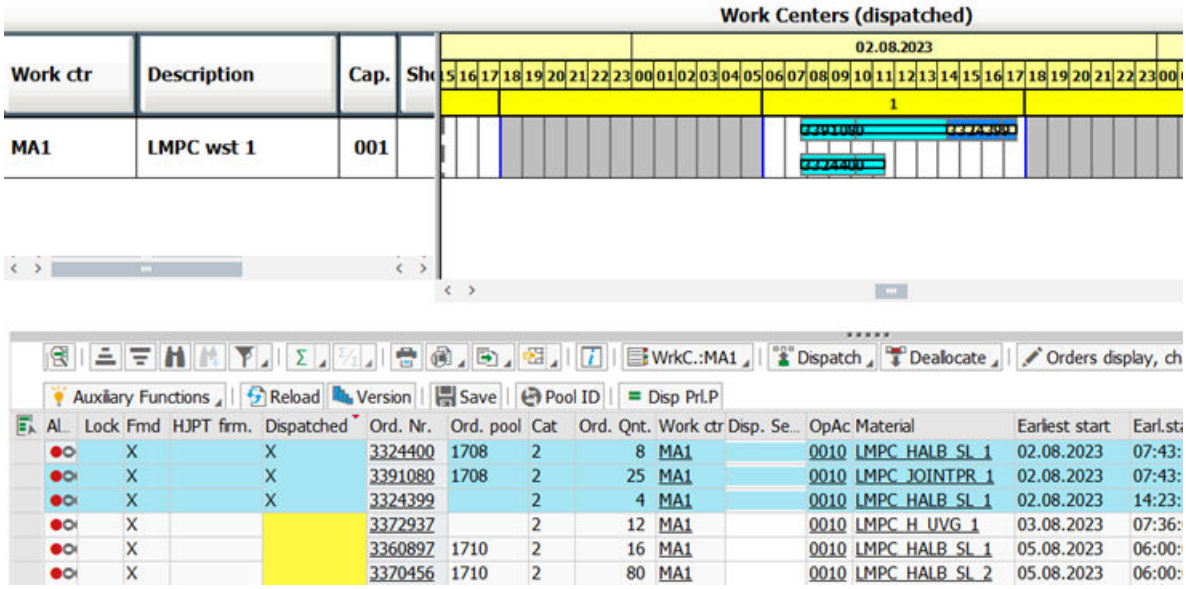
Alert	Lock	Dis	Order pool	Ord. Nr.	Material	Plant	Work ctr	Description	Dis...	HJPT fir...	Fmd	OpAc	SOp	Op. ...	UoM	Earl.start	Earl.start	Latest start
		X		3307470	LMPC_FERT_12	LM01	MA4	LMPC wst 4			X	0020		8	PC	24.01.2022	10:55:54	24.01.2022
		X	1032	60008509	LMPC_FERT_KE	LM01	MA4	LMPC wst 4				0020		11	PC	25.01.2022	06:55:54	25.01.2022
		X	1032	60008677	LMPC_HALB_34	LM01	MA4	LMPC wst 4		X		0030		10	PC	25.01.2022	06:55:54	25.01.2022
		X	1035	3233582	LMPC_FERT_KE	LM01	MA4	LMPC wst 4			X	0020		9	PC	25.01.2022	10:35:54	25.01.2022
		X	1035	3295829	LMPC_HALB_34	LM01	MA4	LMPC wst 4			X	0030		8	PC	25.01.2022	10:35:54	25.01.2022
		X	1035	3309674	LMPC_FERT_34	LM01	MA4	LMPC wst 4			X	0020		5	PC	25.01.2022	10:35:54	25.01.2022
		X		3309675	LMPC_FERT_34	LM01	MA4	LMPC wst 4			X	0020		36	PC	25.01.2022	16:35:54	25.01.2022

Dispatching Result

The operations of the two order pools were inserted into the production plan in parallel. An operation that has already been dispatched has been moved.

Logic 3: Dispatch Using Drag and Drop

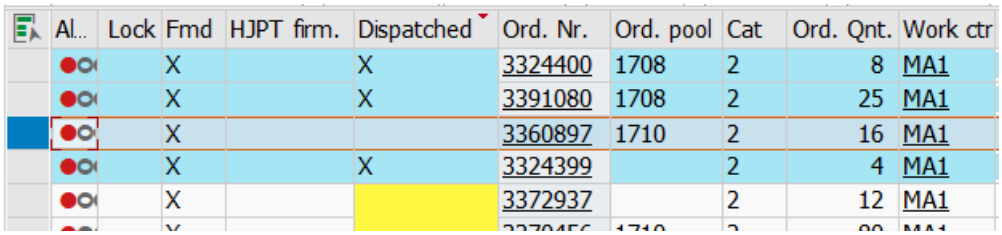
Initial situation:



Initial Situation

An order pool with two parallel operations and a single sequential operation has already been dispatched.

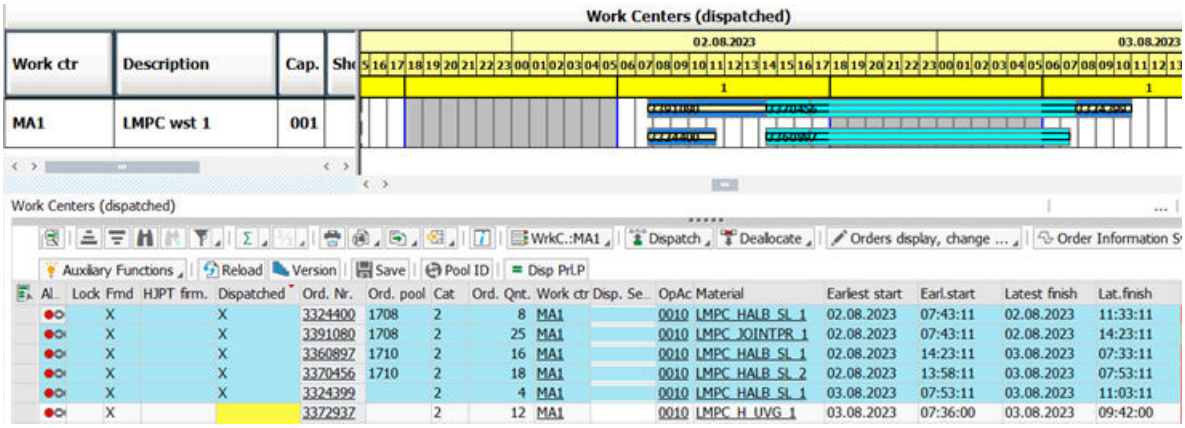
Using drag and drop in the ALV Grid, the operation of an order pool is now placed between the dispatched order pool and the sequential operation. It is sufficient to move one order operation of an order pool.



Move and Select

This operation is selected and the action code = Disp prl.P (S_EPPRLP) is executed.

Result:



Result of Planning

The logic reads the end time from the predecessor operation and dispatches the operations of the order pool at this time. The order pool, consisting of two operations, was dispatched between the operations that have already been dispatched. The operations are parallel.

Several operations can also be dragged and dropped between operations that have already been dispatched and transferred to the planning function at the same time.

Processing can be configured in such a way that dispatching takes place immediately when an operation is dragged and dropped. S_EPPRLP Configuration: Parallel Dispatching with Pool ID

The action code can also be defined for processing when **dragging and dropping in the graphic**.

The following actions are supported in the graphic:

- Rescheduling an individual operation without a pool ID to another time at the same work center. Dragging into the past and into the future: Subsequent operations at the same work center are connected to the new start time without gaps. When moving into the future, a gap remains in the old position that is not closed. If the operation is to be planned at a point for which an operation already exists, it must be moved in such a way that it is placed a little before the operation that has already been dispatched and whose position it is to occupy. If another operation already exists at this point (inserting between two operations), the new operation to be dispatched connects directly to the end of the predecessor. In the case of a collision with an operation that has already been dispatched, the start time is corrected to the end of the predecessor. This procedure makes it easier to insert operations into an existing production plan without gaps.
- Rescheduling parallel operations for a pool ID by using drag and drop to move one of the operations to the same work center. It is sufficient to move one order operation of an order pool. The other operations with the same pool ID follow. Rescheduling takes place in the same way as for the individual operation without a pool ID (see previous description).
- Dispatching an individual operation without a pool ID at the work center of the operation by dragging from the chart of operations that have not been dispatched to the chart of the dispatched operations. Dispatching takes place according to the same logic as rescheduling.
- Parallel dispatching all operations of a pool ID at the work center of the operations by dragging an operation with a pool ID from the chart of operations that have not been dispatched to the chart of dispatched operations. Dispatching takes place according to the same logic as rescheduling.
- Deallocating an individual operation without a pool ID by dragging from the chart of dispatched operations to the chart of operations that have not been dispatched. The resulting gap is not closed.
- Deallocating all parallel operations for a pool ID by deallocating one of the operations using drag and drop. The resulting gap is not closed.

The following actions are not supported in the graphic:

- Simultaneous selection of multiple bars and moving these bars in one step.
- Dispatching operations with a change of work center.
- Rescheduling operations with a change of work center.

If you try to reschedule an order to another work center, the function terminates with an error message.

2.6.5.36.3 S_EPPRLL Parallel Planning with Parallel Sequences

Action code for planning parallel sequences.

Use

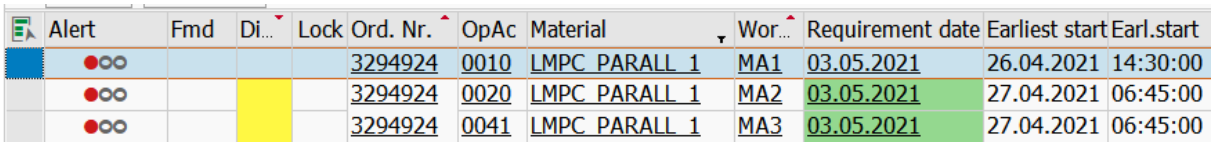
You can use this action code to dispatch operations across work centers in parallel. There is then an operation at each work center with the same start time. This function can only be used for operations that are defined as parallel sequences.

If you have defined parallel sequences in the routing, this action code ensures that the operations of the parallel sequences are actually dispatched in parallel to the corresponding operation of the standard sequence.

> **⚠ Restriction**
>
> The function can only be used for planned orders and production orders in PP. This function is not available for PP-PI (planned and process orders).

Procedure

Select one or more data records in the ALV Grid. You can dispatch one or more orders at the same time. All operations for an order are always dispatched if they are open in the HJPT planning table. It is therefore sufficient to select one operation of an order.



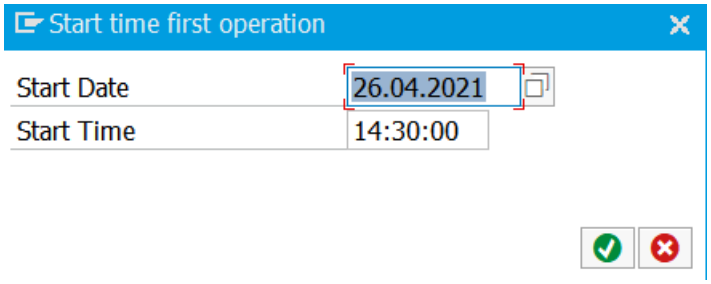
Alert	Fmd	Di...	Lock	Ord. Nr.	OpAc	Material	Wor...	Requirement date	Earliest start	Earl.start
●○○				3294924	0010	LMPC_PARALL_1	MA1	03.05.2021	26.04.2021	14:30:00
●○○				3294924	0020	LMPC_PARALL_1	MA2	03.05.2021	27.04.2021	06:45:00
●○○				3294924	0041	LMPC_PARALL_1	MA3	03.05.2021	27.04.2021	06:45:00

Select Operation

Execute the action code 

(S_EPPRLL).

If you have configured manual planning, the system displays a popup window for querying the start time.



Popup Window for Querying Start Time

Enter the desired start time, and confirm the window.

It is possible to reschedule orders that have already been dispatched.

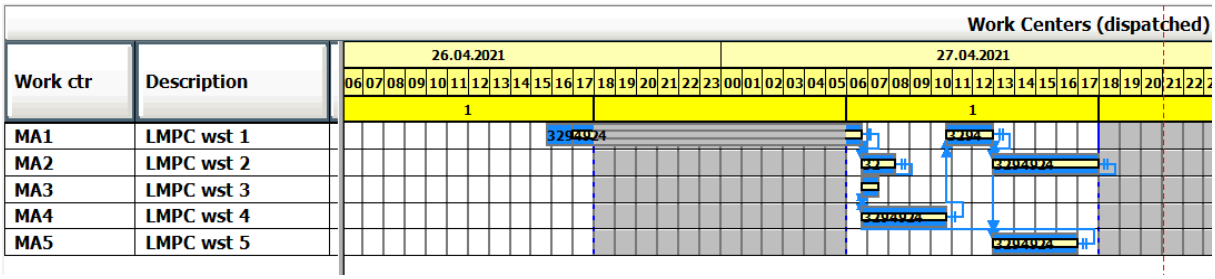
Dispatching is executed.

Result:

Alert	Fmd	Di...	Lock	Ord. Nr.	OpAc	Material	Wor...	Requirement date	Earliest start	Earl.start
●○○	X	X		3294924	0010	LMPC_PARALL_1	MA1	03.05.2021	26.04.2021	14:30:00
●○○	X	X		3294924	0020	LMPC_PARALL_1	MA2	03.05.2021	27.04.2021	06:45:00
●○○	X	X		3294924	0041	LMPC_PARALL_1	MA3	03.05.2021	27.04.2021	06:45:00
●○○	X	X		3294924	0020	LMPC_PARALL_1	MA4	03.05.2021	27.04.2021	06:45:00
●○○	X	X		3294924	0030	LMPC_PARALL_1	MA1	03.05.2021	27.04.2021	10:45:00
●○○	X	X		3294924	0040	LMPC_PARALL_1	MA2	03.05.2021	27.04.2021	13:00:00
●○○	X	X		3294924	0040	LMPC_PARALL_1	MA5	03.05.2021	27.04.2021	13:00:00
●○○				60008613	0010	LMPC_PARALL_1	MA1	01.06.2021	25.05.2021	17:45:00
●○○				60008613	0020	LMPC_PARALL_1	MA2	01.06.2021	26.05.2021	09:33:45

Result in the ALV Grid

In the ALV Grid, you can see that all operations of the selected order have been dispatched.



Result in the Graphic

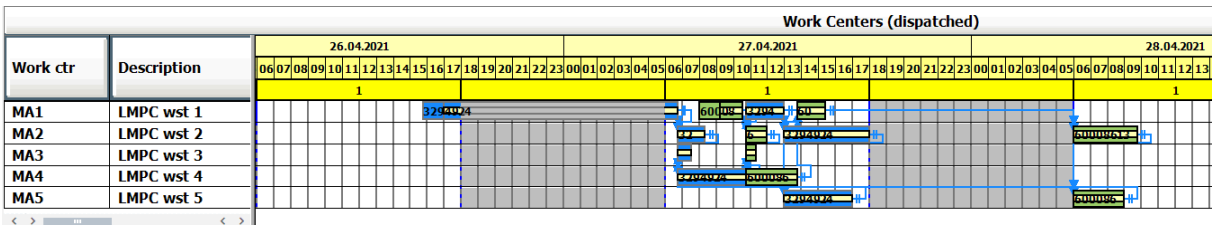
In the graphic, you can see that operations were dispatched in parallel. The parallel operations all start at the same start time.

The second operation of the order, which is dispatched to machine 2, has an additional parallel operation on machine 3 and an additional parallel operation on machine 4.

The fourth operation, which is also dispatched to machine 2, has an additional parallel operation on machine 5.

The function has a capacity check that searches for a time slot for which the parallel operations can be placed on the capacities in parallel. Dispatching only takes place if the parallel operations for an event can be dispatched in parallel. Otherwise, the function terminates dispatching and informs the user which order could not be dispatched.

If you schedule another order for the same material at the same start time, the following screen appears:



Planning Result 2 Orders at Same Start Time

You can see that the operations of the second order have been placed in the planning gaps. The condition that the operations must lie in parallel is adhered to.

The function can also be executed in background processing. Program /LMPC/HJPT Background Processing [page 26]

For the settings for the function and other SAP Notes, see the LMPC Configuration Guide. S_EPPRLL Configuration: Parallel Dispatching and Tool Planning

2.6.5.37 Planning with Pool ID

HJPT Planning with Pool ID

When planning with pool ID, orders are grouped using an indicator, the pool ID. These groups can then be dispatched using planning functions.

There are three different types of planning with pool IDs:

- Single-Level Planning with Pool ID [page 289]
- Two-Step Planning with Pool ID [page 296]
- Parallel Dispatching with Pool ID [page 309]

> ⓘ Note
>
> Planning with pool ID must not be confused with planning with group ID.
>
> When planning with a pool ID, the indicator is saved at order level. However, for planning with a group ID, the indicator is saved at operation level.
>
> Planning with Group ID [page 309]

2.6.5.37.1 Single-Level Planning with Pool ID

There are four action codes for single-level planning with pool ID:

- S_POOLID Create Order Pool Manually [page 290]
- S_POOLA Automatically Create Order Pool [page 291]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]

- S_APSELP Deallocate with Pool ID [page 295]

2.6.5.37.1.1 S_POOLID Create Order Pool Manually

Create LMPC Order Pool Manually

Use

You can use this action code to assign a shared identification, the pool ID, to orders. The pool ID is always assigned per order. This means that all operations of an order have the same pool ID.

Procedure

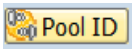
The procedure is explained using an example. There are, for example, several planned orders for the materials LMPC_FERT_01 and LMPC_FERT_02 on multiple days. Instead of using the start dates resulting from requirements planning, you want to dispatch all orders, each for one material, for the coming days in immediate succession. To do this, you create an order pool for each material.

The data in the ALV Grid list is as follows at the beginning of planning:

Dispatched	Status Lock	Earliest start	Earl.start	Earliest finish	Erl.finish	Order	Material
		03.04.2017	10:35:37	03.04.2017	11:51:37	2741200	LMPC_FERT_01
		04.04.2017	11:00:00	04.04.2017	18:00:00	1200821	LMPC_FERT_02
		04.04.2017	11:00:00	04.04.2017	18:00:00	1200821	LMPC_FERT_02
		05.04.2017	06:00:00	05.04.2017	06:10:00	1200868	LMPC_FERT_03
		05.04.2017	06:00:00	05.04.2017	06:10:00	1200868	LMPC_FERT_03
		05.04.2017	11:00:00	05.04.2017	18:00:00	1200826	LMPC_FERT_02
		05.04.2017	11:00:00	05.04.2017	18:00:00	1200826	LMPC_FERT_02
		05.04.2017	12:40:00	05.04.2017	18:00:00	1200840	LMPC_FERT_03
		05.04.2017	12:40:00	05.04.2017	18:00:00	1200840	LMPC_FERT_03
		05.04.2017	17:21:49	19.04.2017	10:37:49	2741552	LMPC_FERT_04
		05.04.2017	17:21:49	19.04.2017	10:37:49	2741552	LMPC_FERT_04

Operations Before Scheduling

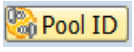
Now select all the operations for the first material. You can also sort the list by material before selecting.

You then choose the button 

(S_POOLID) and confirm the popup window.

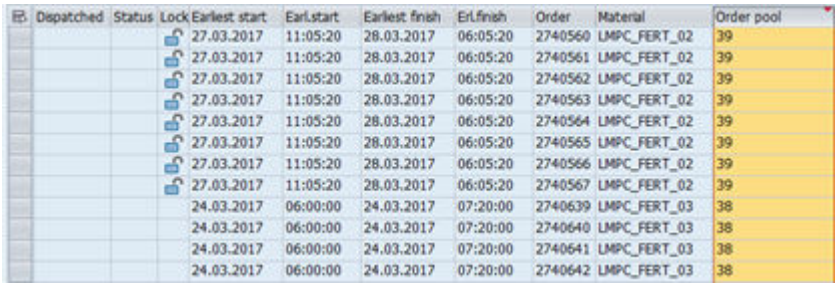
Order operations that are assigned to the same order pool are assigned the same identification number in the field “Order Pool”. If the field is not shown, you can find it in the group of the HJPT help fields.

Then repeat the selection and pool generation for the next material.

If you forgot operations when forming a pool, you can simply add them to an existing pool. To do this, you must select at least one order operation from the order pool and the operations that you want to add. Then execute the function 

(S_POOLID) again.

Result: You have now created two order pools. The start dates for the orders have not been changed.



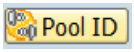
Dispatched	Status	Lock	Earliest start	Earl.start	Earliest finish	Erl.finish	Order	Material	Order pool
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740560	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740561	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740562	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740563	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740564	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740565	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740566	LMPC_FERT_02	39
			27.03.2017	11:05:20	28.03.2017	06:05:20	2740567	LMPC_FERT_02	39
			24.03.2017	06:00:00	24.03.2017	07:20:00	2740639	LMPC_FERT_03	38
			24.03.2017	06:00:00	24.03.2017	07:20:00	2740640	LMPC_FERT_03	38
			24.03.2017	06:00:00	24.03.2017	07:20:00	2740641	LMPC_FERT_03	38
			24.03.2017	06:00:00	24.03.2017	07:20:00	2740642	LMPC_FERT_03	38

Order Operations with Pool Assignment

Removing Pool IDs

The pool ID is removed in the same way as an order pool is formed.

Select the orders for which you want to remove the pool ID.

Execute the action code 

(S_POOLID).

If the function is executed on orders that already have a pool ID, the pool IDs are removed from these orders.

Related Information

S_POOLID, S_POOLA Configuration: Creation of Order Pools

2.6.5.37.1.2 S_POOLA Automatically Create Order Pool

Assign Pool ID Automatically

Use

This action code enables you to group orders according to rules. These rules are predefined in the Customizing settings.

This makes it possible to simplify and accelerate the creation of order pools.

Rules are defined by specifying grouping fields. For example, orders can be grouped in order pools automatically by work center and material number. In addition, it is possible to specify the maximum number of orders per order pool and to specify that header materials can only occur once per order pool.

The action code is usually used in dialog processing. However, it can also be used to execute the pool ID assignment at regular intervals using a job in the background. This can be useful, for example, if there are new orders in the system after an MRP run. Program /LMPC/HJPT Background Processing [page 26]

The action code S_6_POAT is a variant of the action code S_POOLA.

For details on configuring the action codes, see the LMPC Configuration Guide. S_POOLID, S_POOLA Configuration: Creation of Order Pools

Procedure

Initially, no pool IDs have been assigned. In this example, the settings in Customizing are set in such a way that the orders are grouped for each work center and material number.

Select the orders that you want to receive a pool ID.

Alert	Lock	Dispatched	Order Number	OpAc	Material	Work center	Order pool	Pool Conflict
●○○			3350473	0010	LMPC_HALB_12	MA1		
●○○			3350472	0010	LMPC_HALB_12	MA1		
○▲○			3362908	0010	LMPC_FERT_12	MA3		
●○○			3350707	0010	LMPC_HALB_12	MA1		
●○○			3350493	0010	LMPC_HALB_12	MA1		
○▲○			3362912	0010	LMPC_FERT_12	MA3		
●○○			3350678	0010	LMPC_HALB_12	MA1		
●○○			3360927	0010	LMPC_HALB_S...	MA1		

Initial Situation

Execute the action code for automatic pool generation from Pool ID A (S_POOLA).

Result:

Alert	Lock	Dispatched	Order Number	OpAc	Material	Work center	Order pool	Pool Conflict
●○○			3350473	0010	LMPC_HALB_12	MA1	1359	
●○○			3350472	0010	LMPC_HALB_12	MA1	1359	
○▲○			3362908	0010	LMPC_FERT_12	MA3	1360	X
●○○			3350707	0010	LMPC_HALB_12	MA1	1359	
●○○			3350493	0010	LMPC_HALB_12	MA1	1359	
○▲○			3362912	0010	LMPC_FERT_12	MA3	1360	X
●○○			3350678	0010	LMPC_HALB_12	MA1		
●○○			3360927	0010	LMPC_HALB_S...	MA1		

Result of Automatic Pool Formation

You can see that a pool ID has been assigned for each work center and material number.

In this example, a maximum number of orders per order pool has been defined. A maximum of 4 orders can be contained in an order pool. Since the maximum number of orders was not reached in the second order pool, the conflict field for the order pool is filled.

Grouping Logic

To enable automatic pool formation, the selected data records are sorted according to the grouping fields and the fields "Earliest Start Date" (FSTAU_KB) and "Earliest Start Time" (FSTAD_KB). As a result, the data records are sorted by the grouping fields as well as by time. Then, using loop processing, the data records are collected into groups of pools that have the same values for the grouping fields. As a result, orders that are close to each other in terms of time are grouped in an order pool.

If orders are added to an existing order pool, the existing order pool is filled before new order pools are created. An existing order pool is therefore always filled with the earliest available orders for the same grouping.

→ Tip

- The pool IDs can also be removed again. For this, all orders in the selection must have a pool ID. If orders have been removed from an order pool and then this order pool no longer has the required maximum number of orders, the conflict field is filled to display an incomplete order pool.
- You can use the action code to add further orders to an existing order pool. This is also done according to the specified rules. To do this, you must select at least one operation of the existing order pool and

at least one operation of an order that is to be added. If an order pool reaches the maximum number of orders as a result of this adding, the conflict field is emptied. If an order pool already contains the maximum number of orders, a new pool ID is assigned for the order that is to be added.

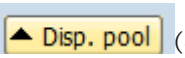
Related Information

S_POOLID, S_POOLA Configuration: Creation of Order Pools

2.6.5.37.1.3 S_EPSELP Single-Level Dispatching with Pool ID

Dispatch Order Pools

Use

The action code 

(S_SEPSELP) can be used to dispatch order pools. Orders with the same pool ID are dispatched consecutively.

The prerequisite for this function is that you have previously used a function for creating order pools to assign a pool ID for the respective operations. Order pools are created manually by the planner or automatically according to predefined properties of the operations.

- S_POOLID Create Order Pool Manually [page 290]
- S_POOLA Automatically Create Order Pool [page 291]

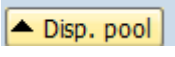
This function allows you to dispatch operations that have the same properties in a block.

Procedure

Select at least one operation in an order pool:

S_EPSELP Selection

Alert	Dispat...	Order pool	Order	Material	Work ctr	Operation Qty	Req. date	M
		459	2770241	LMPC_HALB_34	MA2	5	22.08.2019	S
		459	2928618	LMPC_HALB_34	MA2	5	22.08.2019	S
		458	2929760	LMPC_HALB_12	MA1	80	17.08.2019	S
		458	2929763	LMPC_HALB_12	MA1	62	17.08.2019	S
		458	2925426	LMPC_HALB_12	MA1	9	11.06.2019	S
		458	2925427	LMPC_HALB_12	MA1	23	11.06.2019	S

Execute the action code 

(S_EPSELP).

Result:

Alert	Dispat...	Order pool	Order	Material	Work ctr	Operation Qty	Req. date
	X	458	2929760	LMPC_HALB_12	MA1	80	11.06.2019
	X	458	2929763	LMPC_HALB_12	MA1	62	03.09.2019
	X	458	2925426	LMPC_HALB_12	MA1	9	03.09.2019
	X	458	2925427	LMPC_HALB_12	MA1	23	09.09.2019
		459	2770241	LMPC_HALB_34	MA2	5	22.08.2019
		459	2928618	LMPC_HALB_34	MA2	5	22.08.2019
			2928618	LMPC_HALB_34	MA2	5	22.08.2019
			2929767	LMPC_HALB_12	MA1	30	29.08.2019

Dispatching Result

All operations that belong to the same pool ID were dispatched at the same time. They were dispatched at the earliest possible time.

You can dispatch several different order pools at the same time. If you select several order pools at the same time, the system sorts by pool ID before dispatching. Operations with a lower pool ID are dispatched first, then the operations with the higher pool ID.

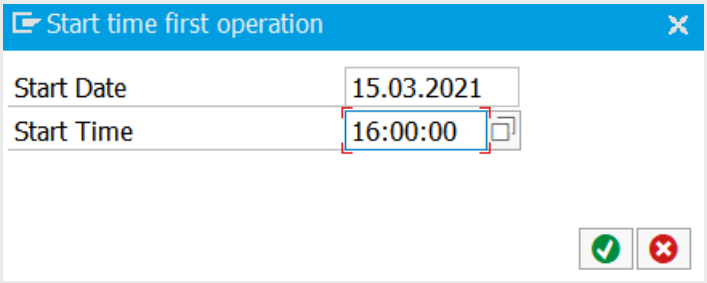
Within an order pool, the operations are sorted according to their start time before dispatching. The assumption behind this is that operations that are scheduled earlier should also be dispatched earlier.

During dispatching, the end time of the operation is determined after each operation has been dispatched, and this time is used as the start time for the next operation.

If you have operations in the pool grouping that belong to different work centers, you can use this function to carry out cross-work-center planning. Subsequent operations do not start until the operations are finished. Only the times of the operations are taken into account, meaning the times of the capacity requirements.

→ Remember

You can use a parameter in Customizing to activate manual planning. In this case, the function first asks for the desired date for dispatch in a dialog box. Depending on the settings in the strategy profile used, this is the start date or the end date for dispatching.



Entry of Start Date and Start Time

In backward scheduling, note the following: If the capacity offer is not sufficient and the operations must be dispatched in the past, dispatching terminates and does not dispatch the operations.

Related Information

S_EPSELP Configuration: Single-Level Dispatching with Pool ID

2.6.5.37.1.4 S_APSELP Deallocate with Pool ID

Deallocate Pool Orders

Use

You can use this action code to deallocate orders that have a pool ID collectively. This means you can deallocate by group.

Procedure

Select at least one order in an order pool:

Alert	Dispat...	Order pool	Order	Material	Work ctr	Operation Qty	Req. date
	X	458	2929760	LMPC_HALB_12	MA1	80	11.06.2019
	X	458	2929763	LMPC_HALB_12	MA1	62	03.09.2019
	X	458	2925426	LMPC_HALB_12	MA1	9	03.09.2019
	X	458	2925427	LMPC_HALB_12	MA1	23	09.09.2019
		459	2770241	LMPC_HALB_34	MA2	5	22.08.2019
		459	2928618	LMPC_HALB_34	MA2	5	22.08.2019

Selection

Execute the action code Deal. Pool (S_APSELP).

Result:

Alert	Dispat...	Order pool	Order	Material	Work ctr	Operation Qty	Req. date
		459	2770241	LMPC_HALB_34	MA2	5	22.08.2019
		459	2928618	LMPC_HALB_34	MA2	5	22.08.2019
		458	2929760	LMPC_HALB_12	MA1	80	11.06.2019
		458	2929763	LMPC_HALB_12	MA1	62	03.09.2019
		458	2925426	LMPC_HALB_12	MA1	9	03.09.2019
		458	2925427	LMPC_HALB_12	MA1	23	09.09.2019
			2928618	LMPC_HALB_34	MA2	5	22.08.2019
			2929767	LMPC_HALB_12	MA1	30	29.08.2019

Result of Deallocation

All orders with this pool ID have been deallocated.

→ Tip

- Dispatching and deallocation of pools is also possible for more than one order pool at a time.
- It is also possible to use background processing. Program /LMPC/HJPT Background Processing [page 26]
- This action code can also be used to deallocate two-step order pools. In two-step planning, the dispatching sequence can be defined using a Customizing table. During dispatching, sequence numbers are assigned and displayed in a field in the ALV Grid. When deallocating using the function S_APSELP, the sequence numbers are deleted again. S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

2.6.5.37.2 Two-Step Planning with Pool ID

Planning with Orders from 2 Low-Level Codes

The function for two-level planning with pool ID consists of two action codes:

- S_PBLKFG Pool formation with BOM information [page 296]
- S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

First, the action code S_PBLKFG is used to create an order pool of orders that are linked to each other via the BOM. The orders come from two low-level codes, for example a finished product and the preceding semifinished product.

When the order pools are created, they are dispatched with the action code S_EPBKFG.

An order pool in two-level planning consists of one or more operations of orders of the first level, and one or more operations of orders of the second level. The orders of the first level within an order pool must all have the same material number. Only the orders of the second level of an order pool can have different material numbers.

> → Tip
>
> This type of planning is highly complex and has a large number of setting options. Therefore, it is recommended that you commission consulting support for the implementation of this action code.

2.6.5.37.2.1 S_PBLKFG Pool formation with BOM information

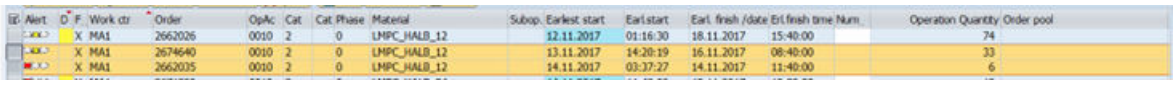
Create LMPC order pool from orders of two low-level codes

This action code is used to create an order pool of orders whose materials are connected via the BOM.

The action codes S_6_PBFG and S_6_PFGB are variants of the action code S_PBLKG that are configured differently.

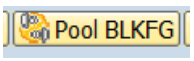
Procedure

Select one or more operations of first-level orders in the LMPC ALV Grid.



Alert	D	F	Work ctr	Order	OpAc	Cat	Cat Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time	Num.	Operation Quantity	Order pool
		X	MA1	2662026	0010	2	0	LMPC_HALB_12		12.11.2017	01:16:30	18.11.2017	15:40:00		74	
		X	MA1	2674640	0010	2	0	LMPC_HALB_12		13.11.2017	14:20:19	16.11.2017	08:40:00		33	
		X	MA1	2662035	0010	2	0	LMPC_HALB_12		14.11.2017	03:37:27	14.11.2017	11:40:00		6	

Selection of Orders in the ALV Grid

You then execute the action code for forming the order pool 

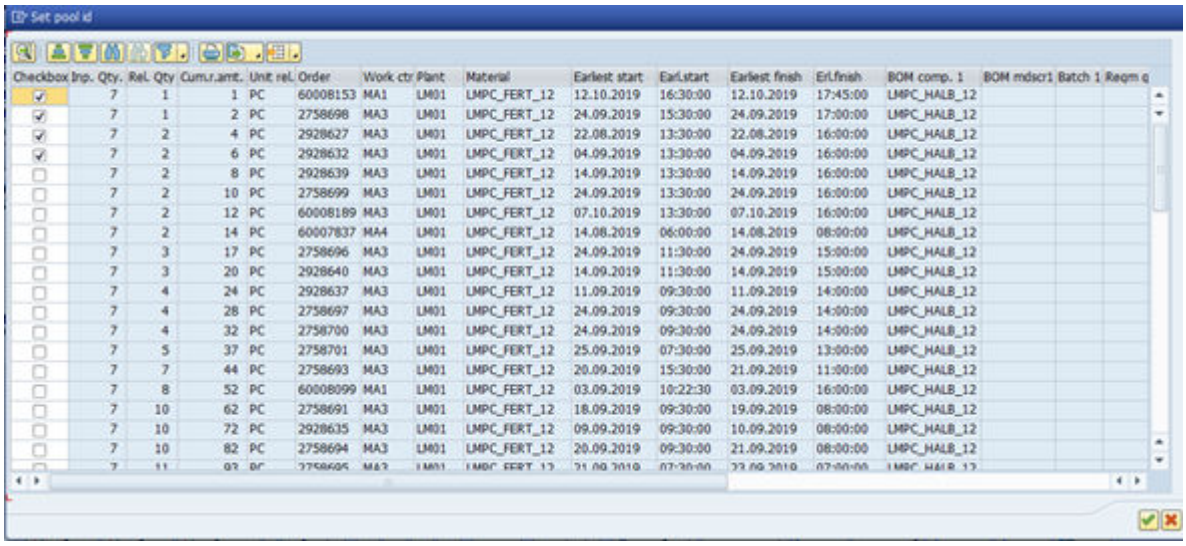
(S_PBLKFG).

The function performs the following steps:

- Check if the selected orders have already been dispatched. Termination if this is not allowed by the parameter settings.
- Check whether the orders have already been assigned to a pool. Termination or removal of the orders with pool ID from the selection, depending on the parameter settings of the parameter SELCORR.

- If adding to a pool via the parameter SELCORR is allowed, check whether all selected operations contain a maximum of one pool ID. Different pool IDs are not allowed in the selection. Termination if this condition has been violated.
- Check whether the orders all have the same material number. Termination if this condition is not met.
- If adding to a pool is activated via the parameter SELCORR and an order pool is available in the selection, it is checked whether all orders of the order pool that belong to this material have been selected. If not, the missing orders for this material are added to the selection. This is necessary so that the quantities of the first level of a pool can be correctly assigned to the quantities of the second level.
- Collect all orders that use this material as input (second level) and are open in the HJPT planning table for the orders of the for level using the BOM information. Only orders that do not have a pool ID and have not yet been dispatched are selected. You can use parameter settings to allow orders that have already been dispatched and orders with the same pool ID as in the selection.
- Use the sort criteria from Customizing to sort the orders found, if criteria exist.
- Create the cumulative requirement quantity of the orders for the popup window.
- If the orders are to be added to an existing pool ID (parameter SELCORR) and orders of the second level already have the same pool ID, these operations are also displayed in the popup window. They are displayed in the first position and preselected.
- If the parameter SELFG is set, the checkboxes are additionally preselected in the popup window. The system proposes which orders are to be added to the pool. Since the quantities of the orders are rarely exactly the same, you can use parameter settings to specify a rule for the quantity selection. For example, you can assign at least the same quantity to the preselection (>=) or no more than the same quantity (<=).

Then the popup window for selecting the orders of the second level is displayed.



Popup window for selecting orders for finished products

You can use the layout settings of the ALV Grid to select the fields that are to be displayed. The ALV Grid contains all fields of the ALV Grid of the HJPT planning table.

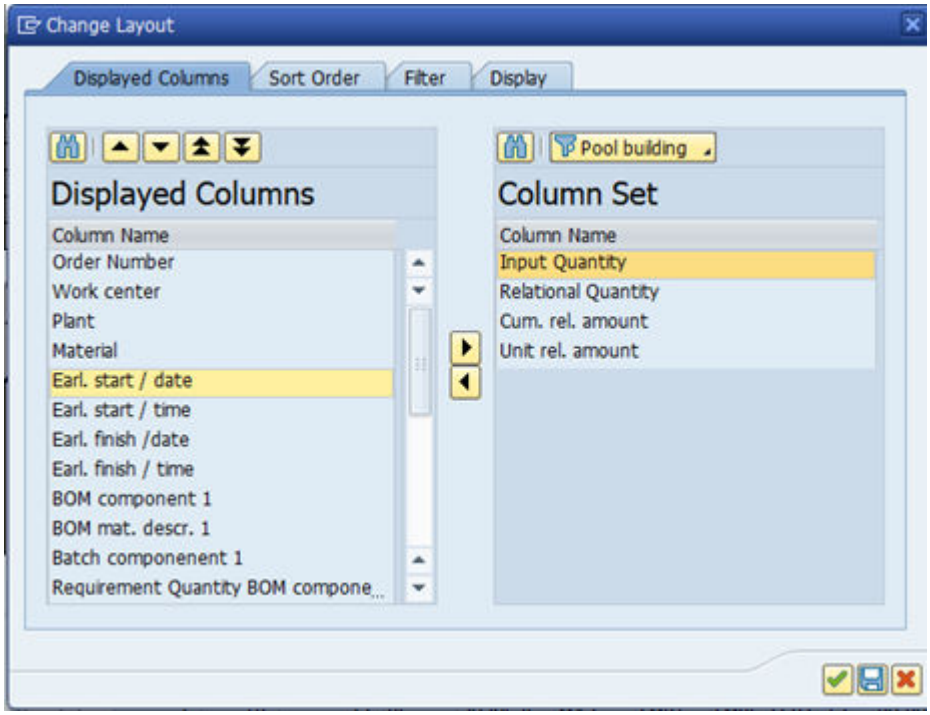
This ALV Grid also contains the additional fields:

- Checkbox
- Input quantity
- Related quantity

- Cumulated related quantity
- Unit of related quantity

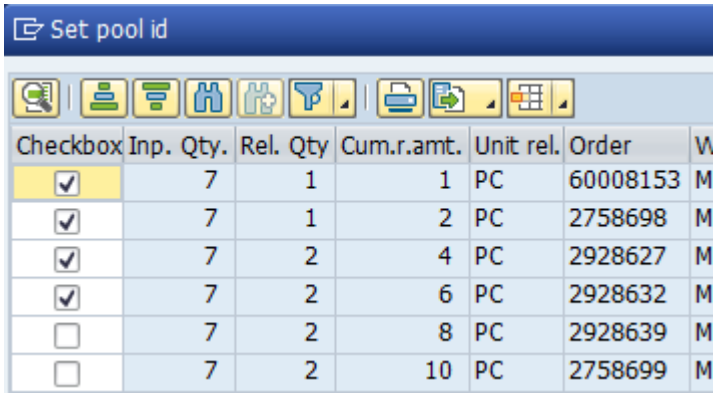
The layout also contains the layout groups of the LMPC ALV Grid to facilitate selection of the fields. Users can create and save their own profiles.

For this ALV Grid there is an additional group for the fields of the pool formation.



Layout settings popup window

Users can use the checkboxes in the first column of the ALV Grid to select the orders that are to be grouped in a pool.



Checkbox	Inp. Qty.	Rel. Qty	Cum.r.amt.	Unit rel.	Order	W
☑	7	1	1	PC	60008153	M
☑	7	1	2	PC	2758698	M
☑	7	2	4	PC	2928627	M
☑	7	2	6	PC	2928632	M
☐	7	2	8	PC	2928639	M
☐	7	2	10	PC	2758699	M

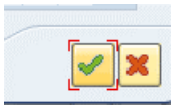
Selection of Orders

The input quantity column returns the quantity that originates from the selected orders. In this example, this is the cumulated quantity of the orders of the first level.

The "Related Quantity" column returns the quantity that comes from the order in question in the popup window. In this example, this is the requirement quantity of the first level that this order requires for the production of the material of the second level.

The "Cumulated Related Quantity" column is the sum from the top to the bottom of the related quantity via the orders. This makes it easier to select the orders for pool formation. The user can easily see which orders he needs to add for the input quantity to be the same as the related quantity.

The user chooses the OK button at the bottom right of the popup window to confirm the selection.



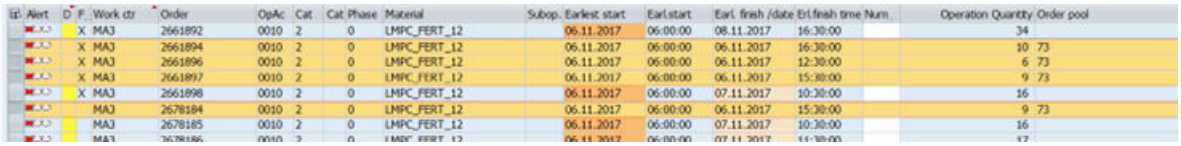
After confirmation, a check is performed. If the setting is set so that operations can be added to an existing pool (parameter SELCORR) and if orders were previously assigned to the order pool and are now no longer assigned, the pool ID is removed from the relevant order.

All orders that were selected using the selection field for creating the order pool are now combined into one order pool.

If a pool ID already exists in one of the orders in the selection, this is transferred to all orders. If a pool ID does not yet exist, a new pool ID is generated and entered in the selected orders.

As in the single-level pool function, the new pool ID is read from the number range that is maintained in the overall profile. If no number range is maintained there, a random GUID is generated. The pool ID is not intended to be assigned manually.

Finally, the system selects the operations of the orders that were grouped in a pool in the ALV Grid of the HJPT planning table. Operations for which the pool ID was removed are not selected.



Alert	D	F.	Work ctr	Order	OpAc	Cat	Cat Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time	Num.	Operation Quantity	Order pool
		X	MA3	2661892	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	08.11.2017	16:30:00		34	
		X	MA3	2661894	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	06.11.2017	16:30:00		10	73
		X	MA3	2661896	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	06.11.2017	12:30:00		6	73
		X	MA3	2661897	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	06.11.2017	15:30:00		9	73
		X	MA3	2661898	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	07.11.2017	10:30:00		16	
			MA3	2678184	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	06.11.2017	15:30:00		9	73
			MA3	2678185	0010	2	0	LMPC_FERT_12		06.11.2017	06:00:00	07.11.2017	10:30:00		16	

Selected Operations in the ALV Grid

The pool ID is entered in simulation mode. Only after planning has been saved are the values actually stored in the database tables.

In this example, the pool formation was performed from the first level to the second level. Operations of the first level were selected, the function displayed possible operations of the second level.

Pool formation is also possible in the opposite direction, from the second level to the first level. This can be controlled using a parameter.

It is possible to automate the combination of the orders. It can be set that the orders are automatically selected and added by the logic. In this case, the system no longer displays a popup window. This is semi-automatic execution.

Full automation using background processing, such as a planning job at night, is also possible. Grouping settings can be used to control the grouping of orders in order pools. This is similar to the automatic pool formation of the action code S_POOLA. Program /LMPC/HJPT Background Processing [page 26]

For details on the configuration options, see the LMPC Configuration Guide.

Related Information

S_PBLKFG Configuration: Pool Formation with BOM

2.6.5.37.2.2 S_EPBKFG Two-Step Dispatching with Pool ID

Dispatching Using Two Low-Level Codes with Pool ID

Use

You can use this action code to dispatch an order pool that was created with the function "Pool Formation with BOM" (S_PBLKFG). S_PBLKFG Pool formation with BOM information [page 296]

This order pool consists of orders that are used to produce materials that are linked to one another through the bill of material. For example, these are manufacturing orders of a semifinished material (1st level) that are included in the manufacturing orders of a finished product (2nd level). The levels are counted in the direction of production for the finished product.

The logic dispatches these orders according to a complicated set of rules.

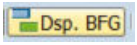
The action codes S_6_2NPA and S_6_2NPG are variants of the action code S_EPBKFG with other settings.

Procedure

Select one or more order operations of one or more order pools.

Alert	D	F	Work ctr	Order	OpAc	Cat	Cat	Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time	Num	Operation Quantity	Order pool
		X	MA1	2678191	0010	2		0	LMPC_HALB_12		15.11.2017	07:50:47	17.11.2017	09:40:00		20	102
		X	MA2	2678191	0020	2		0	LMPC_HALB_12		17.11.2017	09:40:00	18.11.2017	17:40:00		20	102
		X	MA3	2661896	0010	2		0	LMPC_FERT_12		17.11.2017	17:30:00	18.11.2017	12:00:00		6	102
		X	MA3	2661891	0010	2		0	LMPC_FERT_12		18.11.2017	09:30:00	18.11.2017	14:00:00		4	102
		X	MA4	2661896	0020	2		0	LMPC_FERT_12		18.11.2017	12:00:00	18.11.2017	18:00:00		6	102
		X	MA4	2661891	0020	2		0	LMPC_FERT_12		18.11.2017	14:00:00	18.11.2017	18:00:00		4	102

Selection of Operations

Execute the action code 

(S_EPBKFG).

The function performs the following steps:

Check Routines

- Operations without a pool ID are removed from the selection.
- If orders of a pool are missing in the selection, these are read.
- The orders of the first and second level are determined for each order pool. Identification is via the BOM components that are read directly from the order. If a particular component number has been specified in Customizing, only this single component is checked. If not, then all components are taken into account during the check. If identification is not possible, the function terminates with an error message.
- If operations from externally locked orders are selected, the function displays the externally locked orders and then terminates processing. The function does not terminate in background processing. The order pools that contain externally locked orders are removed from processing.
- If operations of production/process orders that are firmed are selected, the order pools that contain these operations are removed from processing. Fixed operations cannot be rescheduled. If all order pools have been removed from processing as a result of the removal, the function terminates and informs you via an error message that no operations exist for processing.

Sorting

- **No Setting:** If no sorting is set, the sequence of the selected operations in the ALV Grid specifies the processing sequence of the order pools. This is independent of whether operations of the first or the second level are selected. The selection determines the sequence in which the pool IDs are processed. The function reads all operations for the respective pool IDs from the pool of open operations. The data is read from the raw data, which is sorted by order number. As a result, the operations of the orders are then processed on the first and second levels in the sequence of their order numbers.
- **Parameter SRTFLD:** You can use the parameter SRTFLD to sort the data records easily. The parameter is used multiple times for sorting.
  The selected operations are arranged according to the configured sorting. As a result, the selected order pools are processed in the sequence that is specified via the sort parameter.
  The sorting is also applied to the operations within an order pool. As a result, the operations of the first level are dispatched and the operations of the second level are also dispatched according to the specified sequence.
  S_EPBKFG Configuration: Two-Step Dispatching

  > → Tip
  >
  > For example, if you set the earliest start date (field FSTAD_KB) and the earliest start time (field STAU_KB) of the capacity requirements as sort fields, the operations are dispatched in the chronological sequence that they had before the function was processed.
  >
  > Sorting according to the times of the capacity requirements is recommended if you have put the operations into a specific sequence before scheduling and this sequence is to be retained when the operations are rescheduled.
- **Parameter EPTBSQ:** If the parameter EPTBSQ is activated, the order pools are sorted according to a sequence that is specified using Customizing tables. The sequence is specified here using material numbers or material groups. For details on sequencing, see the section on maintaining the sequence for 2-step dispatching.
  M07 Transaction /LMPC/EPBKFG_CUST: Dispatching Sequence Two-Step Dispatching
  S_EPBKFG Configuration: Two-Step Dispatching
  When sorting with parameter EPTBSQ, a sequence number is assigned for the operations of the first level. The sequence number is displayed in field PLSEQBFG_AX (group of HJPT help fields). This number consists of two numbers, separated by a forward slash. Example: 005/008. The first number is the sequence number of the data record from Customizing to which this order pool was assigned. The second number represents the total number of entries in Customizing for this work center and plant. The sequence is read as follows: The order pool belongs to entry number 5 of 8 entries. The sequence number is saved with reference to the dispatched operation since dispatching takes place at operation level (no saving at order level). When you deallocate an order pool using the function for deallocating order pools, this number is deleted. S_APSELP Deallocate with Pool ID [page 295]

> ⓘ Note
>
> The sort logic is only applied to operations of order pools that are contained in the selection. If the insertion of operations is enabled (see INSERT parameter below), all operations that are after the desired time are included in processing and rescheduled. The additional rescheduled operations that were not contained in the original selection are not sorted. They retain their sequence during rescheduling. If sorting is also to be applied to all rescheduled operations, they must also be selected.

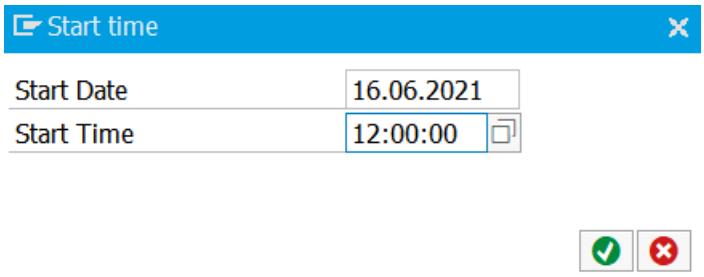
Deallocating

- If operations of the orders have already been dispatched, these are deallocated. This enables orders that have already been dispatched to be rescheduled.

Start Time for Dispatching

The start time for dispatching the order pool is determined differently depending on the settings of parameter MODE.

- **Manual dispatching:** The function uses a popup window to query a start date and a start time for dispatching the orders.



Query Start Time

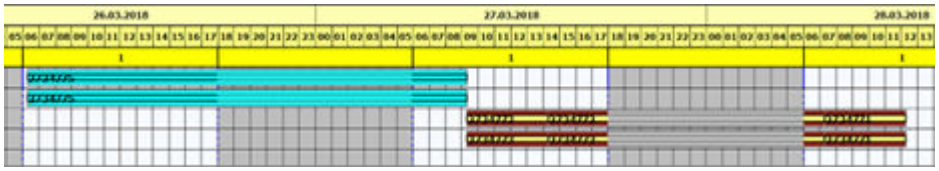
- **Earliest Dispatching:** The start time for dispatching is the current time.
- **End of Last Operation on First Level:** For each order pool in the selection, the function searches for the last dispatched operation on the machine on which the operations of the first level are dispatched. The end of the capacity requirement of this operation is the start time for dispatching the order pool.
- **End of Last Dispatched Operation:** For each order pool in the selection, the function searches for the last dispatched operation on all machines that are used to dispatch the operations of the order pool. The end of the capacity requirement of this operation is the start time for dispatching the order pool.

> → Remember
>
> When planning using drag and drop in the graphic, the MODE parameter has no effect. Here, the start time for dispatching is determined from the time to which the respective operation is dragged. S_EPBKFG Two-Level Planning Using Drag and Drop [page 307].

Dispatching Relationship of Operations

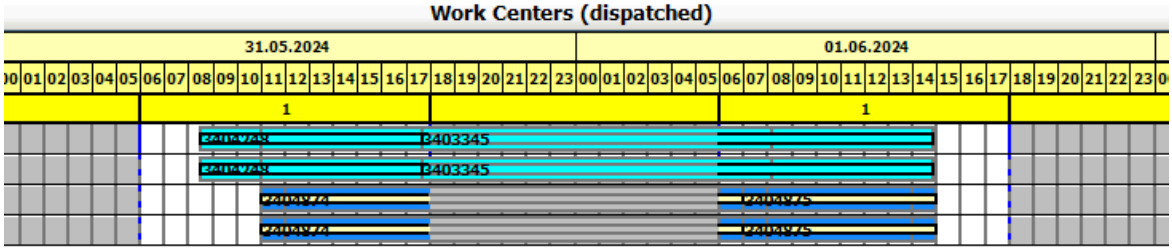
The position of the operations of the two-level order pool after dispatching depends on the set dispatching relationship.

- **End-Start Relationship (ENST):**
  The operations of the second level follow the operations of the first level. The end of the last operation of the first level specifies the start time for the first operation of the second level.



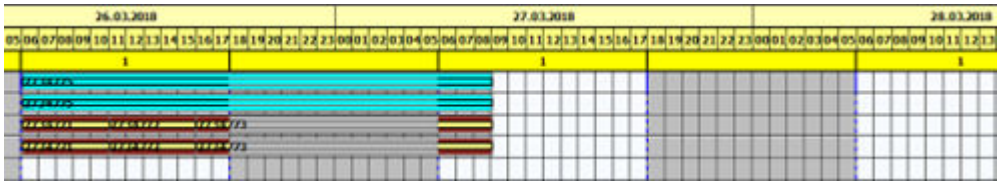
End-Start Relationship

- **End of Setup/Start Relationship (ERST):**
  The operations of the second level start at the end of the setup time of the first operation of the first level. The start times of the operations of the second level are shifted by the setup time of the first operation of the first level.



End of Setup/Start Relationship

- **Start-Start Relationship (STST):**
  The operations of the first and the second level start at the same time. They are parallel.



Start-Start Relationship (Semifinished Material Order Cyan)

> **⚠ Restriction**
>
> The dispatching relationships are strictly handled. There can be no capacity offers or orders that do not belong to this pool between these relationships. The operations of the second level must start exactly where the relationship is intended. If it is not possible to realize the relationships at one point, the function searches further into the future for an option. If the system does not find a time at which dispatching is possible due to a lack of capacity offer, the function terminates with an error message.

Scheduling Logic

The function has two different planning logics:

- **Search for Free Capacity for Dispatching the Order Pools**
- **Insert Order Pools at Desired Time**

Search for Free Capacity

In the outbound delivery, the function is set in such a way that it searches forwards starting from the desired start time (see above) for free capacity to dispatch the operations of the first and second levels. Operations that have already been dispatched that have not been selected remain in their positions. The function only dispatches where sufficient free capacity is available on all machines so that the dispatching relationship can be established.

Insert at Desired Time

The second dispatching logic can be activated using the **INSERT parameter**. If this logic is active, the order pools in the selection are dispatched at the desired time and, if necessary, move dispatched operations that lie after the desired dispatching time.

Technically, shifting was implemented in such a way that all operations that lie after the desired start period are included in processing by the function independently after the start in order to calculate new dates.

The operations are included in the planning function with their current time as the target time. The planning function then first processes the selected order pools one after the other and then all order pools and operations without a pool ID that were additionally included in planning due to their situation.

In this way, the start times of the operations are recalculated as of the desired start time.

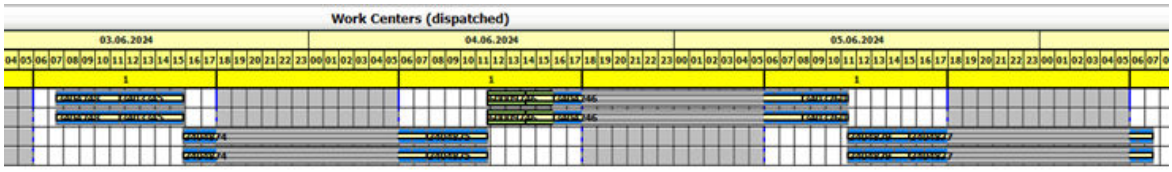
Operations with and without a pool ID are redispatched. The operations with a pool ID are all processed with the set dispatching relationship. It is then not possible to plan order pools with different dispatching relationships on the machines. During rescheduling, all order pools are planned with the same strategy.

If operations of an order pool have already been dispatched at the desired time and the first operation of the order pool is before the desired start time, the order pool remains unchanged. These operations are not included in processing. Likewise, operations without a pool ID that start before the desired time.

> **Note**
>
> Inserting operations can significantly slow down the runtime of the function. To speed up the runtime of the function, rescheduling takes place only if the calculated start times of the operations differ from the actual start times of the operations. All operations for which the calculated new time at the end of the function is identical to the previous start time are not rescheduled.

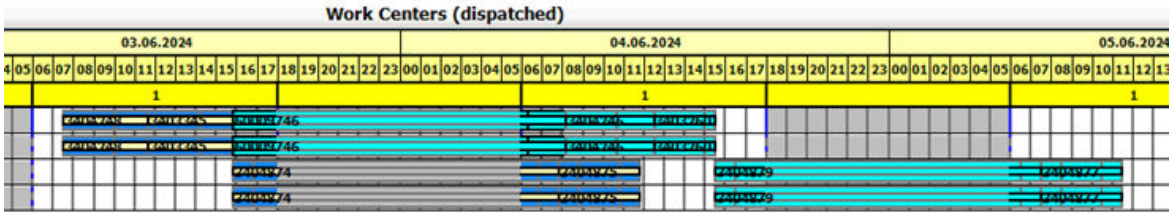
Additional Logic

- **Parameter RESCNG:** An additional logic can be added to the insertion into the production plan using the parameter INSERT with the parameter RESCNG. If the parameter is active, all operations that lie after the desired start time are connected to the new dispatching during rescheduling. As a result, the gaps in the production plan are closed as of the desired start time.
- **Parameter NO_OVLP:** If the parameter is set, order pools must not overlap. The first operation of the subsequent order pool does not start until the last operation of the preceding order pool has ended. This setting is necessary, for example, if, in the case of a filling, the machine of the first level can only be used again once the entire production quantity has been consumed on the second level. This setting is particularly relevant for the end-start relationship.



No Overlap for End-Start Relationship

This setting also applies to all operations without a pool ID on the machines. The operations of an order pool must then also not overlap with operations of orders without a pool ID.
If the parameter is not set, the order pools can overlap. In this case, operations of the first level of the subsequent pool can already start while the operations of the preceding pool are still running on the second level.



End/Start Relationship Overlaps

This results in a more compact production plan with fewer gaps. The dispatching relationships are still strictly adhered to.

- **Second Level Materials at Different Work Centers:** The first level in an order pool can only consist of operations of orders that all belong to the same material. All these operations must be on the same machine. The operations of the second level can be orders with different materials that are produced on different machines. The dispatching relationship is realized in such a way that all operations of the second level start at the same time.
- **Planning with Suboperations:** Both the operations of the first and the second level can each have a suboperation on another machine. The planning function then takes into account the available capacity on these machines during dispatching.
- **Parameter NOCCHK2:** the parameter NOCCHK2 is a standalone planning logic.
  This planning function is intended for scenarios in which the operations of the second-level orders are dispatched to capacities that have several individual capacities and in which the operations can be parallel. If this parameter is not set, the LMPC function calculates the dispatching dates for the operations of the first and second level and transfers them to the standard dispatching function. The calculation is based on the available capacity. This ensures that the scheduling relationships (ENST, FIRST, STST) are always strictly adhered to (see above). The logic assumes that all operations are sequential and that only one individual capacity is available.
  If the parameter NOCCHK2 is set, the capacity check is deactivated for the second level. The LMPC function only calculates the start times for the first level. The check for free capacity is only carried out here.
  Depending on the selected start relationship, the operations of the second level are transferred to the standard dispatching function either with the start time of the first level, the start time after setup of the first level, or the end time of the corresponding order operations of the first level.
  In this mode, the LMPC logic does not check whether the capacity offer on the second level is sufficient for dispatching the orders and therefore does not adjust the dispatching dates of the first level to the available capacity on machines of the second level.
  The dispatching dates that result from this for the operations of the second level depend on the available capacity at the work center and the operations that have already been dispatched at the work center. The standard dispatching function searches forwards from the transferred date for the next date on which the operations can be dispatched. If the checkmark for “Insert Operations” is not set in the strategy profile, the operations are dispatched to the next free capacity. Operations that have already been dispatched are not moved. If the “Insert Operations” checkbox is set in the strategy profile, the operations are inserted and operations that have already been dispatched are moved. By moving operations that have already been dispatched, the dispatching relationships of other order pools can be violated.
  Since the dispatching relationships are not checked in the logic NOCCHK2, it cannot be guaranteed that the time dependencies between the operations of the first and second level are adhered to. For example, for the start relationship STST (same start time), only the start time of the first level is forwarded to the dispatching function for the second level. If no free capacity is available on the machine at this time, the operations of the second level start later. This also applies to the relationships ENST (finish-start) and ERST (finish-setup start).

Another important point is that the parameter RESCNG (Close Gaps During Rescheduling) cannot be used for NOCCHK2. Since the planning function does not calculate the position of the operations of the second level, it is also not possible to connect other operations without gaps. The parameter is deactivated automatically if NOCCHK2 is used.
A special note concerns the insertion of orders (INSERT). Here, the planning function must calculate new start dates for the operations that lie after the desired dispatching date. If the newly calculated dates differ from the previous dates, the order pools that lie after the desired dispatching date are rescheduled. In the worst case scenario, all subsequent order pools may be affected. They are rescheduled using the logic of NOCCHK2. This means that only dispatching dates for the first level are calculated. The dispatching date of the operations of the second level results from the transfer of the corresponding dates to standard dispatching (see description above).
In the case of the logic NOCCHK2 in connection with the parameter INSERT, there should be no operations without a pool ID between the operations of the order pools. The logic NOCCHK2 does not take these operations into account. However, if there are operations without a pool ID, shifting effects and changing the sequence may occur in planning.
In addition, the parameter NO_OVLP (no overlap) is deactivated automatically for the logic NOCCHK2. Since there is no capacity check for the second-level operations, the function cannot calculate where these operations end, which makes an overlap check impossible.

- The action code can also be configured for **background processing** using the program /LMPC/HJPT.

⚠ Restriction

- The function can only be used for precisely the use cases described here. The function cannot be used for other cases that are not described here.
- Individual capacities are not supported.
- The planning of operations only works with the following data configuration:
  - All materials of the first level of an order pool have the same material number. The finished products of an order pool can have different material numbers.
  - All operations of the first level of an order pool are dispatched to the same work center.
  - All operations of the first level of an order pool are dispatched to a different work center than the operations of the second level.
  - The function can only process one operation per order number. There must not be two or more operations of the same order in processing. If orders have more than one operation, the machines of the other operations must not be open in the HJPT planning table because otherwise all other operations are read using the pool ID.
- This function schedules operations sequentially. Parallel dispatching of several operations to the same capacity is not provided. Several individual capacities can be maintained at the work center, then they increase the capacity offer in the respective period. The scheduling formulas at the work center must then be designed in such a way that the order durations depend on the number of individual capacities and are shortened with additional individual capacities. Exception: logic NOCCHK2 for second-level operations. Parallel planning is possible here due to the deactivation of the capacity check. See above.
- A maximum of one suboperation can exist for each operation. Suboperations are always displayed as long as the main operation, but the logic for calculating the items uses the capacity requirements of the suboperations. The suboperations must therefore have exactly the same capacity requirement as the corresponding main operation so that the calculation is correct.
- The work center filter cannot be used together with this feature. The work center filter filters the operations to a single work center. However, the two-level order pools contain operations from different

work centers. All operations of an order pool must always be contained in the ALV Grid. S_WPFLT Work Center Filter [page 418]

Related Information

S_EPBKFG Configuration: Two-Step Dispatching
M07 Transaction /LMPC/EPBKFG_CUST: Dispatching Sequence Two-Step Dispatching

2.6.5.37.2.2.1 S_EPBKFG Two-Level Planning Using Drag and Drop

Planning in the Graphical Planning Chart Using Two Low-Level Codes

You can store two-level planning as a function for dragging and dropping in the graphic. S_EPBKFG Configuration: Two-Step Dispatching

This unit describes the **specific details for two-level planning using drag and drop**. You can find the entire logic for two-step planning in the higher-level unit. S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

If the logic is stored for two-level planning when dragging and dropping, the function first performs a check on the order pool.

Check Routine

- When dragging and dropping, the system checks whether the moved operation is an operation with a pool ID. If the operation does not contain a pool ID, the function terminates and leaves further processing to the capacity planning table. In this way, operations without a pool ID can be rescheduled as required.
- If the operation has a pool ID, the system determines the operations of the order pool and checks whether a connection can be established between two levels via the components. If no connection can be determined, the function terminates and leaves further processing to the capacity planning table.
- You can use the parameter GRCHCK to change this check routine. If the parameter is set and no connection can be established between two levels, processing terminates. The setting ensures that only operations with a pool ID are moved for which the order pool contains operations of the first and second level.

Planning Logic

The logic distinguishes between the following planning actions:

- **Dispatch:** Drag an operation from a chart of the pool to a chart for dispatched operations.
- **Deallocate:** Drag an operation from a chart of dispatched operations to a chart for deallocated operations.
- **Reschedule:** Drag an operation within the chart on the same machine to a different point in time.

⚠ Restriction

- The logic does not allow you to change the work center. If a change of work center is recognized, the function terminates with an error message.
- Only one operation can be dragged and dropped.

The logic differentiates between first and second-level operations in processing.

- **A first-level operation is dispatched or rescheduled using drag and drop.**
  The function determines all operations for the order pool and dispatches the entire order pool to the desired start time. The dispatching relationships set are taken into account.
  For the order pool to be inserted at the desired time, the INSERT parameter must be activated, otherwise the order pool is dispatched to the next free capacity.
  If the parameter for connecting subsequent operations (RESCNG) is active, all operations that are dispatched after the desired start time are rescheduled.
  Moving operations always calculates the time by which a task shifts. The order pool will also be shifted by this time.
  If there are multiple first-level operations, the sequence of these operations cannot be changed using drag and drop. You use drag and drop only to specify the time shift by which the entire order pool is moved.
  The sequence of the operations is determined by the sorting of the operations, which is set via the parameter SORTFLD. If the operations were previously put into a sequence that does not correspond to the configured sorting using a different function, these changes are lost.
  The finished goods are dispatched or rescheduled according to the set dispatching relationship.
- **An operation of a second-level operation is rescheduled.**
  If an operation of the second level of an order pool is moved, the logic of two-level planning is not executed. Planning is left to the standard function of the graphic. As a result, only the individual moved operation is rescheduled, all other operations of the order pool remain unchanged. This means the second-level operations can be shifted as required.
- **A second-level operation of a pool that has not been dispatched is dispatched.**
  The function determines all operations of the order pool. All operations of the order pool are dispatched at the desired time.
- **An operation is deallocated or moved in the pool of operations.**
  The logic for two-level planning is not run. When deallocating and moving, the standard logic of the graphic for dragging and dropping is executed. Only the moved operation is deallocated, not the entire order pool.

> ⓘ Note
>
> Also note the restrictions in the unit on two-level dispatching. These are also valid. S_EPBKFG Two-Step Dispatching with Pool ID [page 300]

2.6.5.37.3 Multi-Level Planning with Pool ID

Only one pool ID can be saved for each order.

Since an order often supplies several other orders in multilevel hierarchies of orders, the pool ID cannot be used in a multilevel scenario to determine a dispatching hierarchy across multiple levels.

If you want to plan orders across several low-level codes, use multilevel planning via order relations.

Multilevel Planning via Order Relations [page 313]

> → Remember
>
> - Although the pool ID cannot be used to define a scheduling hierarchy over several levels, it can be used to combine orders on one level into groups. In this way, groups of orders can be formed that are

simultaneously transferred to the dispatching function to be dispatched in a block. A description of this can be found in action code S_EPML. S_EPML Multilevel Planning [page 323]

- The pool ID can also be used to form firmed order relations. S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]

2.6.5.37.4 Parallel Dispatching with Pool ID

For a description of the parallel dispatching of operations with a pool ID, see the section on parallel planning in the HJPT planning table.

- S_PBPRLL Form Order Pool for Parallel Dispatching with Pool ID [page 278]
- S_EPPRLP Parallel Dispatching with Pool ID [page 280]

The rule-based planning function can also be used to dispatch operations with a pool ID in parallel.

- S_RBPL Rule-Based Dispatching [page 240]

2.6.5.38 Planning with Group ID

When planning with a group ID, operations are grouped together in groups with the same indicator, the so-called group ID.

Planning with group ID must not be confused with planning with pool ID. Planning with Pool ID [page 289]

When planning with a group ID, the indicator is saved at the level of the operation.

When planning with a pool ID, the indicator is saved at order level.

The following functions are available for planning with the group ID:

- S_GRPID Set and Delete Group ID [page 309]
- S_EPGRP Planning with Group ID [page 311]
- S_APGRP Deallocate with Group ID [page 313]

2.6.5.38.1 S_GRPID Set and Delete Group ID

You can use this action code to assign a group ID to operations. The ID is assigned at operation level.

The group ID can also be deleted with the same action code.

Use Case Manual Group ID Assignment.

The group ID is assigned manually if the parameter AUTOGRP is not set in Customizing. If operations without a group ID are transferred to processing, the same group ID is assigned for all selected operations.

If only operations with a group ID are transferred to processing, all group IDs are removed.

If operations with a group ID and without a group ID are transferred to processing and the operations with the group ID all have the same group ID, all selected operations receive the same group ID. The operations are added to the group.

If there are operations with different group IDs in the selection, the function terminates with an error message.

If the parameter ADD_OFF is set, it is not possible to add an operation to an operation group. In this case, the system issues an error message if operations with and without a group ID are selected.

Example:

Select the operations that are to be grouped together.

G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Operation Group	Ord. Q...	UoM	Work ctr	Material	Latest start
●○○		X			3634502	0010		77	PC	MA4	LMPC_FERT_KE	05.11.2025
●○○		X			3848481	0010		20	PC	MA3	LMPC_FERT_12	05.11.2025
●○○		X			3848928	0010		11	PC	MA1	LMPC_HALB_12	05.11.2025
●○○		X			3848929	0010		30	PC	MA1	LMPC_HALB_12	05.11.2025
●○○		X			3849073	0010		7	PC	MA5	LMPC_FERT_1234	05.11.2025

Selection of Operations

Execute the grouping function Group ID (S_GRPID).

Result:

G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Operation Group	Ord. Q...	UoM	Work ctr	Material	Latest start
●○○		X			3634502	0010	1941	77	PC	MA4	LMPC_FERT_KE	05.11.2025
●○○		X			3848481	0010	1941	20	PC	MA3	LMPC_FERT_12	05.11.2025
●○○		X			3848928	0010	1941	11	PC	MA1	LMPC_HALB_12	05.11.2025
●○○		X			3848929	0010	1941	30	PC	MA1	LMPC_HALB_12	05.11.2025
●○○		X			3849073	0010		7	PC	MA5	LMPC_FERT_1234	05.11.2025
●○○		X			3403210	0010		79	PC	MA3	LMPC_FERT_34	06.11.2025

Result

The same group ID has been assigned for all operations.

If you want to remove the group ID, execute the function again with the same selection or reload the data.

The group ID is assigned in the simulation and is not written to the database until you save.

Use case Automatic Group ID Assignment.

The automatic group ID assignment takes place if the parameter AUTOGRP is set.

If operations without a group ID are transferred to processing, the selected operations are classified according to the grouping fields in groups with the same values of the grouping fields.

Each group with the same values is assigned the same group ID.

For example, the same group ID for each same work center and for each same order number.

You can use the parameter MAXNR to restrict the maximum number of orders in an operation group. If a group is full, a new group ID is assigned for the next operation to be processed.

You can also use the parameter SINGLMAT to specify that each header material can only occur once in an operation group.

If only operations with a group ID are transferred to processing, all group IDs are removed.

If orders with a group ID and without a group ID are transferred to processing, the system searches for the existing groups and operations that match an existing group are assigned to this group ID. All groups that do not yet exist are assigned a new group ID.

If the parameter ADD_OFF is set, it is not possible to add it to a group. If you try to do so, the function terminates with an error message.

Background processing use case.

In the case of background processing, grouping is automatically active.

All loaded operations are included in the selection.

If only operations without a group ID exist, new groups are formed and group IDs are assigned.

If only operations with group ID exist, all group IDs are removed.

If operations with group ID and without group ID exist, the operations without group ID are added to operations with group ID if possible.

If the parameter ADD_OFF is set, it is not possible to add, then the group IDs are reassigned for all operations without a group ID. The existing operation groups remain unchanged.

> ⚠ Restriction
>
> - Only one group ID can be assigned for each operation.
> - In contrast to the pool ID, the group ID cannot be saved in the sequence number of the order because the group ID is saved at operation level.
> - For the group ID, there is no conflict indicator for incomplete groups during automatic grouping, as is the case for the pool ID.

Related Information

S_GRPID Configuration: Create Operation Groups

2.6.5.38.2 S_EPGRP Planning with Group ID

Use

With this function, you can dispatch operations that have a group ID.

It is sufficient to select one operation per group. The function then reads all operations that belong to the respective group.

The operations are processed group by group. All operations for a group are transferred to dispatching one after the other. The operations of the next group are then processed.

The settings for the function are used to define the start time at which the operations are dispatched.

You have the following options:

- Dispatching at earliest point in time.
- Dispatching at the scheduled start time of the first selected operation.
- Dispatching at a start time specified by the user.

The prerequisite for this function is that you have previously assigned a group ID to the respective order operations using the function for forming groups. S_GRPID Set and Delete Group ID [page 309]

This function enables operations that have the same properties to be dispatched to a block.

Procedure

Select at least one operation of an operation group:

G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Operation Group	Ord. Q...	UoM	Work ctr	Material	Latest start	Lat.st.tme
●○○		X			3847867	0010		16	PC	MA1	LMPC_H_UVG_1	08.11.2025	06:00:00
●○○		X			3848930	0010	1936	30	PC	MA1	LMPC_HALB_12	08.11.2025	06:00:00
●○○		X			3848931	0010	1936	20	PC	MA1	LMPC_HALB_12	08.11.2025	06:00:00
●○○		X			3848932	0010	1936	30	PC	MA1	LMPC_HALB_12	08.11.2025	06:00:00
●○○		X			3848933	0010	1935	10	PC	MA1	LMPC_HALB_12	08.11.2025	06:00:00
●○○		X			3848934	0010	1935	30	PC	MA1	LMPC_HALB_12	08.11.2025	06:00:00
●○○		X			3370487	0010		9	PC	MA1	LMPC_PARALL_1	08.11.2025	07:00:00

Selection

Execute the action code 

(S_EPGRP).

Result:

G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Operation Group	Ord. Q...	UoM	Work ctr	Material	Latest start	Lat.st.tme
●○○		X		X	3848933	0010	1935	10	PC	MA1	LMPC_HALB_12	25.11.2025	15:35:48
●○○		X		X	3848934	0010	1935	30	PC	MA1	LMPC_HALB_12	25.11.2025	17:25:48
●○○		X		X	3848930	0010	1936	30	PC	MA1	LMPC_HALB_12	26.11.2025	09:55:48
●○○		X		X	3848931	0010	1936	20	PC	MA1	LMPC_HALB_12	26.11.2025	14:25:48
●○○		X		X	3848932	0010	1936	30	PC	MA1	LMPC_HALB_12	26.11.2025	17:35:48
●○○		X			3847867	0010		16	PC	MA1	LMPC_H_UVG_1	08.11.2025	06:00:00

Result of Dispatching

All operations that belong to the same group ID were dispatched at once. They were scheduled at the earliest possible time.

You can schedule several different operation groups at the same time. If you select several groups at the same time, the system sorts according to the group ID before dispatching. Operations with a lower group ID are dispatched first, then the operations with the higher group ID.

Within an operation group, the operations are sorted according to their start time before dispatching. The assumption behind this is that operations that are scheduled earlier are also to be dispatched earlier.

If it is activated via Customizing, the end time of the operation is determined after dispatching each operation and this time is used as the start time for the next operation.

If you have operations in the grouping that belong to different work centers, you can use this function to carry out cross-work center planning. Subsequent operations do not start until the operations are finished. Only the times of the operations are considered, that is, the times of the capacity requirements.

Related Information

S_EPGRP Configuration: Dispatch Operation Groups

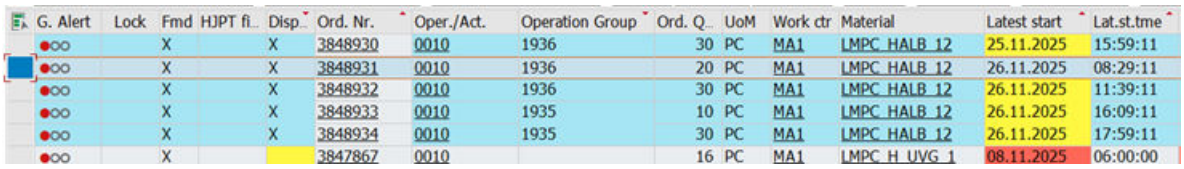
2.6.5.38.3 S_APGRP Deallocate with Group ID

Usage

You can use this action code to deallocate order operations that have a group ID together. This means that you can deallocate by group.

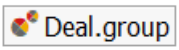
Procedure

Select at least one operation of an operation group:



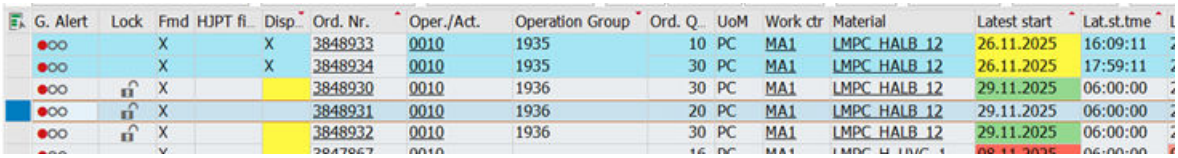
G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Operation Group	Ord. Q...	UoM	Work ctr	Material	Latest start	Lat.st.tme
●○○		X		X	3848930	0010	1936	30	PC	MA1	LMPC_HALB_12	25.11.2025	15:59:11
●○○		X		X	3848931	0010	1936	20	PC	MA1	LMPC_HALB_12	26.11.2025	08:29:11
●○○		X		X	3848932	0010	1936	30	PC	MA1	LMPC_HALB_12	26.11.2025	11:39:11
●○○		X		X	3848933	0010	1935	10	PC	MA1	LMPC_HALB_12	26.11.2025	16:09:11
●○○		X		X	3848934	0010	1935	30	PC	MA1	LMPC_HALB_12	26.11.2025	17:59:11
●○○		X			3847867	0010		16	PC	MA1	LMPC_H_UVG_1	08.11.2025	06:00:00

Selection

Execute the action code 

(S_APGRP).

Result:



G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Operation Group	Ord. Q...	UoM	Work ctr	Material	Latest start	Lat.st.tme
●○○		X		X	3848933	0010	1935	10	PC	MA1	LMPC_HALB_12	26.11.2025	16:09:11
●○○		X		X	3848934	0010	1935	30	PC	MA1	LMPC_HALB_12	26.11.2025	17:59:11
●○○		X			3848930	0010	1936	30	PC	MA1	LMPC_HALB_12	29.11.2025	06:00:00
●○○		X			3848931	0010	1936	20	PC	MA1	LMPC_HALB_12	29.11.2025	06:00:00
●○○		X			3848932	0010	1936	30	PC	MA1	LMPC_HALB_12	29.11.2025	06:00:00

Result of Deallocation

All operations with this group ID have been deallocated.

> → Tip
>
> - Deallocation also works for multiple groups at the same time.
> - You can also use the function in background processing. Program /LMPC/HJPT Background Processing [page 26]

Related Information

Action Codes for Planning Functions

2.6.5.39 Multilevel Planning via Order Relations

Planning Using All Low-Level Codes

It is often the case that a product is manufactured in several levels. Semifinished products are produced from the output materials, which are then included in the production of the finished product.

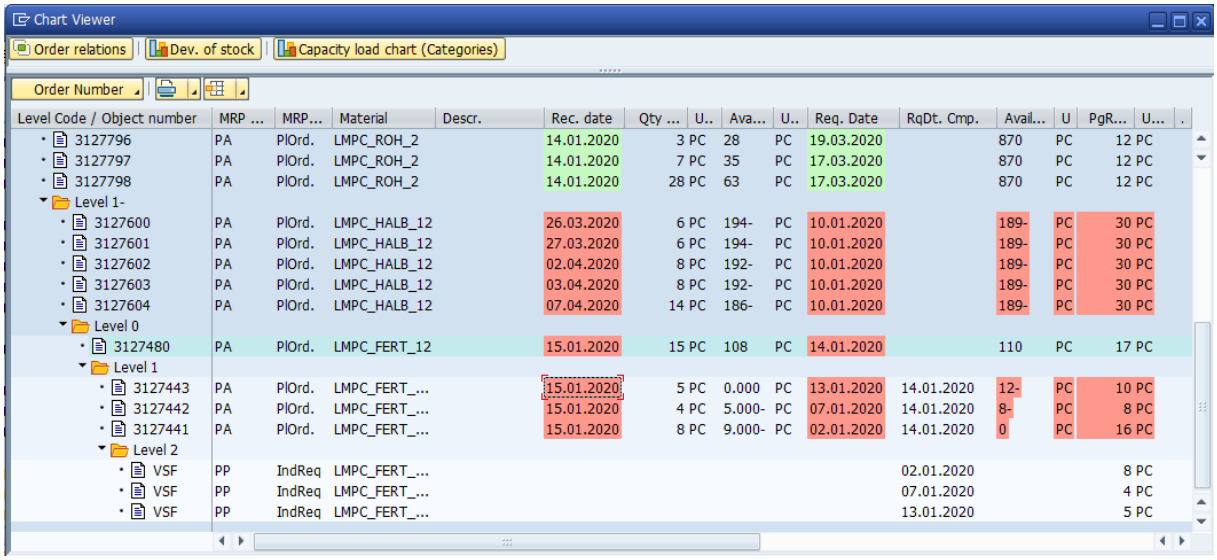
For production, orders are created at each stage for each intermediate and end material.

In the LMPC HJPT planning table, the order connections are determined using FIFO (first-in-first-out) logic via the MD04 data. These are updated dynamically each time data is changed.

However, it is also possible for the planner to define the links between the orders in order to establish links between the orders and their predecessors and successors.

In the LMPC HJPT planning table, several elements exist that can be used to read the order relations using the low-level codes.

Using the list of the order relations, you can use the low-level codes to display the production route with all upstream and downstream elements, starting from an order.

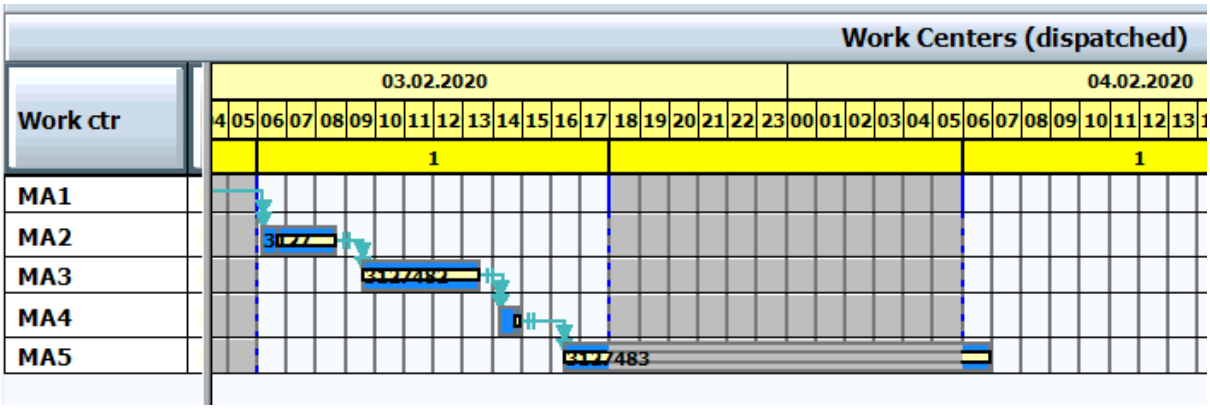


Production Hierarchy View

List of Order Relations [page 86]

You can see which successor order is delivered by which predecessor.

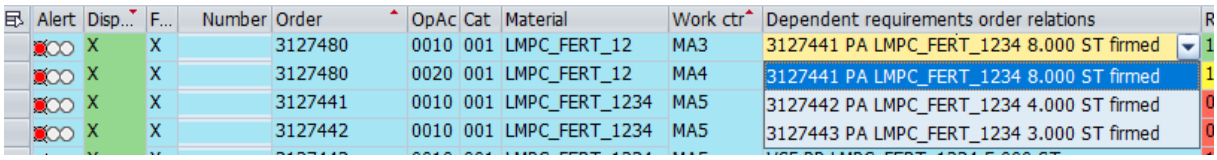
The links to the orders in the graphical part of the HJPT planning table can also be used to read the connections.



Graphic Link Lines

Connecting Lines for Bars in Bar Chart [page 51]

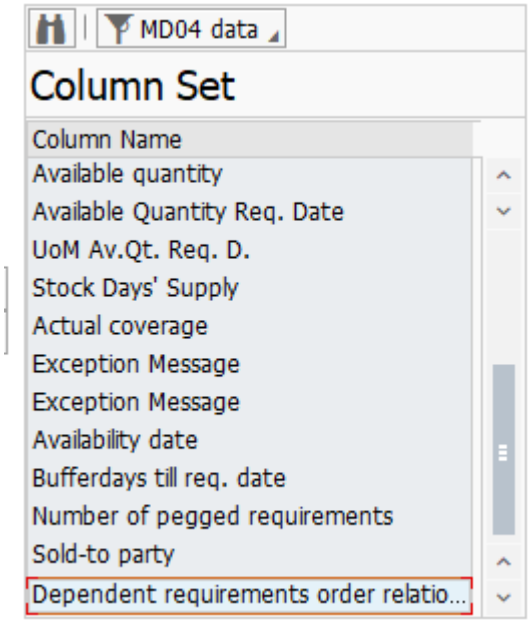
In the ALV Grid, you can display a dropdown field that contains the current assigned dependent requirements for each order.



Dropdown Field with Dependent Requirements

The field is called *Dependent Requirements Order Relations* and is in the layout group of the MD04 data.

Dependent Requirements Order Relations field



Dependent Requirements Order Relations Field

It contains the following data:

- MRP element number, for example, order number
- MRP element short description
- Material number
- Linked quantity
- Unit of measure
- Firming indicator

The field is filled using the data provider /LMPC/CL_DP_BED. Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]

There are two functions for planning the order operations via the low-level codes that can be adapted to the planning requirements using extensive configuration options.

- S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]
- S_EPML Multilevel Planning [page 323]

The two action codes are explained in the following chapters.

You can use the LMPC elements for multilevel planning to ensure that:

- The planner has an overview of delays, bottlenecks, or free production capacities at the respective low-level codes at all times.
- Dispatching is such that preliminary products are completed on time before the production of the finished materials is started.
- The correct quantity of preliminary product that is required for the production of the finished product is produced. This can help to reduce stockholding.

2.6.5.39.1 S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming

Establish Firmed Relations Between Orders. Across Low-Level Codes

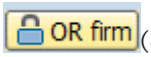
Use

In the HJPT planning table, "order relations" are the relationships between the orders across low-level codes.

For order relations, the (partial) quantity of one or more orders of a material is assigned to the requirement quantity of the components of one or more orders of another material. The relation is determined via the material BOM. The relationships can run on multiple levels via all low-level codes.

The HJPT planning table calculates the order relations using the material BOMs dynamically according to the first-in-first-out principle and displays these in the list of the order relations, in the ALV Grid field of the dependent requirements, and as lines between orders in the graphic.

However, you may want certain orders of a component material to be firmly assigned to higher-level orders independently of first-in-first-out.

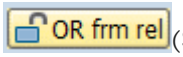
You can use the action code for firming order relations 

(S_ORFIRM) to establish precisely this firm relation between orders.

These firm relations are then taken into account when calculating the order relations for the order relations list and for the ALV Grid field of the dependent requirements.

The firmed quantities of these orders can then no longer be used to create relations to other orders.

In multilevel dispatching, these firm relations are also taken into account to determine the correct sequence of the orders and their dispatching dates. (S_EPML Multilevel Planning [page 323])

You can use the action code for undoing the firm order relations 

(S_ORFREL) to undo the firm relations.

> → Tip
>
> During the order conversion of planned to production or process orders, the order relations are retained.

> ⚠ Restriction
>
> - The firming of the order relation works only between orders. It is not possible to firm the warehouse stock or a sales order.

- Firm relationships can only be formed between operations that are open in the HJPT planning table.

> ⚠ Caution
>
> The firming of order relations affects the "available quantity" field for an order in the ALV Grid. When the order is received, if it is linked to a dependent requirement, the linked quantity is not added to the available quantity because the quantity has already been assigned.
>
> It is only counted as a receipt for the order to which it is linked.
>
> On the other hand, when the dependent requirement retires the quantity, this quantity is then subtracted from the outgoing quantity and reduced so that the dependent requirement only consumes the quantity that has not yet been firmed.

Prerequisites

To firm using a suggestion list, the data provider must be active for the BOMs and the corresponding materials must be displayed in the BOM data so that they are found.

Procedure

There are three ways of firming order relations:

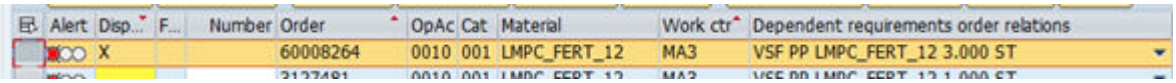
- Selection of orders
- Automatic firming
- Firming using suggestion list

The action code can also only be used for the following actions:

- Display only existing relations
- Perform a consistency check on existing firmed order relations

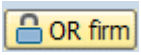
Application Example:

Select one or more operations of orders in the LMPC ALV Grid.



Alert	Disp...	F...	Number	Order	OpAc	Cat	Material	Work ctr	Dependent requirements order relations
	X			60008264	0010	001	LMPC_FERT_12	MA3	VSF PP LMPC_FERT_12 3.000 ST

Selection

Execute the action code 

(S_ORFIRM).

Display Existing Relationships

If the action code is set so that it only displays the existing order relations, then the system determines all firmed order relations for the selected operations forwards towards the finished material and backwards towards the starting material. This is displayed in a popup window.



Display Firmed Order Relations

The window contains the following fields:

- Order number of higher-level order
- Material number of higher-level order
- Order quantity of higher-level order
- Requirement quantity of component
- Order number of the assigned order for the component
- Material number of component
- Quantity of the order of the component
- Firmed linked quantity
- Unit of measure

Form Firmed Relation via Selection

If the action code is set in such a way that the system searches for relationships between the selected operations, the BOMs of the orders are evaluated and relationships are created. The system searches for components for an order with a specific material. These quantities are then linked together.

The relation is only between the selected orders.

The relationships found are displayed.



Proposal for Firming of Order Relations

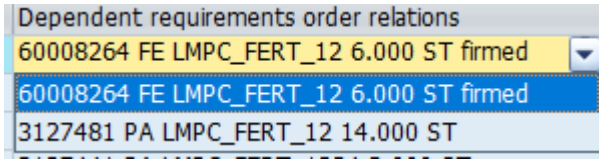
The user can now decide whether these relationships are to be firmed. You can use the checkbox in the first column to select or deselect entries.

The maximum possible quantity of an order for the component material is always linked to the higher-level order. It is not possible to change the quantity.

If the window is confirmed, the relations are firmed.

You can then see the firmed relationships in the ALV Grid field of the "dependent requirements order relations" and in the list of the order relations.

Dependent Requirements Order Relations Field:



Dependent Requirements Order Relations Field

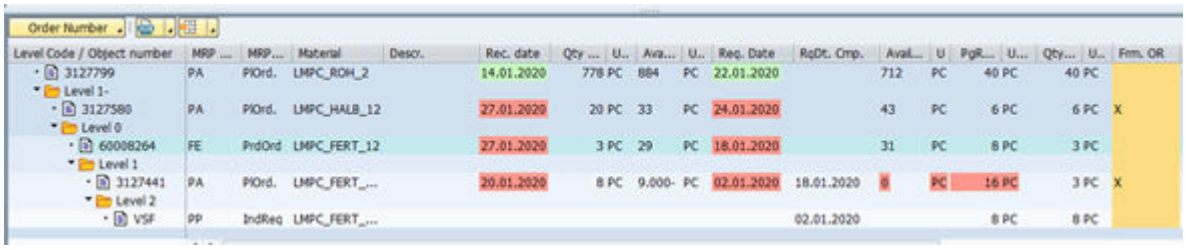
This field shows all dependent requirements that are assigned to an order. These can be orders, planned independent requirements, and sales orders.

The field contains the following information:

- Order number of dependent requirements

- MRP element of dependent requirements
- Material number of dependent requirements
- Linked quantity
- Unit of measure
- Relation firmed or not.

List of Order Relations



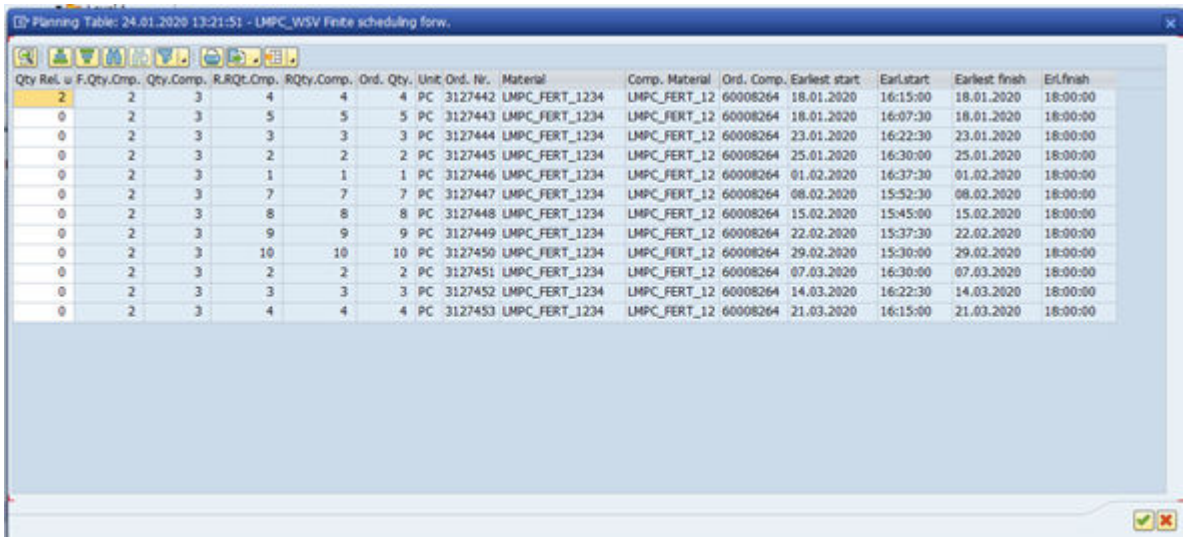
List of Order Relations

In the list of order relations, there is a column that shows whether the linked quantities are firmed or not firmed.

Firming Using Suggestion List

If the action code is set to display a selection list, the system searches for suitable orders for each operation selected. Depending on the setting, the system searches either backwards in the direction of the source material only, forwards in the direction of the finished material only, or in both directions. The system always searches for each selected operation.

A popup window displays the orders for selection.



Selection List: Firming of Order Relations

For each order selected, the system displays all the orders that can be linked.

One line is generated per component and per assignable order.

Since the relations can be over several levels depending on the layout of the BOMs, a dialog box appears for each level.

In the first column of the window, you can specify which quantity is to be linked firmly. The system generates a proposal.

The window contains the following fields:

- Related quantity: Ready for input to define firming
- Quantity of component that can be firmed: Quantity of the component material that is still free. It is therefore not yet firmly linked to another order.
- Component quantity: Quantity of the order of the component material
- Remaining requirement quantity components: Requirement quantity for components of the higher-level order, which is not yet firmly linked to other component orders.
- Requirement quantity components: Requirement quantity of higher-level order
- Order quantity Quantity of higher-level order
- Unit of measure
- Order number of higher-level order
- Material number of higher-level order
- Material number of component material
- Order number of component order

In addition to the fields listed, all fields of the ALV Grid of the HJPT planning table are also available.

You can use the layout settings to define the sequence of the fields and to show and hide fields.

If more than one component can be firmed for each order, the system first displays all orders for the first component in the window and then all orders for the next component, and so on.

If an order is already fully firmed, it is no longer available in the selection list. Existing firmings are also no longer displayed in the selection list.

After firmed relationships are defined, the logic checks the quantities that are to be linked and corrects them to the maximum possible quantity.

The system then displays another window that displays the selected firmed relationships.



Firmings for Installation

The generated firmings can be checked. You can use the selection field to deselect individual elements. The firmed order relations are created via the confirmation of the window.

Automatic Creation of Firmed Relationships

If the action code is set to automatic determination of the connections, the system searches for suitable orders for the selected operations using the BOM. In this way, the number of orders is linked in a forward and downstream process until the total order quantity is served.

Depending on the action code setting, the search can only be performed backwards in the direction of the starting material, or only forwards in the direction of the finished material, or in both directions.

The logic searches for suitable orders here, in the same way as for the list of the order relations, using FIFO (first-in-first-out) logic. The orders that are linked forwards and backwards can be read beforehand using the list of the order relations, since the same logic is applied here. (List of Order Relations [page 86])

If it is not deactivated in Customizing, the popup window that displays the relationships to be created opens before the installation.

Consistency check

A consistency check is performed automatically after each installation. The system checks whether the related quantities correspond to the maximum possible quantities.

The system checks all new relationships to be created and all existing relationships in the system.

If an overbooking of the quantities is determined, the data records that are too much are offered for deletion. New data records take precedence over old data records. This means that the older data record is deleted if there is a conflict.

The underlying idea is that a user can create new data records without first having to delete old data records. The consistency check automatically deletes the data for the user.

The incorrect firmed order relations are displayed in a popup window.



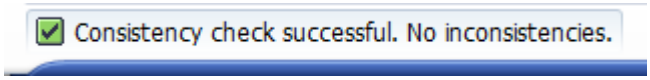
Consistency Check Result: Overbooking

If the user does not want certain data records to be deleted, they can use the checkbox at the beginning of the line to deselect those data records.

When you confirm, the selected firmed relationships with errors are deleted.

The consistency check can be deactivated in Customizing. The function can also be set in such a way that only the consistency check is executed.

If the consistency check is successful, a message is displayed in the status bar.

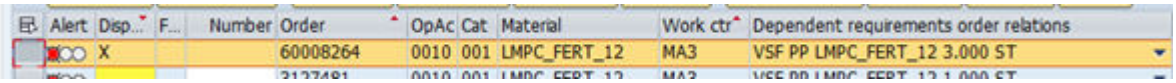


Successful Consistency Check

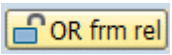
Resolving Order Relations

Resolving firmed order relations works in the same way as creating these.

Select one or more operations in the ALV Grid.



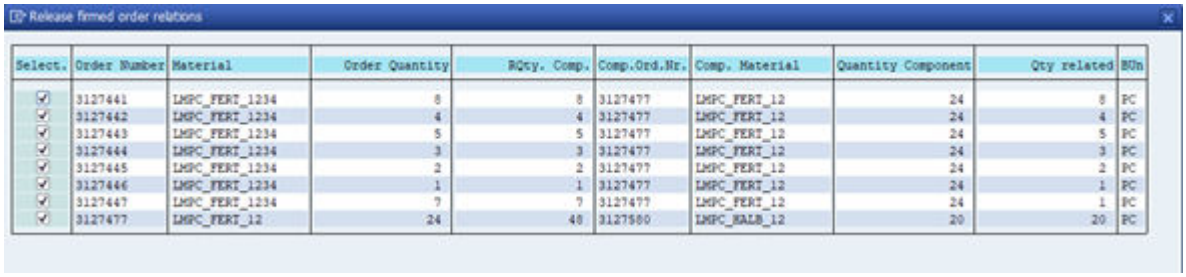
Selection

Execute the action code 

(S_ORFREL).

Depending on the logic you set, the system searches for the firmed order relations either forwards and backwards, or only forwards, or only backwards.

A dialog box with the firmed order relations appears. The user can select which firmed relationships are to be resolved.



Select to Resolve Firmed Relations

If you confirm the window, the relations are resolved.

⚠ Caution

- If the order quantity in the order is changed, this information is not passed on to the firmed order relations. Therefore, when the order quantity is changed, the firmings must be adjusted.
- The logic of the automatic creation and the logic for the selection can be used to resolve the firming. The logic for the selection list cannot be used.

→ Tip

- The creation and resolving of the firmed order relations both take place in simulation mode. The firmings are only written to the database when you save.
- If you do not want to check the firmings to be created and firmings to be resolved, you can deactivate the dialog box in Customizing.
- You can also create the firmed order relations in the background using a job. Program /LMPC/HJPT Background Processing [page 26]
- The creation and resolving of the firmed order relations can both take the LMPC pool ID into account. This can be activated using a parameter in the action code. The system then searches for all other operations of the same pool ID for the pool ID of the selected operations and includes them in the selection for processing. Only the operations are included in processing; the pool ID does not have any other functions. It is not used to define a hierarchy. The pool ID can be used, for example, if the orders are to be grouped before the firmed relations are created.

⚠ Restriction

The firming of order relations does not support co-production. If orders use the co-products or by-products as consumable materials, the links are only generated in the direction from the finished material to the source material. In the other direction with the order of the co-product as the starting point in the direction of the consumption of the co-products or by-products, the links are not generated.

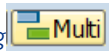
Related Information

S_ORFIRM, S_ORFREL Configuration: Firm order relations and undo firming

2.6.5.39.2 S_EPML Multilevel Planning

Simultaneous Planning Across Several Low-Level Codes

Use

You can use the action code for *multilevel dispatching* 

(S_EPML) to dispatch operations across multiple low-level codes in such a way that preliminary products are completed before finished products are produced.

The logic uses the logic of the order relations to search for the connected orders for each selected operation. Depending on the setting, the logic searches either backwards from the finished product in the direction of the raw material, or forwards from the raw material in the direction of the finished product, or in both directions (List of Order Relations [page 86]).

If there are no firmed relationships, the order relations are created using the first-in-first out logic using the material BOM. If firmed order relations exist, these are taken into account first. The firmed order relations override the first-in-first-out logic.

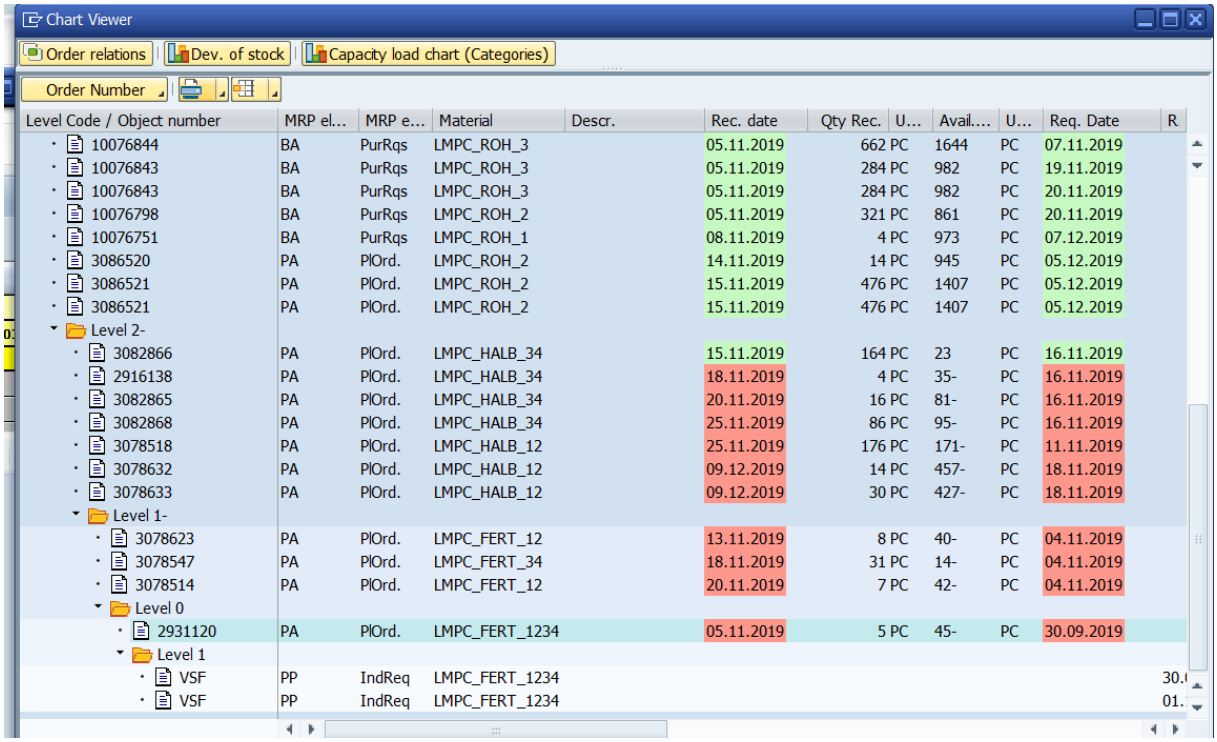
> → Tip
>
> We recommend that you firm the order relations before executing the function. This makes it easier to understand the dispatching result. S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]
>
> If you only work with dynamically created relationships planning situations can arise that are no longer understood by the user. In the case of dynamic relationships, the relationships that are calculated after planning probably do not display the relationships that were calculated before planning and with which they were planned. Before planning, for example, chains A1 – B1 – C1 and A2 – B2 – C2 were formed. The operations are placed where free capacity is available. However, due to planning, placement can occur in such a way that the dynamic calculation of the order relation then calculates the chains A1 – B2 – C1 and A2 – B1 – C2. The relationships are only retained if the relationships were firmed before planning.

If one of the selected operations belongs to a pool ID and the replenishment of the selection with pool ID orders is switched on via a parameter, all operations for this pool ID are included in the selection.

> ⚠ Restriction
>
> Only operations and orders that are open in the HJPT planning table are determined for the action code, since only these operations can be planned. If all operations of an order are to be put into a correct sequence, all operations of this order must be opened in the planning table. The function cannot take into account any operations that are not open.

Procedure

In the list of order relations, you can see a list of related orders across the low-level codes.



Level Code / Object number	MRP el...	MRP e...	Material	Descr.	Rec. date	Qty Rec.	U...	Avail....	U...	Req. Date	R
10076844	BA	PurRqs	LMPC_ROH_3		05.11.2019	662	PC	1644	PC	07.11.2019	
10076843	BA	PurRqs	LMPC_ROH_3		05.11.2019	284	PC	982	PC	19.11.2019	
10076843	BA	PurRqs	LMPC_ROH_3		05.11.2019	284	PC	982	PC	20.11.2019	
10076798	BA	PurRqs	LMPC_ROH_2		05.11.2019	321	PC	861	PC	20.11.2019	
10076751	BA	PurRqs	LMPC_ROH_1		08.11.2019	4	PC	973	PC	07.12.2019	
3086520	PA	PlOrd.	LMPC_ROH_2		14.11.2019	14	PC	945	PC	05.12.2019	
3086521	PA	PlOrd.	LMPC_ROH_2		15.11.2019	476	PC	1407	PC	05.12.2019	
3086521	PA	PlOrd.	LMPC_ROH_2		15.11.2019	476	PC	1407	PC	05.12.2019	
Level 2-											
3082866	PA	PlOrd.	LMPC_HALB_34		15.11.2019	164	PC	23	PC	16.11.2019	
2916138	PA	PlOrd.	LMPC_HALB_34		18.11.2019	4	PC	35-	PC	16.11.2019	
3082865	PA	PlOrd.	LMPC_HALB_34		20.11.2019	16	PC	81-	PC	16.11.2019	
3082868	PA	PlOrd.	LMPC_HALB_34		25.11.2019	86	PC	95-	PC	16.11.2019	
3078518	PA	PlOrd.	LMPC_HALB_12		25.11.2019	176	PC	171-	PC	11.11.2019	
3078632	PA	PlOrd.	LMPC_HALB_12		09.12.2019	14	PC	457-	PC	18.11.2019	
3078633	PA	PlOrd.	LMPC_HALB_12		09.12.2019	30	PC	427-	PC	18.11.2019	
Level 1-											
3078623	PA	PlOrd.	LMPC_FERT_12		13.11.2019	8	PC	40-	PC	04.11.2019	
3078547	PA	PlOrd.	LMPC_FERT_34		18.11.2019	31	PC	14-	PC	04.11.2019	
3078514	PA	PlOrd.	LMPC_FERT_12		20.11.2019	7	PC	42-	PC	04.11.2019	
Level 0											
2931120	PA	PlOrd.	LMPC_FERT_1234		05.11.2019	5	PC	45-	PC	30.09.2019	
Level 1											
VSF	PP	IndReq	LMPC_FERT_1234								
VSF	PP	IndReq	LMPC_FERT_1234								

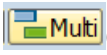
Overview of a Hierarchy of Related Orders

You want to dispatch this list completely in such a way that all operations at a lower low-level code are already completed before production of the next order is started at the next highest low-level code.

In this example, an operation of the order is selected at the highest low-level code.

Alert	Dispat...	F...	Order pool	Order	OpAc	Material	Work ctr	Earliest start	Earl.start	Earl. finish /date
		X		2931120	0010	LMPC_FERT_1234	MA5	04.11.2019	06:00:00	04.11.2019
		X		2931121	0010	LMPC_FERT_1234	MA5	04.11.2019	06:00:00	04.11.2019

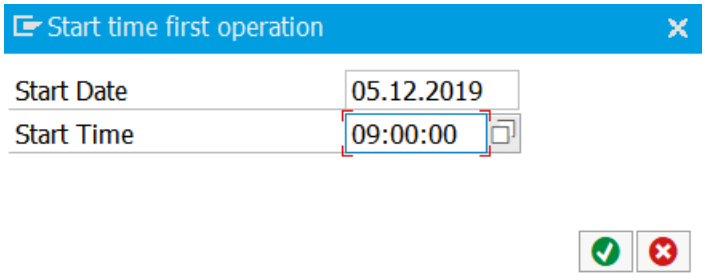
Selection of Order Operation at Highest Low-Level Code

The action code 

(S_EPML) is executed.

The flow of the function depends on the Customizing settings.

If you have defined that the dispatching start is to be defined manually, a dialog box for entering the start time appears.



Input Window for Start Time

It may also be the case that the start time is determined from the first selected operation. Or, that dispatching should take place as early as possible. In these cases, the dialog box would not appear.

In the next step, the logic determines the order relations across all low-level codes. For action code S_EPML, the search is always performed forwards in the direction of the finished product and backwards in the direction of the raw material. In this case, the system does not find a further order when looking forwards because the order has already been selected with the finished product. The action code can be configured in such a way that the determination is carried out forwards only or backwards only.

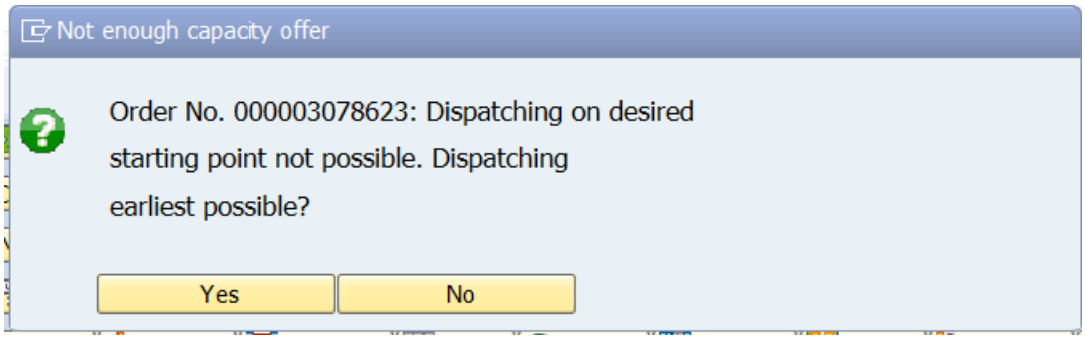
You can define that only orders of firmed relationships are taken into account during determination. This means that you can only dispatch the orders that were previously linked together.

The operations are planned from raw material to finished material. Depending on which dispatching logic is set, either the entered start time or the start time of the first selected order is used. If logic 1 is used, the start time is used as the dispatching time for the operation that must be dispatched as the first operation in the order relation sequence. Dispatching takes place forwards, starting with the first operation in the network determined. If logic 2 is used, the start time is considered to be the start time for the first operation of the first selected order. Dispatching takes place backwards for all orders before the selected order and forwards for all orders from the selected order onwards.

In this example, logic 2 is used.

In logic 2, the system first checks whether it is possible to dispatch the operations so that the first selected operation can be positioned on the desired date.

If this is not possible because there is not enough available capacity available and, according to the calculation, an operation had to be dispatched in the past, a warning is displayed. It is queried whether dispatching can be as early as possible instead.



Warning for Date Problems

If this SAP Note is confirmed, dispatching takes place at the earliest possible for all orders. If the note is not confirmed, the function terminates without dispatching.

In this example, there is sufficient capacity. Dispatching takes place on the desired date.

After dispatching, all processed operations are selected in the ALV Grid so that the user can tell which operations have been dispatched.

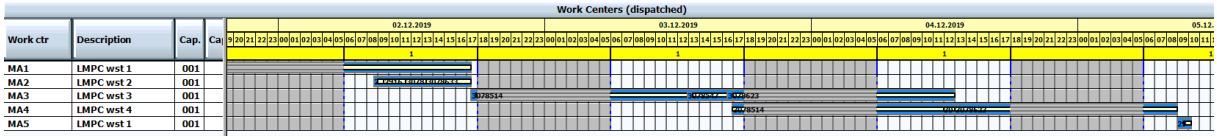
In the ALV Grid, you can see that the first selected operation has been dispatched for the desired start time:

Alert	Dispat...	F...	Order pool	Order	OpAc	Material	Work ctr	Earliest start	Earl.start	Earl. finish /date	Erl.finish tim
	X	X		2916138	0020	LMPC_HALB_34	MA2	02.12.2019	09:32:00	02.12.2019	11:32:00
	X	X		3078632	0020	LMPC_HALB_12	MA2	02.12.2019	11:32:00	02.12.2019	13:24:00
	X	X		3078633	0020	LMPC_HALB_12	MA2	02.12.2019	13:24:00	02.12.2019	17:24:00
	X	X		3078514	0010	LMPC_FERT_12	MA3	02.12.2019	17:24:00	03.12.2019	12:54:00
	X	X		3078547	0010	LMPC_FERT_34	MA3	03.12.2019	12:54:00	03.12.2019	16:30:00
	X	X		3078514	0020	LMPC_FERT_12	MA4	03.12.2019	16:58:00	04.12.2019	11:58:00
	X	X		3078623	0010	LMPC_FERT_12	MA3	03.12.2019	16:30:00	04.12.2019	13:00:00
	X	X		3078547	0020	LMPC_FERT_34	MA4	04.12.2019	11:58:00	04.12.2019	13:00:00
	X	X		3078623	0020	LMPC_FERT_12	MA4	04.12.2019	13:00:00	05.12.2019	09:00:00
	X	X		2931120	0010	LMPC_FERT_1234	MA5	05.12.2019	09:00:00	05.12.2019	10:15:00
		X		2770241	0020	LMPC_HALB_34	MA2	04.11.2019	06:00:00	04.11.2019	06:45:00

Result in ALV Grid of HJPT Planning Table

All other related orders have also been dispatched.

In the graphical part of the HJPT planning table, you can see the dispatching sequence for the different work centers.



Overview of Planning Situation

→ Remember

- Multiple operations can be selected. In this case, the relationships are determined for each selected order.
- The logic works at the level of order numbers. When dispatching, all open operations of an order are therefore always dispatched. If operations of an order are not open in the planning table, they cannot be taken into account.
- Orders that have already been dispatched are rescheduled so that the sequence of the orders is consistent.
- The action codes can also be used for dispatching in the background in a nightly planning run. Program /LMPC/HJPT Background Processing [page 26]
- It is possible to process operations with pool IDs. If the corresponding parameter is set in the settings, it is sufficient to select one operation from an order pool. All operations for the same pool are automatically included in the selection. The pool ID does not have any other functions. No order relations can be created with the pool ID. To create firm relations, you must use the function for firming the order relations.
- You can set whether the capacity requirements are to be planned without gaps or whether additional times are to be taken into account. If planning is carried out without gaps, the operations are dispatched across the low-level codes in such a way that the first operation of an order with a setup directly follows the end of the teardown of the last operation of the preceding order. In this case, the logic assumes that components are immediately available for further processing at the end of production. The only capacity-relevant times are setup, processing, and teardown.
  However, if additional times are to be taken into account, production of the order cannot start until all its components are available for MRP.
  Not all times that can be set in the master data are taken into account in the logic. Only the queue time before setup, the float after production from the scheduling margin key, and the goods receipt processing time from the material master are included in the calculation. Where defined, the float after production and the goods receipt processing time are added to the end of the last operation of an order

to calculate the MRP availability. Production of the subsequent material cannot start until the day on which the components are available for MRP. If a queue time is maintained, production is not started until after the queue time.
The logic does not take into account a float before production from the scheduling margin key. It assumes that the components must be available at the start of production and not on the basic start date of an order. Therefore, we recommend that you set the date adjustment in the scheduling parameters to "Adjust Basic Dates, Dependent Requirements to Operation Dates". Other scheduling settings are not supported.
The wait time after teardown and the transportation time between the operations of an order are also not taken into account in the logic. These times must not be set in the master data because otherwise the result of the calculation for the dispatching dates is incorrect.

⚠ Restriction

- Only operations of orders that are open in the HJPT planning table are dispatched. If a correct sequence of all operations of an order is to be reached, all operations of an order must be open in the planning table. Operations that are not open cannot be taken into account when dispatching dates are calculated.
- The logic executes a capacity check. It is assumed that all operations of orders are sequential. It is not planned to process parallel operations.
- The logic is not suitable for orders with suboperations.
- No partial quantities are taken into account. If only part of an order quantity is required for the subsequent order, the system waits until the entire order has been produced before starting to dispatch the next order in the next step.
- The MRP availability of the components for subsequent orders is only determined via the production of materials using orders. The system does not check the availability of materials in the warehouse or check against the replenishment lead time in the sense of an ATP check.
- Multilevel planning with co-production is only partially supported. If orders use the co-products or by-products of co-production as consumable materials, the links in the direction from the finished material to the source material can be generated. However, the links cannot be generated in the other direction, with the order of the co-product as the starting point in the direction of the consumption of the co-products.
- This function is a finite scheduling function with which operations can be put into a logical sequence across multiple low-level codes, depending on the available capacity. This logic does not reflect the logic of the MRP run.
- This logic does not resolve the displayed conflicts in the list of order relations.
- The data records are processed sequentially using a heuristic. There is no mathematical optimization.
- The logic is based on the LMPC logic of the order relations that are formed using the data of transaction MD04. Order relations can be created only for orders of make-to-stock production in the plant segment, for make-to-order production, and for the project system. Therefore, the logic cannot be used with orders from other stages. Operations of orders from collective orders cannot be planned with this function.

Related Information

S_EPML Configuration: Multilevel Dispatching

2.6.5.40 Planning with Consideration of HJPT Firming Indicator

There is a special planning scenario for the HJPT planning table for planning in connection with the HJPT firming indicator.

The goal is a seamless production plan. The operations with the HJPT firming indicator should remain in their positions. All other operations that do not have this HJPT firming indicator are to be placed above the HJPT firmed operations without moving the operations with the HJPT firming indicator if they do not end directly before the start of an HJPT-fixed operation. During the duration of the operations with the HJPT firming indicator, the operations set in parallel do not have a capacity requirement. The parallel operations are extended accordingly.

This special behavior during planning is achieved with a complex planning logic that handles the HJPT-fixed operations like breaks.

> ⚠ Restriction
>
> - During this planning, the operations that do not have an HJPT firming indicator are set in parallel to the operations with the HJPT firming indicator. However, the operations with the HJPT firming indicator themselves must not overlap each other or be dispatched in parallel. Operations with the HJPT firming indicator must be dispatched sequentially individually, with or without gaps between the individual operations of the orders.
> - Production orders must not have the HJPT firming indicator and a standard firming at the same time. In this planning, the operations with the HJPT firming indicator must be deallocated in between in order to be able to generate breaks. If the standard firming is set, deallocation is not possible.

The following action codes can be used for this special planning methodology:

- S_FIX, S_FIXE Firm and remove firming of orders [page 395]
- S_EPFX Dispatching Across Firmed Operations [page 328]
- S_RESCPF Reschedule: HJPT Firming Indicator and Parallel Planning with Pool ID [page 333]
- S_RBPL Rule-Based Dispatching [page 240]

> ⚠ Caution
>
> Planning with the HJPT firming indicator must not be confused with another frequently desired behavior. This is not about firming operations from planned orders to positions so that they cannot be moved. Planned orders cannot be firmed to a certain position for technical reasons. For explanations on this topic, see the chapter on firming. S_FIX, S_FIXE Firm and remove firming of orders [page 395]

2.6.5.40.1 S_EPFX Dispatching Across Firmed Operations

Use

This function is a planning function for very specific requirements.

It is used in connection with the LMPC function for setting the HJPT firming indicator. S_FIX, S_FIXE Firm and remove firming of orders [page 395]

In the HJPT planning table, you can set an HJPT firming indicator for operations of orders. If this indicator is set and these operations have been dispatched, this is the information for the planning function S_EPFX that these operations must never be rescheduled. They must not be moved in time and must remain fixed in their position.

If you dispatch operations without the HJPT fixing indicator with S_EPFX, the planning function S_EPFX creates the operations to be dispatched in parallel to the operations that have the HJPT fixing indicator as if these operations were breaks. They lay across the HJPT fixed operations as it were.

The operations with HJPT firming indicators are treated like breaks during dispatching, that is, as areas in planning in which no capacity offer is available.

As a result, an operation that is that is above an HJPT-fixed operation becomes longer. Its capacity requirement remains unchanged.

This function enables you to create a production plan without gaps and to fulfill the condition that individual operations are fixed to specific dates from the outset.

Technical explanation for planning: When planning is executed, the HJPT-fixed operations are deallocated as a first step, and their times are defined as breaks. The operations that are to be dispatched are then dispatched using the standard function. In the last step, the defined breaks are removed and the fixed operations are re-dispatched infinitely to the removed break times. With this method, the operations that have the HJPT firming indicator remain unchanged in their positions.

> ⚠ Caution
>
> This function cannot be used in conjunction with other HJPT planning functions. If you reschedule an operation that was dispatched with this function using a different HJPT planning function, this special planning situation will be resolved. Conversely, this means that you must always use the function S_EPFX to dispatch and reschedule operations that must fulfill this special scenario. Various setting options have been created to enable you to plan extensively with this function.

The following application options are possible for S_EPFX:

- Dispatching operations at the earliest possible time.
- Manual planning by entering a desired start time.
- Dispatching operations on the dates that are currently in the operation.
- Dispatching and rescheduling operations in the graphic using drag and drop.

You can use this function to dispatch planned orders, production orders, and process orders.

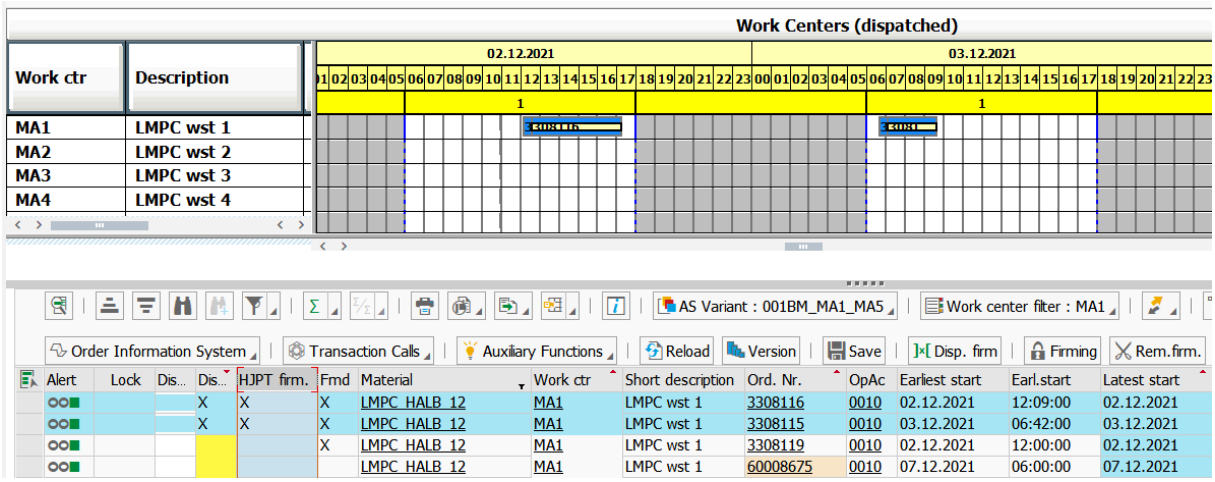
This function can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

The function for restricting action codes also works with this planning function. Both for planning using the AVL Grid and for planning using drag and drop. Action Code Limits [page 104]

Procedure

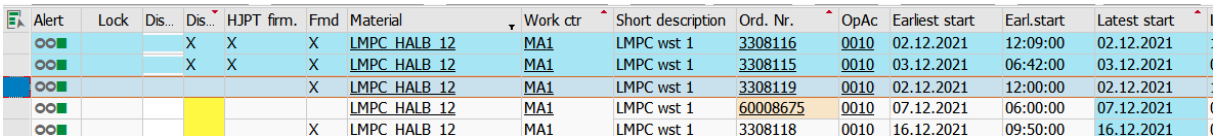
Planning Using the ALV Grid

Two operations have already been dispatched to the work center. These operations have the HJPT firming indicator.



Initial Situation

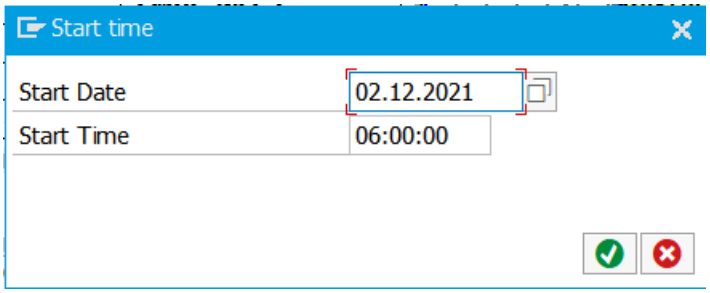
Select one or more operations that are to be dispatched.



Select Order Operation

Execute the action code]x[Disp. firm (S_EPFX).

If you have configured manual planning, the system displays a popup window for entering a start time.



Dialog Box for Manual Planning

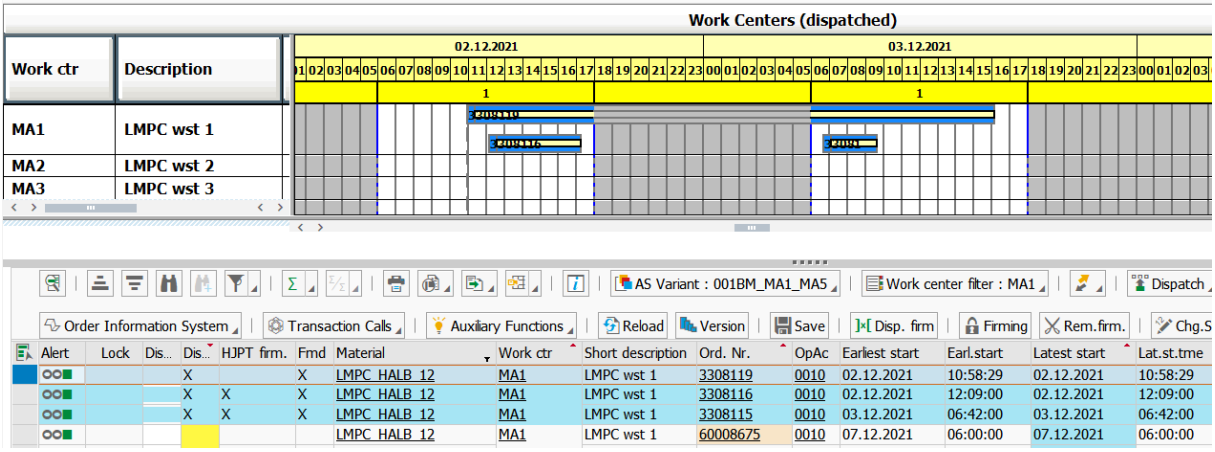
In this case, enter the desired start time and confirm it.

If you have set another dispatching, for example, dispatching at the earliest point in time, no window appears.

Dispatching is executed.

> ### Note
>
> If the selection contains operations that contain the HJPT firming indicator, these operations are removed from the pool of selected operations. Operations that have the HJPT firming indicator cannot be dispatched or rescheduled.

Result:



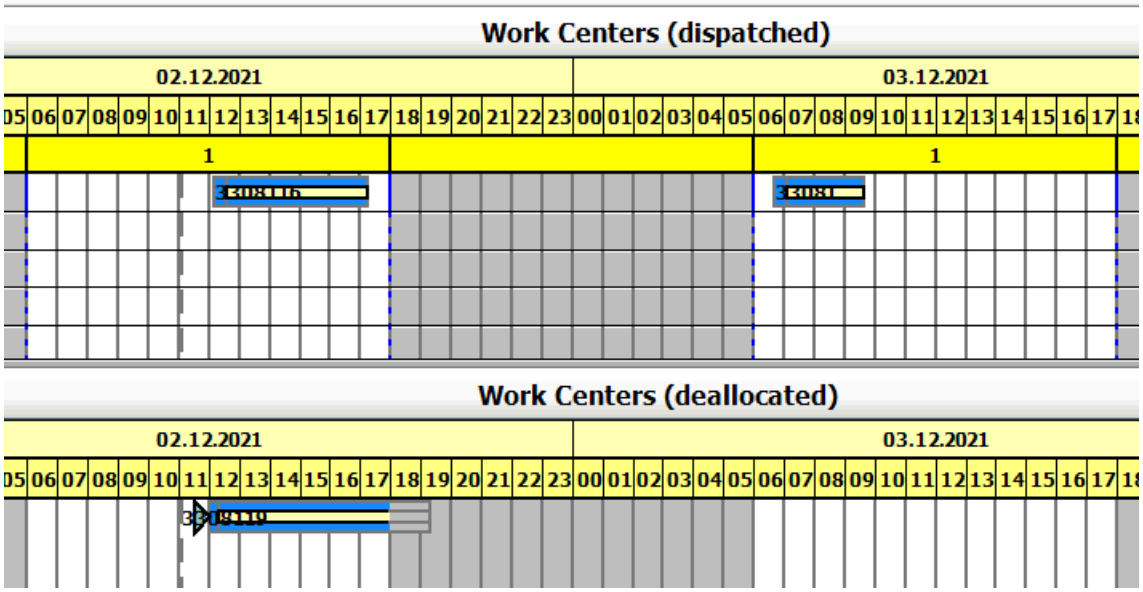
Planning result

Using the graphic, you can see that the operation to be newly dispatched has been set over the operations that have the HJPT firming indicator. The operations with the HJPT firming indicator remain unchanged in their positions. The new operation to be dispatched is parallel. Its duration has been adjusted.

> ⓘ Note
>
> Since the HJPT-fixed operations are treated like breaks during dispatching, only the duration of the operation that is placed over these operations is extended. Its capacity requirement remains unchanged. This means there are no overloads. The capacity utilization of the work center is correct.

Planning using drag and drop in the graphic

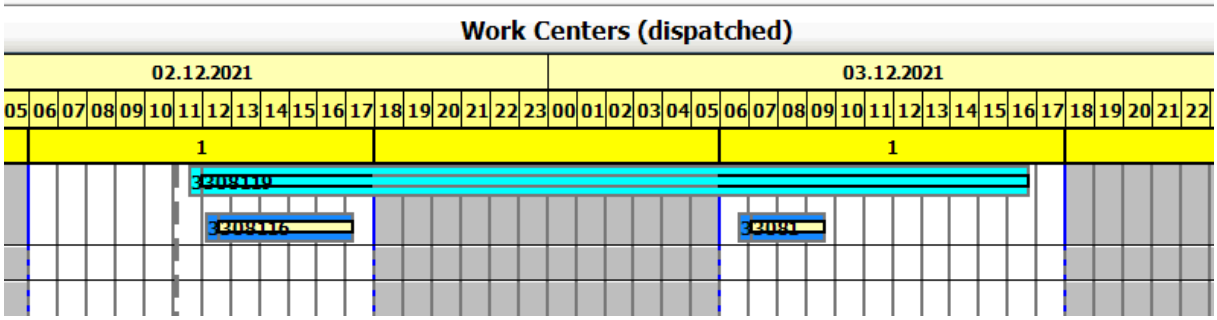
Select an operation that has not yet been dispatched and that does not have an HJPT firming indicator.



Initial Situation Before Drag & Drop

Drag this operation from the chart for the dispatched operations to the dispatched operations that have an HJPT firming indicator.

Result:



Drag & Drop Result

The operation is above the two firmed operations.

It is also possible to reschedule operations that have already been dispatched using drag and drop. For this, an operation that has already been dispatched and does not have an HJPT firming indicator is dragged over operations that have the HJPT firming indicator.

It is not possible to use drag and drop to move or deallocate operations that have the HJPT firming indicator.

→ Remember

To be able to use the function when dragging and dropping in the graphic, it must first be activated for the graphic. This is done using the Drag & Drop trigger in the capacity planning table. Thus, the standard function for dispatching is replaced in the graphic using drag and drop. For details on this, see the LMPC Configuration Guide.

S_EPFX Configuration: Dispatching Across Firmed Operations

Action Code Trigger

⚠ Restriction

- An operation that is planned beyond an HJPT-fixed operation must start before the fixed operation. It is not possible to dispatch an operation in such a way that it starts at the same time as a fixed operation or in the middle of a fixed operation. HJPT-fixed operations are treated like breaks by this planning function. No operation can start at the same time as a break or within a break for other planning functions.
- During this planning, the operations that do not have an HJPT firming indicator are set in parallel to the operations with the HJPT firming indicator. However, the operations with the HJPT firming indicator themselves must not overlap each other or be dispatched in parallel. Operations with the HJPT firming indicator must be dispatched sequentially individually, with or without gaps between the individual operations of the orders.

⚠ Caution

This function only returns correct results if the capacity offer remains unchanged during the entire planning process. The capacity offer that existed when dispatching the HJPT fixed operations must be exactly the same capacity offer that is used when dispatching the unfixed operations across the fixed operations. Note that the HJPT fixed operations are also deallocated once in the planning process and rescheduled infinitely. If you change the capacity offer, for example, due to a reduction of the capacity offer, dispatching the HJPT

fixed operations to their previously fixed times may not be possible anymore because there is no longer a capacity offer at these times. They then shift and are dispatched infinitely to the next possible times.

The function requires explanation due to its complexity. If you want to use this function, please request consulting support from SAP.

2.6.5.40.2 S_RESCPF Reschedule: HJPT Firming Indicator and Parallel Planning with Pool ID

Use

This function combines the logics of the planning function for parallel planning with pool ID (S_EPPRLP) and dispatching using fixed operations (S_EPFX) in one function.

S_EPPRLP Parallel Dispatching with Pool ID [page 280]

S_EPFX Dispatching Across Firmed Operations [page 328]

> ⓘ Note
>
> This planning function is a complex planning function for very specific use cases. Before using this function, you should have familiarized yourself with the planning functions S_EPPRLP and S_EPFX. To implement this function, it is recommended that you commission consulting support from SAP.

Certain settings must be made in the master data so that this planning function can be used. The settings are described in the section on parallel planning with several individual capacities. Parallel Planning with Several Individual Capacities [page 277]

The function is intended for creation in which orders are produced sequentially and in parallel.

You can use this planning function to reschedule operations that have already been dispatched, to adjust the existing production plan. For example, to update a late production plan.

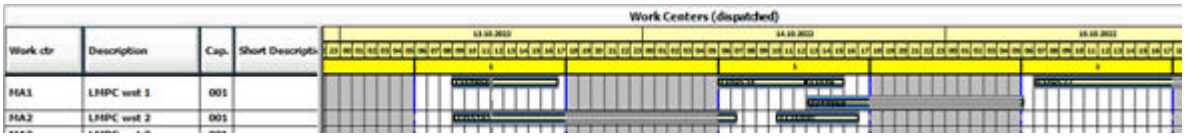
During rescheduling, the operation sequence is adhered to, operations that are sequential remain in their sequential order, parallel operations are rescheduled in parallel, and HJPT fixed operations remain in their positions unchanged. HJPT fixed operations are handled like breaks during planning. Operations without the HJPT firming indicator lie above the operations with the firming indicator and are therefore extended.

> → Tip
>
> The function is delivered in a configuration that only reschedules operations. The function can also be set up in such a way that you dispatch operations.

Procedure

Planning Using the ALV Grid

Initial situation: Operations have already been dispatched to one or more work centers. The operations are sequential and parallel. The parallel operations have a pool ID. Individual operations have the HJPT firming indicator.



Initial Situation

The start times of the first operations are in the past. The production plan is to be moved into the future.

The selection of operations depends on the settings in Customizing for the function. S_RESCPF Configuration: Reschedule Parallel Planning and HJPT Firming Indicator

There are several options:

- All operations are included in the selection automatically.
- Only operations from the first selected operation are included in the selection. For this, the operations in the ALV Grid must be sorted in ascending order, according to the start times of the capacity requirements.
- Only selected operations are processed.

In this example, only the selected operations are processed.

The user selects the operations that are to be rescheduled.

Alert	Lock	Frmd	HJPT firm.	Dispatched	Ord. Nr.	OpAc	Ord. pool	Disp. Seq.	Material	Work ctr	Description	Op. Qty	UoM
		X		X	3344866	0010			161	MA1	LMPC wst 1	40	PC
		X		X	3355161	0010			152	MA2	LMPC wst 2	20	PC
		X	X	X	3349524	0010			153	MA1	LMPC wst 1	8	PC
		X	X	X	3324400	0020			LMPC_HALB_SL_1	MA2	LMPC wst 2	48	PC
		X		X	3344867	0010	1251		161	MA1	LMPC wst 1	14	PC
		X		X	3344868	0010	1251		161	MA1	LMPC wst 1	24	PC
		X		X	3349527	0010			153	MA1	LMPC wst 1	13	PC
		X			3308334	0010			LMPC_H_UVG_1	MA1	LMPC wst 1	9	PC

Selection of Operations

The user executes the action code « Resc.P+Frm (S_RESCPF).

Various checks are run in the background.

The selection is corrected. If there are operations with a pool ID in the selection, the system ensures that all operations for this pool ID are included in the selection.

Only operations that have already been dispatched are processed. Operations that have not been dispatched are removed from the selection. With changed parameter settings, this check is omitted and all operations are processed. This allows deallocated operations to be dispatched.

If the restriction of action codes is set for this action code, the operations in the selection are checked for the restriction rules.

You can use the action code restriction to remove operations that fulfill certain conditions from the selection. These operations are then not processed in the planning function. The action code restriction can also be set in such a way that processing terminates if operations with certain properties are included in the selection. For details, see the section on restricting action codes. Action Code Limitation

If operations are removed from the selection using the action code restriction, gaps may occur in the production plan because these operations are not rescheduled. The dispatching sequence can also change as a result.

Operations of orders that are locked externally cannot be rescheduled. The same applies to operations of production orders and process orders that have a firming indicator. If there are operations with firming indicators or external locks in the selection, the function terminates with an error message. This check can be deactivated using settings in Customizing. S_RESCPF Configuration: Reschedule Parallel Planning and HJPT Firming Indicator

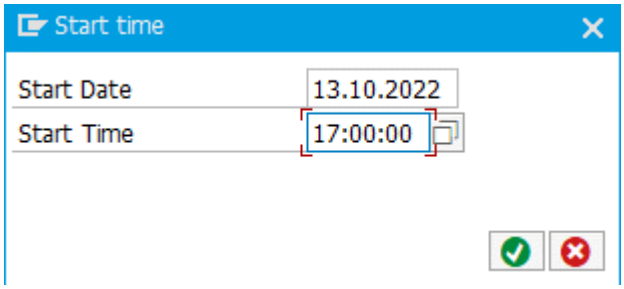
If the check is deactivated, the externally locked operations and operations with the firming indicator are removed from the selection and remain in their positions unchanged. This can lead to gaps in the production plan and to a changed dispatching sequence.

There are three setting options for the start time of dispatching:

- The operations are dispatched at the earliest possible time.
- The start time is the end of the operation that lies directly before the first selected operation.
- A popup window is used to specify the desired start time for dispatching.

In this example, manual dispatching with specification of a start time has been set.

The system displays a popup for entering the desired start time.

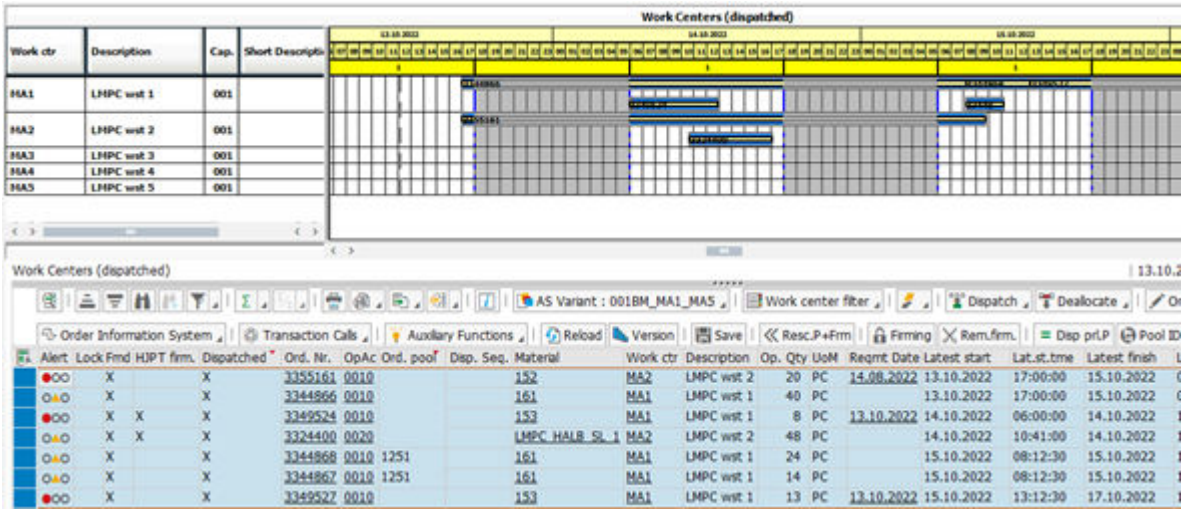


Entry of Start Time

When you confirm the window, processing starts.

The operations in the selection are rescheduled (as early as possible, or on the chosen start date). They are scheduled without gaps. Parallel operations with a pool ID remain parallel.

Result:



Result of Rescheduling

The operations were dispatched on the new start date. The parallel operations are still parallel. The operations with the HJPT firming indicator remained unchanged in their positions, the other operations have been placed above the fixed operations and became longer.

> **Note**
>
> The operations are transferred to the planning function in the sequence in which they are displayed in the ALV Grid. If you want to change the sequence of the operations during rescheduling, you can first use drag and drop to sort the operations in the ALV Grid, and then execute the rescheduling function.

HJPT Background Processing

This action code can also be used for automatic rescheduling of operations in background processing using the program /LMPC/HJPT. Program /LMPC/HJPT Background Processing [page 26]

There are two additional logics in background processing:

- Before the actual planning, a simulation of the planning is performed to check whether all operations can be rescheduled. If rescheduling is not possible for all operations, the function terminates.
- If errors occur during the planning function, the function terminates and the data is not saved. As a result, the data remains unchanged.

Both logics aim to prevent orders from being deallocated after the function run. Either all operations in the selection are rescheduled or none at all.

Planning Using Drag and Drop in the Graphic

This action code can also be used for dragging and dropping in the graphic.

Actions supported include:

- Deallocating an individual operation without a pool ID.
- Deallocating all parallel operations for a pool ID by deallocating one of the operations using drag and drop.
- Rescheduling an individual operation without a pool ID to another time at the same work center.
- Rescheduling parallel operations for a pool ID by using drag and drop to move one of the operations to the same work center.
- Dispatching an individual operation without a pool ID to the work center of the operation.
- Parallel dispatching of all operations of a pool ID to the work center of the operations.

Actions not supported include:

- Dispatching operations with a change of work center.
- Rescheduling operations with a change of work center.

The settings in Customizing also determine whether only the selected operation with related operations of the same pool ID is to be planned, or whether all operations that lie after the desired start time for dispatching are also to be rescheduled.

This setting is important for the type of planning.

If subsequent operations are not planned to be rescheduled, the moved operations are only dispatched where there is sufficient space for them. This does not move operations that have already been dispatched. If insufficient capacity is available at the desired time, dispatching takes place at the next possible point in time.

If rescheduling of all operations is set, operations that have already been dispatched may be moved. All operations that are later than the desired start time are included in the selection. All subsequent operations on the same machine are rescheduled, as long as they are not removed from the selection by the action code restriction or check for locks. Due to the rescheduling of all subsequent operations, operations can also be dispatched into gaps that are not sufficiently large because all subsequent operations are shifted. When rescheduling all operations, all operations that lie after the desired dispatching time are connected without gaps.

The subsequent operations are included in scheduling only when dispatching or rescheduling. Whereas when deallocating, only the moving operation and possibly the corresponding operations with the same pool ID are deallocated. Subsequent operations are not deallocated.

⚠ Restriction

- With this function, you can only carry out forward scheduling with or without entering a start time. Backward scheduling with or without entering an end time is not possible.
- If operations are planned in parallel, the longest operation specifies the end of parallel planning. The next operations can only be connected at the end date of the longest operation.
- The operations are processed by work center. Cross-work-center connections between several operations of an order cannot be taken into account.
- In this function, the pool ID is used to plan operations at the same work center in parallel. The pool ID is not used to plan operations across work centers. The check that adds to the selection operations that have the same pool ID as operations that have already been selected therefore only adds operations that are produced at the same work center.
- If operations are removed from processing when rescheduling operations using the action code restriction, these operations remain in their positions unchanged. This can lead to gaps in the production plan. If a plan without gaps is to be achieved, the action code restriction should not be used. The same applies to the deactivation of the lock check.
- This planning function calculates the possible positions for planning. If new operations are to be dispatched and there is not enough capacity offer, the function terminates with a warning for the operation that can no longer be dispatched.
- The processing of orders with suboperations is not supported.
- This planning function is complex and requires many calculations to process the planning. Therefore, the runtime of the function can become very long if many operations are dispatched or rescheduled at once.
- Also note the restrictions of the action code S_EPFX. Since S_EPFX is the basis for S_RESCPF, these restrictions are also valid. S_EPFX Dispatching Across Firmed Operations [page 328]

2.6.6 Selection Functions

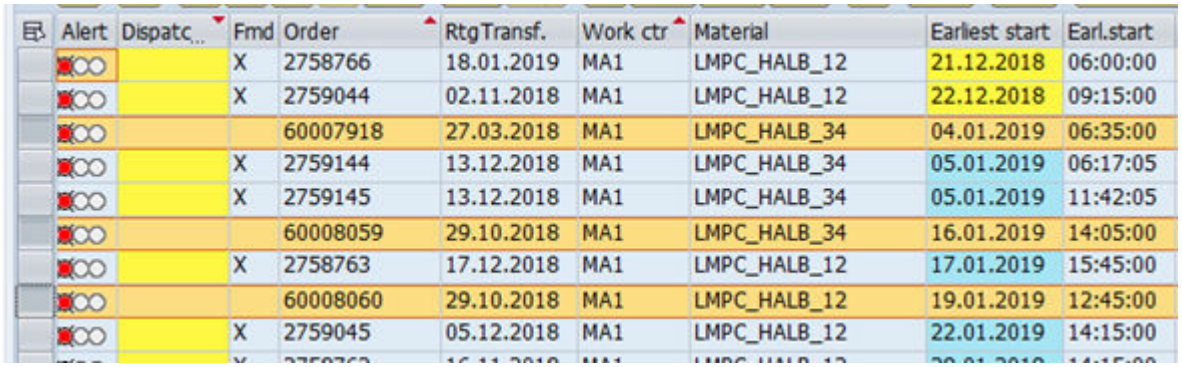
This section provides an overview of the action codes with which orders or order operations are selected in the SAP LMPC HJPT detailed scheduling planning table.

2.6.6.1 S_CASORT Sort Upwards

You can use this action code to sort all selected rows in the ALV Grid of the HJPT planning table upwards to the top. If, for example, you have clicked on a bar in the capacity chart to select the corresponding operations in the ALV Grid, you can then move these data records to the top collectively.

You can use the action code to sort the data records for later dispatching.

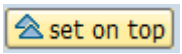
Initial situation:



Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start
		X	2758766	18.01.2019	MA1	LMPC_HALB_12	21.12.2018	06:00:00
		X	2759044	02.11.2018	MA1	LMPC_HALB_12	22.12.2018	09:15:00
			60007918	27.03.2018	MA1	LMPC_HALB_34	04.01.2019	06:35:00
		X	2759144	13.12.2018	MA1	LMPC_HALB_34	05.01.2019	06:17:05
		X	2759145	13.12.2018	MA1	LMPC_HALB_34	05.01.2019	11:42:05
			60008059	29.10.2018	MA1	LMPC_HALB_34	16.01.2019	14:05:00
		X	2758763	17.12.2018	MA1	LMPC_HALB_12	17.01.2019	15:45:00
			60008060	29.10.2018	MA1	LMPC_HALB_12	19.01.2019	12:45:00
		X	2759045	05.12.2018	MA1	LMPC_HALB_12	22.01.2019	14:15:00

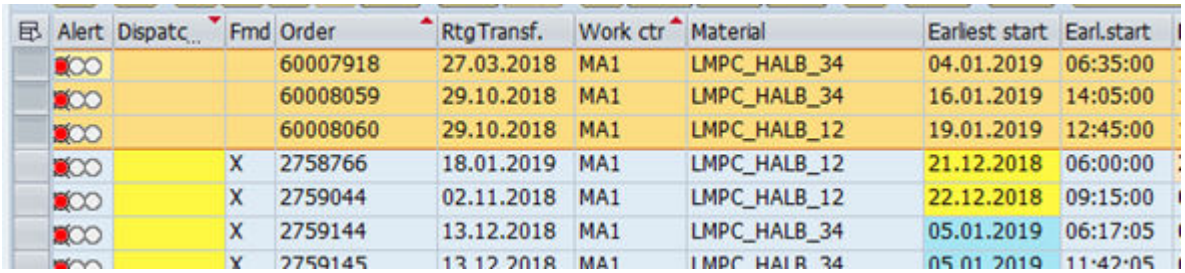
Initial Situation

Three operations have been selected in the ALV Grid.

The action code 

(S_CASORT) is executed.

Result:



Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start
			60007918	27.03.2018	MA1	LMPC_HALB_34	04.01.2019	06:35:00
			60008059	29.10.2018	MA1	LMPC_HALB_34	16.01.2019	14:05:00
			60008060	29.10.2018	MA1	LMPC_HALB_12	19.01.2019	12:45:00
		X	2758766	18.01.2019	MA1	LMPC_HALB_12	21.12.2018	06:00:00
		X	2759044	02.11.2018	MA1	LMPC_HALB_12	22.12.2018	09:15:00
		X	2759144	13.12.2018	MA1	LMPC_HALB_34	05.01.2019	06:17:05

Result

The data records have been moved to the top of the ALV Grid collectively.

> ⚠ Caution
>
> Sorting is not to be confused with dispatching. Here, only the data records within the ALV Grid are shifted, similar to a manual drag and drop. This does not have any impact on the planning situation.

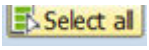
2.6.6.2 S_MALL, S_RMALL Select All Operations in ALV Grid and Remove Selection

Use

You can use the action code S_MALL to set all data records in the ALV Grid to selected.

You can use the action code S_RMALL to undo the selection.

Procedure

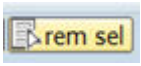
- Execute the action code 

(S_MALL).
- Result:

Status	D	F...	Work center	Order	OpAc	Cat	Cat	Phase	Material
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663507	0010	2		0	LMPC_FERT_34

Selection of All Operations

All data records in the ALV Grid are selected.

- Now execute the action code 

(S_RMALL).
- Result:

Status	D	F...	Work center	Order	OpAc	Cat	Cat	Phase	Material
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663507	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663507	0010	2		0	LMPC_FERT_34
	X		MA3	60007654	0010	1	10	0	LMPC_FERT_12
	X		MA3	60007654	0010	1	10	0	LMPC_FERT_12

Result

The selection has been undone.

2.6.6.3 S_MAGR, S_MAGRD Selecting Orders in the Graphic, Removing the Selection

Selecting Operations in the Graphic of the LMPC Planning Table

Use

You can use the action code S_MAGR to select the corresponding bars in the graphical part of the LMPC planning table for the data records selected in the ALV Grid. You use the action code S_MAGRD to remove this selection.

Procedure

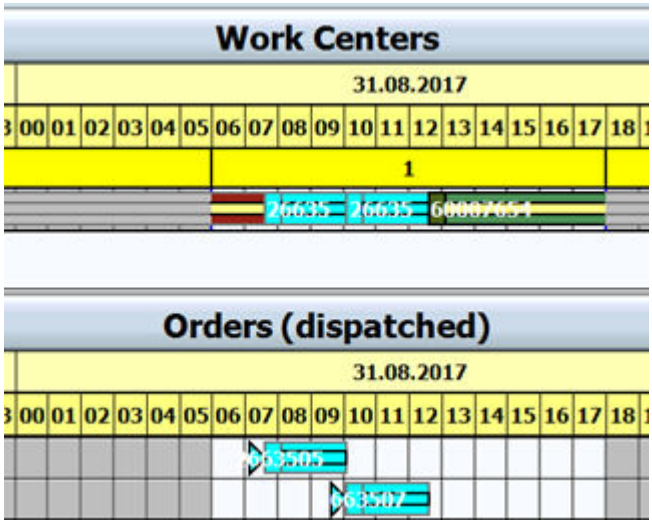
- Select data records in the ALV Grid.

Status	D	F	Work center	Order	OpAc	Cat	Cat	Phase	Material
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34
	X	X	MA3	2663507	0010	2		0	LMPC_FERT_34
	X		MA3	60007654	0010	1	10	0	LMPC_FERT_12
	X		MA3	60007665	0010	1	10	0	LMPC_FERT_34

Selection of Operations

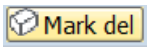
- Execute the action code 

(S_MAGR).
- Result:



Result

The bars for the order operations have been highlighted in light blue in the graphical part of the LMPC planning table.

- To remove the selection, execute the action code 

(S_MAGRD).

2.6.6.4 S_MALV Selecting Operations in ALV Grid

Finding Data Records in the ALV Grid

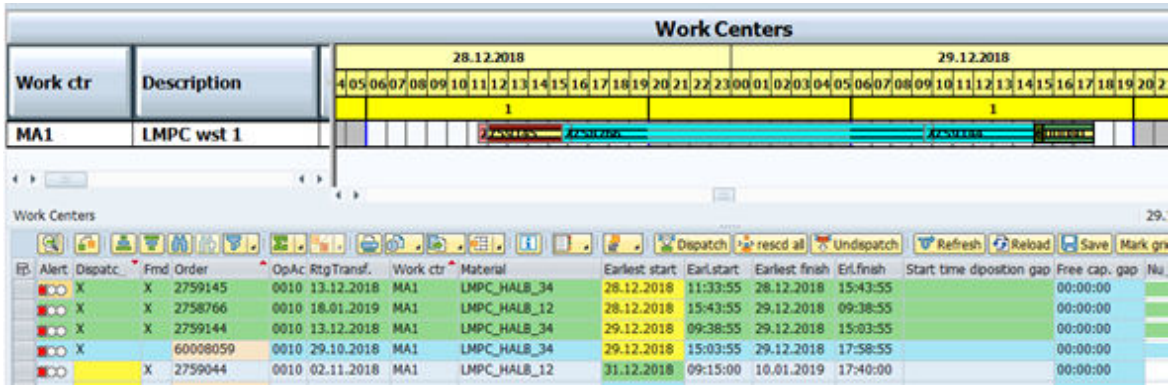
Use

You can use the action code S_MALV to find the data for the operations that you have selected in the graphical table in the ALV Grid.

Procedure

- Select one or more bars in the graphical table.

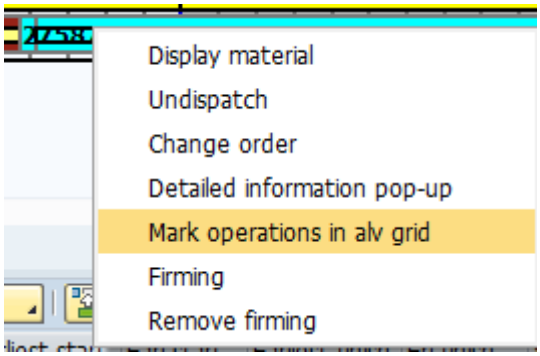
> → Tip
>
> You can use the SHIFT key and mouse click to select multiple bars.



Selected Bars in the Graphic

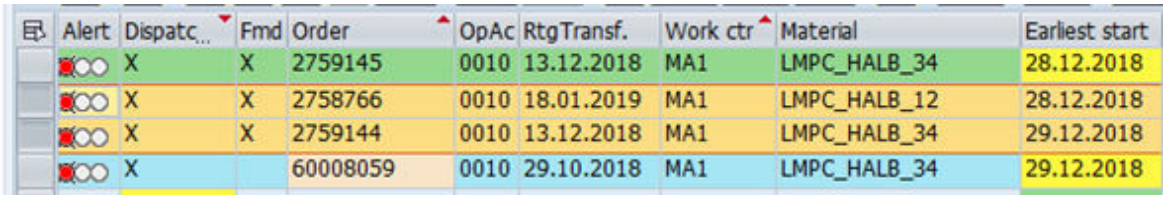
Two operations are selected.

- Right-click on the bars and in the context menu, choose: “Mark operations in alv grid”.



Context Menu of the Graphic Bars

- Result:



Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material	Earliest start
	X	X	2759145	0010	13.12.2018	MA1	LMPC_HALB_34	28.12.2018
	X	X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12	28.12.2018
	X	X	2759144	0010	13.12.2018	MA1	LMPC_HALB_34	29.12.2018
	X		60008059	0010	29.10.2018	MA1	LMPC_HALB_34	29.12.2018

Result

The corresponding operations have been selected in the ALV Grid.

2.6.6.5 S_MARKER Set and Remove Marking

Usage

You can use this action code to permanently set a marking for operations of orders.

The marking has no further effect. It is a tool for planning.

In conjunction with the coloring of data records, fields or the entire row of a selected data record can be colored.

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

In connection with the action code S_SETSEL, you can define rules according to which selections are automatically set or removed. S_SETSEL Select and Sort Operations Automatically [page 345]

The selection is set or removed for each data record that was selected. The selection is set in the simulation. When you save, the selection is written to the database.

Procedure

Select one or more data records in the ALV Grid.

G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Marker	C
●○○				X	60010116	0010		
○▲○		X		X	3634503	0010		
○▲○		X			3634502	0010		
○▲○		X			3626073	0010		
○▲○					3847703	0010		

Selection of Operations

Execute the action code 

(S_MARKER).

Result:

The selected data records were marked.

G. Alert	Lock	Fmd	HJPT fi...	Disp...	Ord. Nr.	Oper./Act.	Marker	C
●○○				X	60010116	0010		
○▲○		X		X	3634503	0010	X	
○▲○		X			3634502	0010	X	
○▲○		X			3626073	0010	X	
○▲○					3847703	0010		

Marked Data Sets

The marking is removed in the same way. The marking and the removal of the marking are carried out using the same action code. If a data record has not yet been marked, it is marked. Vice versa: If a data record is already marked, the marking is removed.

> **Note**
>
> For the marking to be displayed, the data provider CL_DP_OP_ADD must be active. Data Provider /LMPC/CL_DP_OP_ADD Additional Data for Operations [page 486]

2.6.6.6 S_SELCAP Selecting Detailed Capacity List in the Chart

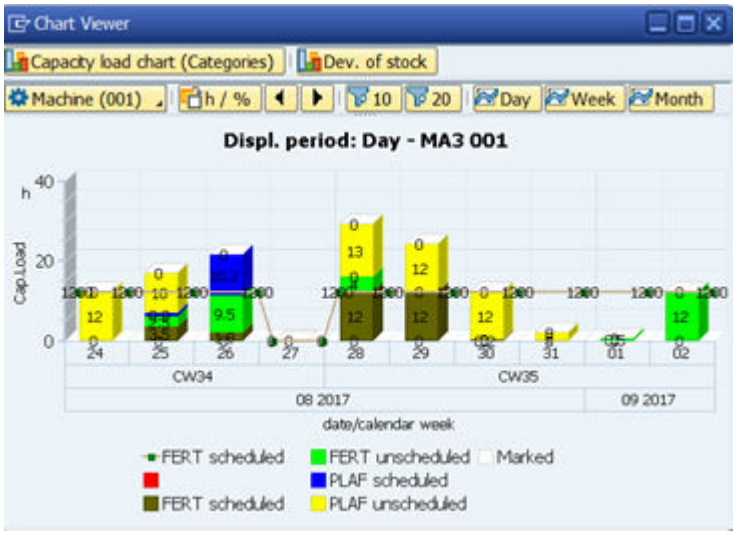
Selecting the Detailed Capacity List in the Chart

Use

You can use this function to make the capacity requirements of data records from the ALV Grid visible in the chart for Capacity Load (Categories) [page 81] and in the chart for Capacity Requirements (Categories) [page 83]. The action code has no effect for other charts.

Procedure

Capacity utilization chart before executing the function:



Capacity Utilization Chart at the Beginning

Select operations in the ALV Grid.

Status	D	F	Work center	Order	OpAc	Cat	Cat	Phase	Material	Subop.	Earliest start	Earl.start	Earl. finish /date	Erl.finish time
	X		MA3	60007653	0010	1	10	0	LMPC_FERT_34		25.08.2017	13:42:01	25.08.2017	17:12:01
	X	X	MA3	2663506	0010	2		0	LMPC_FERT_34		25.08.2017	17:12:01	26.08.2017	08:42:01
	X	X	MA3	2663503	0010	2		0	LMPC_FERT_34		26.08.2017	08:42:01	26.08.2017	11:12:01
	X	X	MA3	2663505	0010	2		0	LMPC_FERT_34		26.08.2017	11:12:01	26.08.2017	13:42:01
	X	X	MA3	2663507	0010	2		0	LMPC_FERT_34		26.08.2017	13:42:01	26.08.2017	16:12:01
	X		MA3	60007654	0010	1	10	0	LMPC_FERT_12		26.08.2017	16:12:01	29.08.2017	12:42:01

Selection of Operations

Execute the action code 

(S_SELCAP).

Result:



Result

The capacity requirements of the selected operations are displayed as white bars in the chart.

If the chart is not open, it is opened when the action code is executed. The prerequisite for this is that the chart is defined in Customizing for the HJPT overall profile. When you save the data, the planning table remembers the position and size of the windows. The window opens in the last opened size and position.

> ⓘ Note
>
> The chart has a function for selecting the orders that are behind the colored bars in the ALV Grid. To do this, a user clicks on the desired colored bar. However, this selection only works for colored bars. Selection does not work for white bars. Capacity Load (Categories) [page 81]

2.6.6.7 S_SELEQ Select Data Records in Equipment Check Diagram

Use

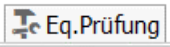
You use this action code to determine and select the corresponding data records in the chart of the equipment check for the selected data records from the ALV Grid of the HJPT planning table. The data records are assigned using the order number and the operation number. Equipment Check [page 94]

Procedure

Select one or more operations in the ALV Grid of the HJPT planning table.

Al..	Sperre	Fix	HJPT fix	Eigp	Auftr.Nr	Vrg	Auftr.Pool	Rfg.	Plannr.	Material	ArbPlatz	Bezeichn.	V
					60009125	0010			19880	LMPC_FERT_34	MA3	Maschine 3	
					60009125	0020			19880	LMPC_FERT_34	MA4	Maschine 4	

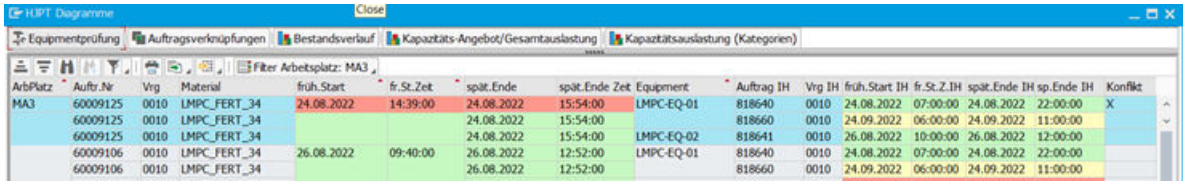
Selection of Data Records

Execute the action code for the equipment check 

(S_SELEQ).

If the chart is not open, the action code opens the chart.

The related equipment check records are selected in the chart.



ArbPlatz	Auftr.Nr	Vrg	Material	früh.Start	fr.St.Zeit	spät.Ende	spät.Ende Zeit	Equipment	Auftrag IH	Vrg IH	früh.Start IH	fr.St.Z.IH	spät.Ende IH	sp.Ende IH	Konflikt
MA3	60009125	0010	LMPC_FERT_34	24.08.2022	14:39:00	24.08.2022	15:54:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	X
	60009125	0010	LMPC_FERT_34			24.08.2022	15:54:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	
	60009125	0010	LMPC_FERT_34			24.08.2022	15:54:00	LMPC-EQ-02	818641	0010	26.08.2022	10:00:00	26.08.2022	12:00:00	
	60009106	0010	LMPC_FERT_34	26.08.2022	09:40:00	26.08.2022	12:52:00	LMPC-EQ-01	818640	0010	24.08.2022	07:00:00	24.08.2022	22:00:00	
	60009106	0010	LMPC_FERT_34			26.08.2022	12:52:00		818660	0010	24.09.2022	06:00:00	24.09.2022	11:00:00	

Selected Data Records in Chart

When you execute the action code, the work center filter in the chart of the equipment check is adjusted:

- If only operations from one work center were selected, the work center filter is set to this work center.
- If operations have been selected from multiple work centers, the work center filter in the equipment check chart is removed so that all data records can be displayed for the selection.

When you make a selection, the entire row is colored. The selection is retained until a new selection is executed or until the data is reloaded or saved. The selection is retained so that you can easily recognize the operation in the equipment check list while searching for a new date for the operation by moving the operation on the timeline.

2.6.6.8 S_SETSEL Select and Sort Operations Automatically

Use

This action code is used to select operations in the ALV Grid. You can also sort the data records.

There are two possible use cases:

- Automatic selection and sorting of operations according to certain rules.
- Automatic selection and sorting within a concatenation of action codes to make the selection for a subsequent action code.

The rules according to which the selection of operations is made are configured using the action code limitation function.

Processing logic: In the first step, the action code sorts the data records if sorting is configured. In the second step, all operations are selected. In a third step, the action code restriction is used to filter out the data records that are not to be selected.

The action code limitation can only be set for this action code in such a way that it filters out operations. It does not make sense to set a termination of processing for the action code S_SETSEL.

For details on action code limitation, see the description in the separate section on action code limitation.
Action Code Limits [page 104]

If no rules are set for this action code in the action code limitation, the action code selects all operations in the ALV Grid.

If only sorting is to be performed and no selection is to be made, the rules of the action code restriction must be set in such a way that all operations are filtered out.

> ⚠ Caution
>
> The operations are selected independently of filters that are set in the ALV Grid. The function always processes all data records that are loaded. If you have set ALV Grid filters, operations that are not visible to you may be selected because they are hidden by the ALV Grid filters.
>
> However, the selection is dependent on the LMPC work center filter. With the LMPC work center filter, only the data records for the selected work center are loaded in the ALV Grid, and these are the only data records that can be selected. S_WPFLT Work Center Filter [page 418]

Procedure

Initially, no operations are selected:

Alert	Lock	Fmd	HJPT firm.	Dispatched	Ord. Nr.	Ord. pool	Ord. Qnt.	Work ctr.	Disp. Seq.	OpAc	Material	Earliest start	Earl.start
					60009407		34	MA3		0010	LMPC_FERT_34	28.07.2023	06:44:00
					60009407		34	MA4		0020	LMPC_FERT_34	28.07.2023	10:04:00
		X			3370132		13	MA2		0010	162	01.08.2023	06:00:00
		X			3392745		20	MA3		0010	LMPC_FERT_12	01.08.2023	06:00:00
		X			3392740		20	MA3		0010	LMPC_FERT_12	01.08.2023	06:00:00
		X			3392576		80	MA3		0010	LMPC_HALB_34	01.08.2023	06:00:00
		X			3392575		14	MA3		0010	LMPC_HALB_34	01.08.2023	06:00:00

Initial Situation

Execute the action code Selection (S_SETSEL).

Depending on the rules that are set in the action code limitations, the data records are sorted and operations are selected in the ALV Grid.

Alert	Lock	Fmd	HJPT firm.	Dispatched	Ord. Nr.	Ord. pool	Ord. Qnt.	Work ctr.	Disp. Seq.	OpAc	Material	Earliest start	Earl.start
		X			3370126		10	MA4		0020	LMPC_FERT_SL_1	11.08.2023	08:00:00
					60009505		40	MA4		0020	LMPC_FERT_34	25.08.2023	07:43:01
		X			3392742		20	MA4		0020	LMPC_FERT_12	28.08.2023	10:00:00
		X			3370254		77	MA4		0020	LMPC_FERT_KE	29.08.2023	13:00:00
		X			3370255		11	MA4		0020	LMPC_FERT_KE	10.08.2023	07:00:00
		X			3370207		24	MA4		0030	LMPC_HALB_34	09.08.2023	14:00:00
					3392747		80	MA4		0020	LMPC_FERT_12	02.09.2023	10:00:00
		X			3392322		156	MA4		0030	LMPC_HALB_34	02.09.2023	16:00:00
		X			3392324		80	MA4		0030	LMPC_HALB_34	05.09.2023	16:40:00

Result

This example shows the selection and sorting of operations without a subsequent action code. You can use a concatenation of action codes to have the selected operations dispatched immediately, for example. The concatenation with S_SETSEL can also be used in LMPC HJPT background processing. The concatenation of S_SETSEL with other action codes is described in a separate section of the LMPC documentation. Concatenation with S_SETSEL [page 426]

> → Remember
>
> If the action code S_SETSEL is used to sort the data records in the ALV Grid, the action code S_REFR (refresh data) must not be configured as a subsequent action code. Refreshing the data resets the sorting of the data records to the sort order set in the layout. As a result, the action code S_SETSEL would have no effect.

2.6.6.9 S_UMTMSG Display Rescheduling Proposals

Display information about the required rescheduling

Use

You can use this function to check whether there are operations scheduled at times at which other orders have already been dispatched.

These operations can then no longer be dispatched at the scheduled times because the capacity intended for these operations is already in use at these times. The operations must therefore be scheduled for a different period.

You can execute this action code either automatically when the LMPC planning table is called (trigger PBO) or manually via a button or the context menu.

The action code compares all dispatched operations with all not dispatched operations.

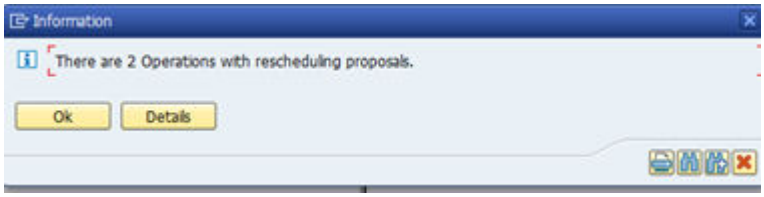
> ⚠ Restriction
>
> The capacity of the operations is not taken into account. Therefore, this action code is only suitable for use in which only one work center is open.

The latest start and end times of the operations are compared with each other in the logic.

Procedure

> → Tip
>
> Manual execution is described here. The action code can be configured such that it is executed automatically each time you launch the HJPT planning table. Then, when the planning table is started, the planner is made aware of the required rescheduling.

- Execute the action code Res. prop. (S_UMTMSG). No operations need to be selected. The logic checks all operations in the ALV Grid.
- If there are operations that are scheduled at times at which other operations have already been dispatched, a popup window appears.



Popup Window: Number of Operations

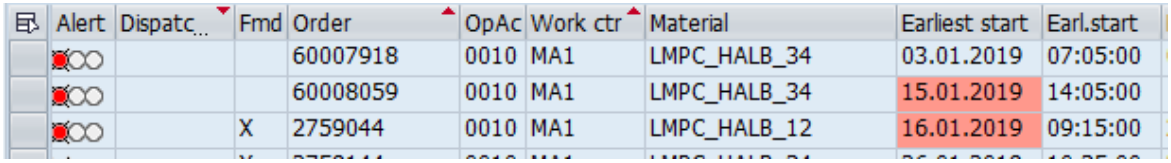
The system displays the number of operations that collide with operations already dispatched.

- You can use the button “Details” to display the operation details.



Details

- If a conflict occurs, the fields "Earliest Start Date" and "Latest Start Date" are colored red to indicate the conflict.



Coloring in the ALV Grid

> ⓘ Note
>
> This coloring takes place directly using the action code. If an additional ALV Grid color routine is set for one of the fields using the data provider, the coloring may be overridden. This is because coloring using the data providers runs after the action code has been colored.

Related Information

S_UMTMSG Configuration: Issue rescheduling proposal

2.6.7 Action Codes for Mass Processing

The action codes described in this section use the program PPIO_ENTRY, which calls mass processing of the order information system. The program PPIO_ENTRY is the basis for standard SAP transactions for mass processing, such as COHV, COHVPI, COOIS, and COOISPI.

The program is called from the HJPT planning table. A variant and order numbers are transferred to this program.

> ⓘ Note
>
> To call the program PPIO_ENTRY, a variant is required that is transferred via parameter. The LMPC delivery provides you with example variants that you can use as a template for your own variants.
>
> Checking and adjusting program variants is not a service provided by LMPC Consulting Support. An LMPC consultant can support you when you create variants.

> ⚠ Restriction
>
> The program PPIO_ENTRY is a standard SAP program and cannot be changed or adjusted.

Processing a large number of orders using this program may require a certain amount of runtime. In particular, it is time consuming to convert planned orders to production orders or process orders. Long runtimes are not an error, but the result of time-consuming processes running while orders are being processed in program PPIO_ENTRY.

Note that after mass processing is called, the data is usually reloaded using the chain of the action code S_RELOAD. This is necessary to load the changed data. This means that the function runs at least as long as it takes to newly access the planning table.

Related Information

Create Program Variants for the Action Codes of the Order Information System

2.6.7.1 S_ATP ATP Check in Mass Processing

Mass ATP Check

Use

You use this action code to perform an availability check for the components of orders.

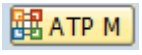
The action code S_6_ATP contains the same function, but is configured for use in the process industry.

Procedure

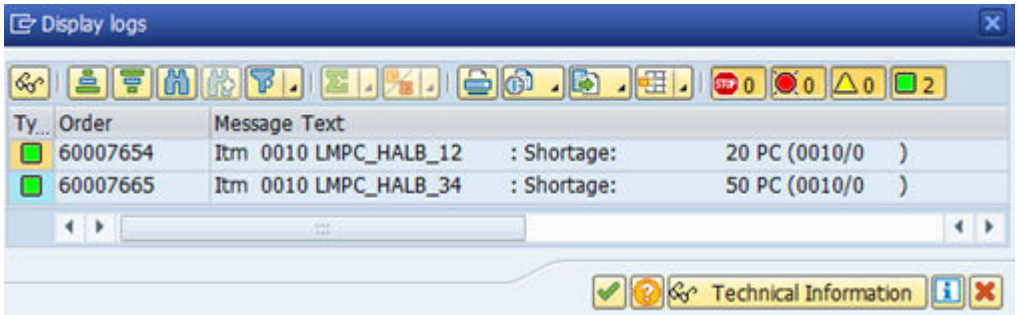
- Select the desired data records in the ALV Grid.

		X	X	MA3	2663507	0010	2		0	LMPC_FERT_34
		X		MA3	60007654	0010	1	10	0	LMPC_FERT_12
		X		MA3	60007665	0010	1	10	0	LMPC_FERT_34
		X		MA3	60007648	0010	1	10	0	LMPC_FERT_34
			X	MA3	2663503	0010	2		0	LMPC_FERT_34

Selection of Order Operations

- Execute the action code 

(S_ATP).
- If there are missing quantities in production orders or process orders, they are displayed as a log:



Log for Missing Quantities

> ⚠ Restriction
>
> This log is only displayed for production and process orders. No log can be issued for planned orders.

- After the availability check has been performed, the data is reloaded to load the results of the availability check to the fields of the ALV Grid.

The following fields display the results of the ATP check:

Overall commitment	Available quantity	S. status head	Availability confirm
08.09.2017	10		1
15.09.2017	78-	CRTD MSPT PRC SETC	
13.09.2017	4-	CRTD MSPT PRC SETC	
19.09.2017	60	CRTD PRC MACM SETC	

ATP Fields in ALV Grid

- Date of overall commitment, field GSBTR_SU
- Available quantity, field VFMNG_SU
- System status order header, field SSKOX_SU (production and process orders only)
- Confirmation of availability, field MDPBV_PA (planned orders only)

> → Tip
>
> - If the availability check for orders has already been performed, you can use action code S_C024 to access the overview of missing parts for an order. S_CO24 Missing Parts Info System [page 363]
> - After the ATP check, the result can also be read from the LMPC HJPT alerts. Group Alert [page 436]

2.6.7.2 S_ATPA Individual Availability Check

Availability check, capacity planning table

Use

You use this action code to execute the standard availability check of the capacity planning table. This is only possible for production orders or process orders. It does not work for planned orders. This check does not make use of mass processing. However, the documentation was inserted at this point due to the thematic link. The advantage of this check is that it can be executed in simulation mode. Therefore, the current planning situation does not have to be saved before the check can be executed.

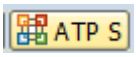
Procedure

- Initial situation:

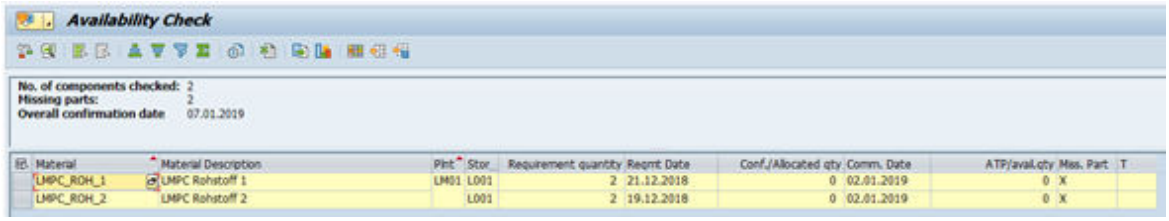
Alert	Disp...	Order	OpAc	Material	Work ctr	Ov.commitment	Available quantity	S. status head
	X	60008060	0010	LMPC_HALB_12	MA1	08.01.2019	364-	CRTD MSPT PRC MANC SETC

Situation at Start

An operation of a production order has been dispatched, planning has not yet been saved. According to the header status, the material availability has not been confirmed.

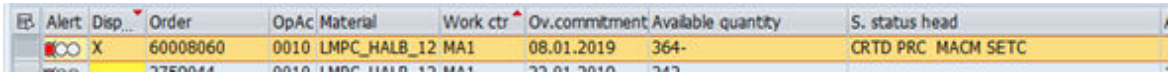
- Select the operation and execute the action code 

(S_ATPA).
- If there are missing quantities, the logic jumps to the display of the availability check.



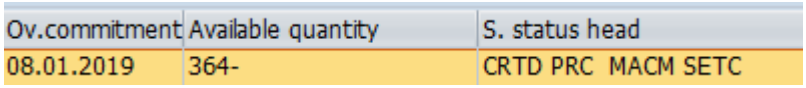
Display Missing Parts

- If there are no missing quantities, this step is skipped and only the header status of the order is updated. You can read the information in the corresponding fields in the ALV Grid.
- Result (no missing parts):



Result Without Missing Parts

The status MACM (material committed) has been set.
The following fields display the results of the ATP check:



ATP Fields in ALV Grid

  - Date of overall commitment, field GSBTR_SU
  - Available quantity, field VFMNG_SU
  - System status order header, field SSKOX_SU

> → Tip
>
> If the availability check for orders has already been performed, you can use action code S_CO24 to access the overview of missing parts for an order. S_CO24 Missing Parts Info System [page 363]

2.6.7.3 S_ATPPIO ATP Check and Order Conversion

Combination of ATP check and order conversion

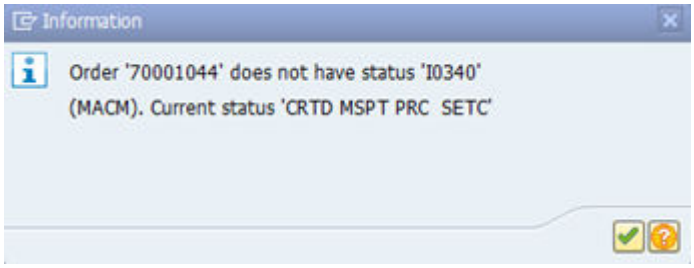
Use

When you execute the action code S_ATPPIO, an ATP check is performed for the production or process orders of the group of selected orders. If the ATP check for the orders finds the required status in the Customizing settings of the action code, the planned orders of the group of selected orders are converted into production orders or process orders.

Procedure

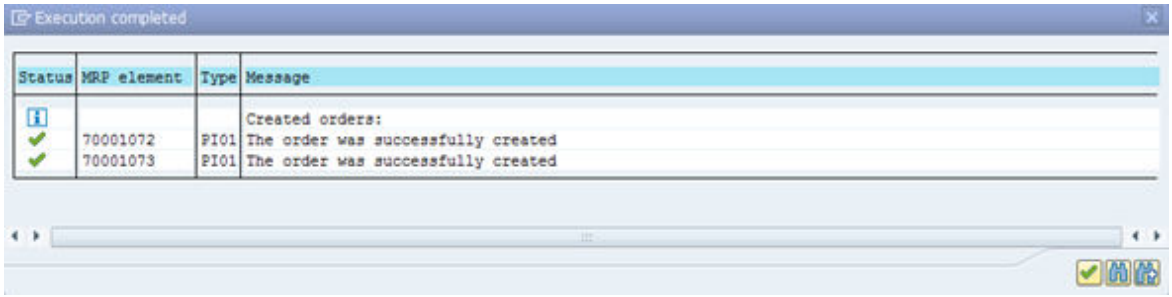
- Select one or more orders in the ALV Grid.

- Execute the action code ATP+conv (S_ATPPIO).
- First, the ATP check is performed for the production or process orders in the selection. If an order status is specified in Customizing, the system then checks the status.
- If the system cannot find the specified status, it issues an error message and aborts the function immediately. The check aborts when the first error is found.



Error Message

- If the system does not find any errors, it converts planned orders into production orders or process orders. Popup window with message about the conversion:



Successful Creation of Orders

> ⚠ Caution
>
> The system converts the orders immediately. There is no simulation.

- Afterwards, saving (S_SAVE) or reloading (S_RELOAD) the data is triggered to load the newly generated orders to the LMPC HJPT detailed scheduling planning board.
- If you execute the action code and there are still changes that have not yet been saved, the system displays a warning message.



Note That All Changes Are Saved

This message indicates that all changes that have not yet been saved are saved.

> ⚠ Restriction
>
> If the selection contains planned orders that have been changed, the function terminates with an error message. Planned orders that contain changes cannot be converted, but must first be saved.

Related Information

S_ATPPIO Configuration: ATP Check and Conversion

2.6.7.4 S_CONVPI Mass Conversion of Planned Orders to Process Orders

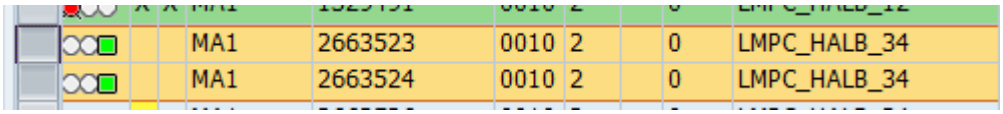
Mass Conversion of Planned Orders in Process Industry

Use

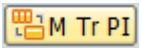
You can use this function to convert any number of planned orders into process orders at the same time.

Procedure

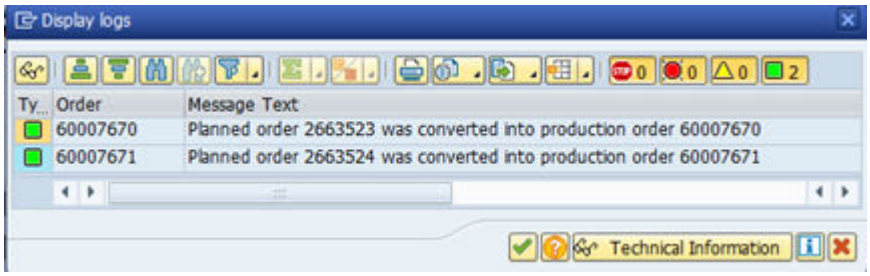
- Select the desired planned orders.



Selection of Operations

- Execute the action code 

(S_CONVPI).
- After the conversion, the system displays a log from which you can take the new numbers of the process orders.



Conversion Log

- After confirming the log, the data is reloaded automatically, to load the new process orders into the worklist.

> **Note**
>
> The message text uses the term “production order” instead of “process order”. The log is generated in the standard SAP system and only read in the LMPC HJPT planning table, therefore, it is not possible to influence the terms.

2.6.7.5 S_CONVPP and S_CONVPL Mass Conversion of Planned Orders to Production Orders

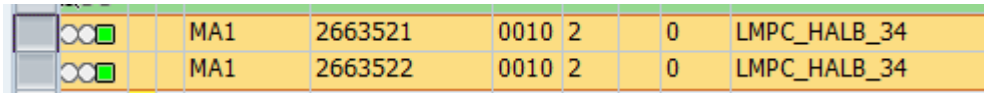
Mass Conversion of Planned Orders PP

Use

You can use the action codes PP List Tr (S_CONVPL) and Convert (S_CONVPP) to convert any number of planned orders into production orders simultaneously.

Procedure

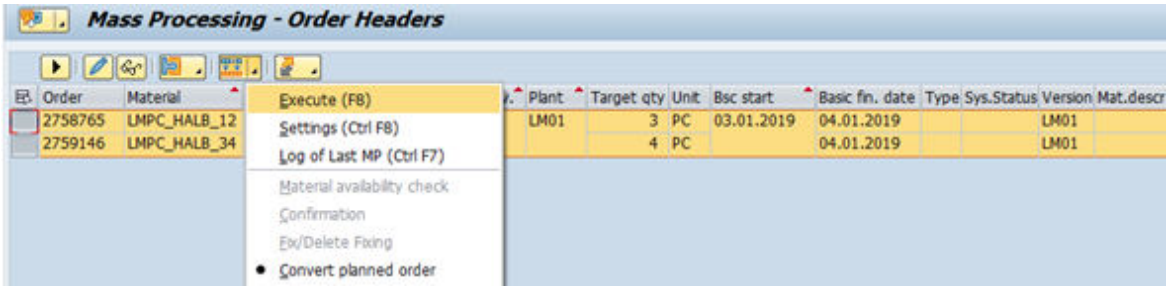
- Select the desired planned orders.



		MA1	2663521	0010	2	0	LMPC_HALB_34
		MA1	2663522	0010	2	0	LMPC_HALB_34

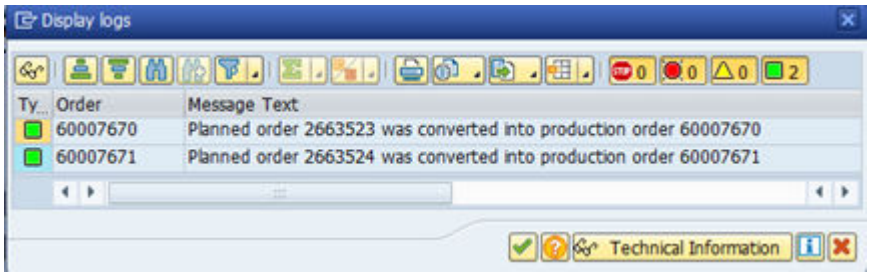
Selection of Operations

- Execute the action code PP List Tr (S_CONVPL).
- An overview screen with the selected orders appears.



Overview Mass Processing

- You can use the menu or the function key F8 to execute the conversion.
- If you want to execute the conversion immediately without displaying the list, execute the action code Convert (S_CONVPP). The orders are converted immediately.
- After the conversion, the system displays a log from which you can take the new numbers of the production orders.



Log

- After confirming the log, the data is reloaded automatically, to load the new production orders into the worklist.

2.6.7.6 S_COOIS Information System for Production Orders

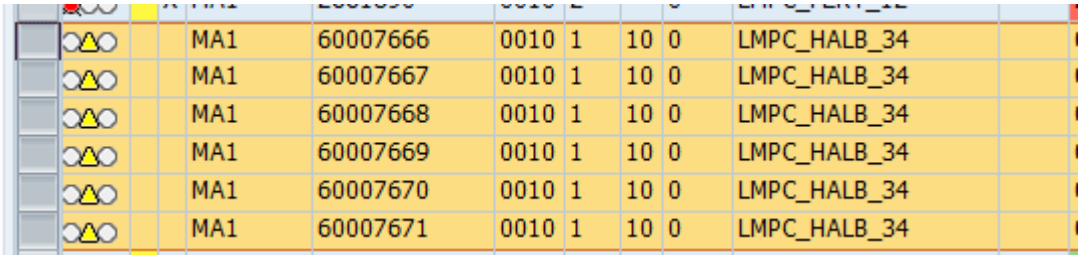
Call production order information system

Use

You can use this action code to display production orders in the production order information system.

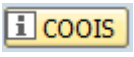
Procedure

- Select one or more production orders.



	MA1	60007666	0010	1	10	0	LMPC_HALB_34	
	MA1	60007667	0010	1	10	0	LMPC_HALB_34	
	MA1	60007668	0010	1	10	0	LMPC_HALB_34	
	MA1	60007669	0010	1	10	0	LMPC_HALB_34	
	MA1	60007670	0010	1	10	0	LMPC_HALB_34	
	MA1	60007671	0010	1	10	0	LMPC_HALB_34	

Selection of Operations

- Execute the action code 

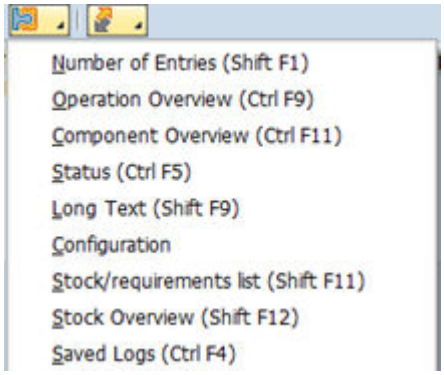
(S_COOIS).
- The system displays the screen for the production order information system.



Order	Material	Icon	Order Type	MRP ctrlr	Pr.Superv.	Plant	Target qty	Unit	Bsc start	Basic fin. date	Type	System Status	Version	Mat. descriptn
60007666	LMPC_HALB_34		PP01	LM1	LM1	LM01	170	PC	01.09.2017	27.09.2017		CRTD MSPT PRC SETC	LM01	LMPC Halb 34
60007667			PP01	LM1			2	PC		04.09.2017		CRTD MSPT PRC SETC	LM01	LMPC Halb 34
60007668			PP01	LM1			3	PC		04.09.2017		CRTD MSPT PRC SETC	LM01	LMPC Halb 34
60007669			PP01	LM1			4	PC		04.09.2017		CRTD MSPT PRC SETC	LM01	LMPC Halb 34
60007670			PP01	LM1			6	PC		04.09.2017		CRTD MSPT PRC SETC	LM01	LMPC Halb 34
60007671			PP01	LM1			7	PC		04.09.2017		CRTD MSPT PRC SETC	LM01	LMPC Halb 34

Order Information System

- You can call additional functions here.



Functions of the Order Information System

2.6.7.7 S_COOISP Information System for Process Orders

Process Order Information System

The action code S_COOISP calls the information system for process orders. The process flow is identical to that of action code S_COOIS, only for process orders.

Related Information

S_COOIS Information System for Production Orders [page 355]

2.6.7.8 S_MFREI Mass Release of Orders

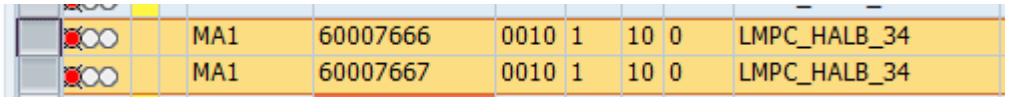
Releasing of Orders in Mass Processing

Use

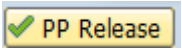
You can use this function to release production orders. The action code S_6_MFRE is a variant of the action code S_MFREI for use in the process industry.

Procedure

- Select one or more production orders.



Selection of Operations

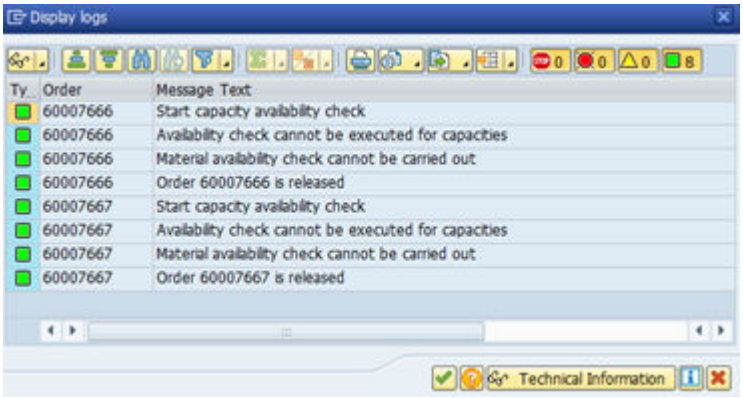
- Execute the action code 

(S_MFREI).
- Confirm the warning that all unsaved changes will be lost.



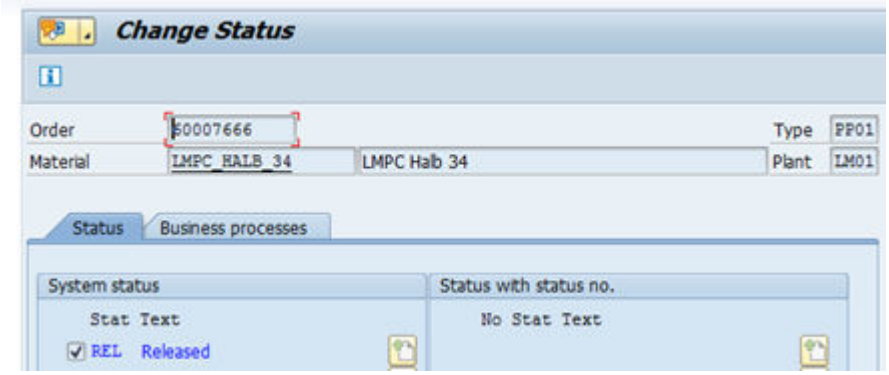
Warning

- The system displays a log of the steps performed.



Log

- The orders have been released. The system sets the status REL in the header of the respective order.



Status Information in the Order Header

2.6.7.9 S_V_FREI Release of Operation in Production Order

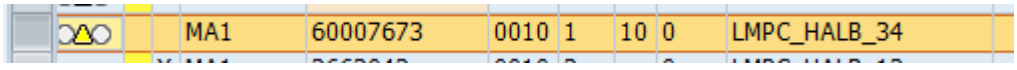
Release of Operation in Production Order - Mass Processing

Use

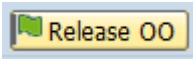
You can use this action code to release at operation level in the production order.

Procedure

- Select one or more operations.



Selection of Operations

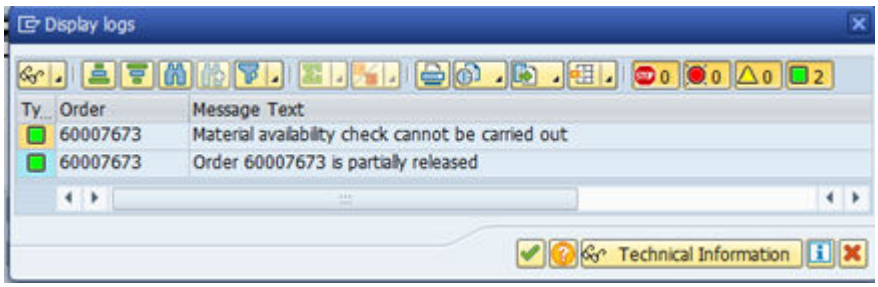
- Execute the action code 

(S_V_FREI).
- Confirm any warning message that may appear



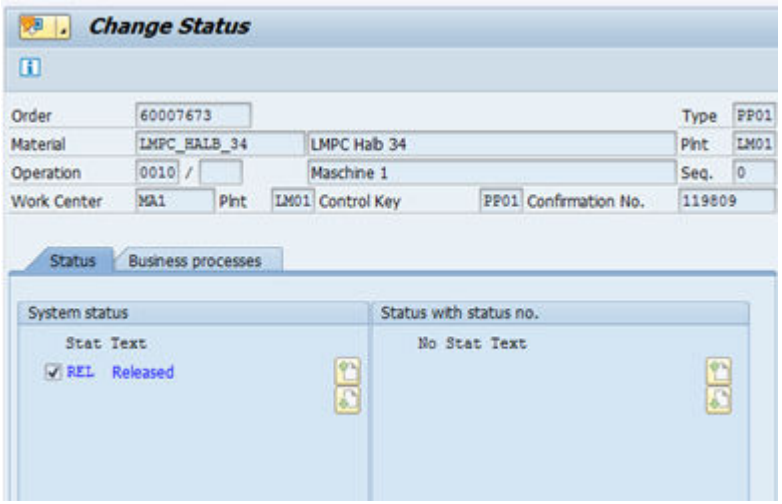
Warning

- The system displays a log that displays the steps performed.



Log

- The order has been released at operation level. The system status at operation level is “REL Released”.



Status in the Operation

2.6.8 Transaction Calls

In Customizing for the SAP LMPC HJPT detailed scheduling planning board, you can create action codes for calling standard SAP transactions.

The LMPC delivery includes a range of these transactions to reduce the customizing effort for customers.

> ⓘ Note
>
> These are preconfigured settings. It is possible that these settings may need to be adjusted in your system. For support with changing the configuration, contact LMPC Consulting.

2.6.8.1 S_C203 Display Master Recipe

Display Master Recipe from Process Industry.

Use

You can use the action code Recipe (S_C203) to call the transaction for displaying the master recipe.

Procedure

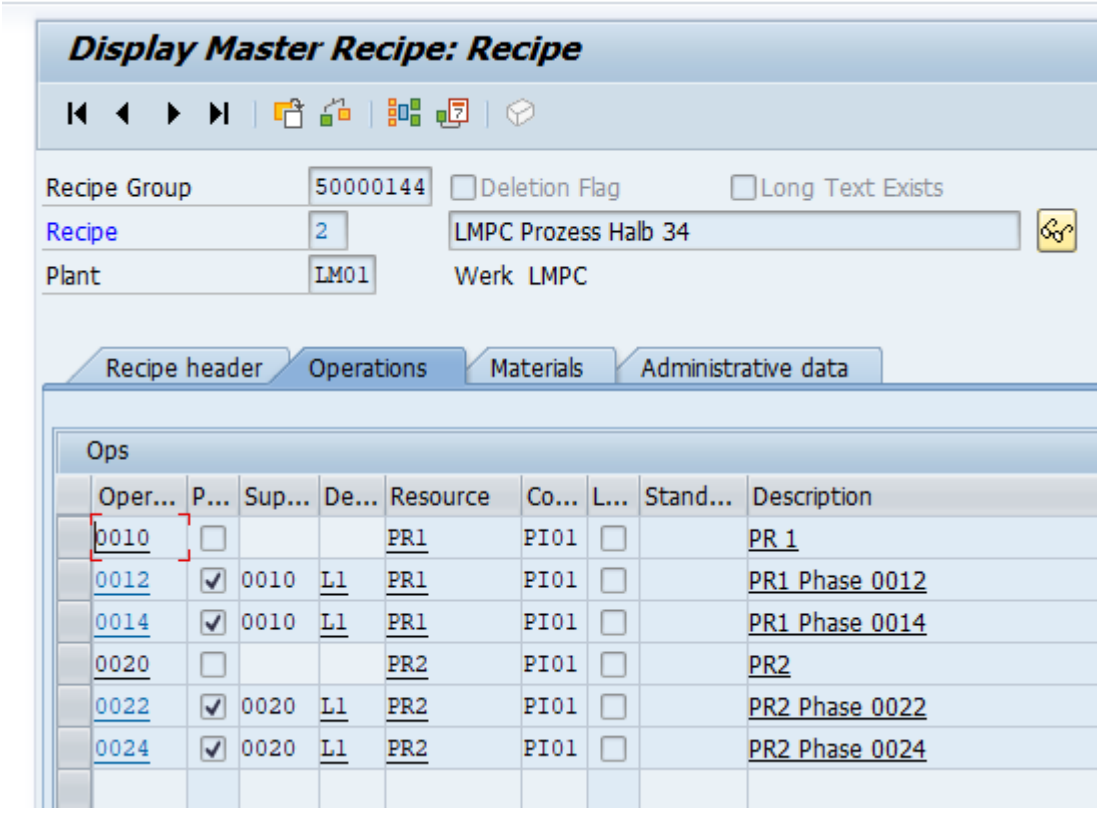
Select an operation in the LMPC ALV Grid.

Alert	Disp...	F...	Number	Order	OpAc	Material	Work ctr	Dep. req. order. rel	Requirement date
		X		3086561	0010	LMPC_PRHA_34	PR1	3086546 PA 1.000 ST	28.12.2019
		X		3086561	0020	LMPC_PRHA_34	PR2	3086546 PA 1.000 ST	28.12.2019

Selection

Execute the action code Recipe (S_C203).

Result:



Recipe Display

The master recipe for the material of this order is displayed.

2.6.8.2 S_C223_D Display Production Version

Production Version Display

Use

You can use the action code Prod.Vers. (S_C223_D) to call the transaction for displaying the production version.

Procedure

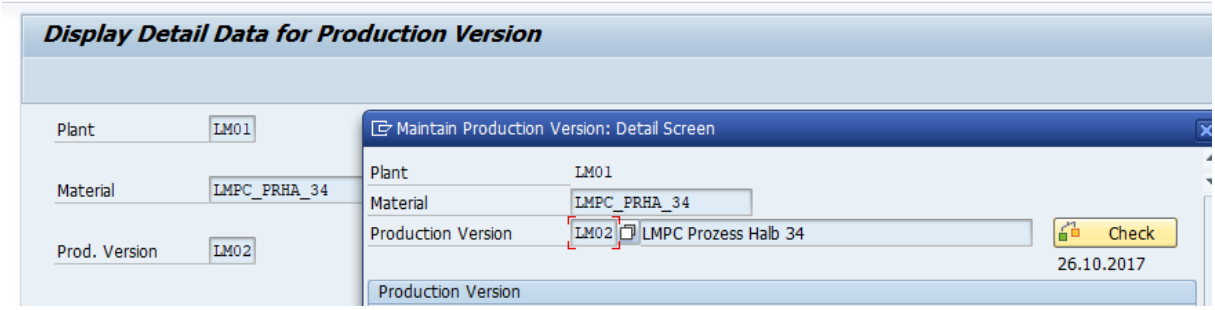
Select an operation in the LMPC ALV Grid.

Alert	Disp...	F...	Number	Order	OpAc	Material	Work ctr	Dep. req. order. rel	Requirement date
		X		3086561	0010	LMPC_PRHA_34	PR1	3086546 PA 1.000 ST	28.12.2019
		X		3086561	0020	LMPC_PRHA_34	PR2	3086546 PA 1.000 ST	28.12.2019

Selection

Execute the action code Prod.Vers. (S_C223_D).

Result:



Production Version Display

The production version for the selected order is displayed.

> → Remember
>
> The data provider /LMPC/CL_DP_PRODVER must be activated for the call to work. Data Provider /LMPC/CL_DP_PRODVER Data for Production Version [page 488]

2.6.8.3 S_CM01 Overview of Capacity Planning

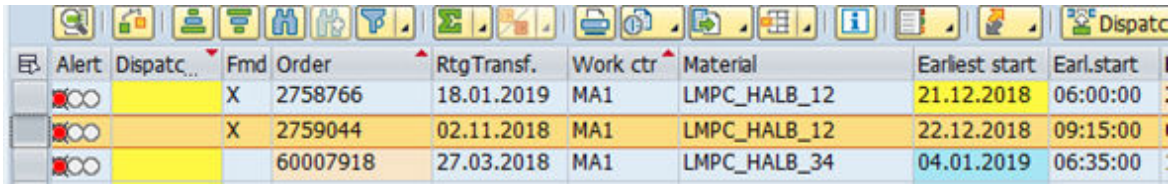
Call CM01

Use

You can use the action code CM01 (S_CM01), to call the capacity evaluation transaction CM01.

Procedure

- Select an operation in the HJPT ALV Grid.



Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start
		X	2758766	18.01.2019	MA1	LMPC_HALB_12	21.12.2018	06:00:00
		X	2759044	02.11.2018	MA1	LMPC_HALB_12	22.12.2018	09:15:00
			60007918	27.03.2018	MA1	LMPC_HALB_34	04.01.2019	06:35:00

Selection of Operation

- Execute the action code CM01 (S_CM01).
- Result:



Initial Screen CM01 Prefilled

- The initial screen of transaction CM01 is called, the selection fields have been prefilled.

2.6.8.4 S_CO11N Entering Time Tickets

Call transaction CO11N

Use

You can use the action code CO11N (S_CO11N) to enter a time ticket for the production order via transaction CO11N.

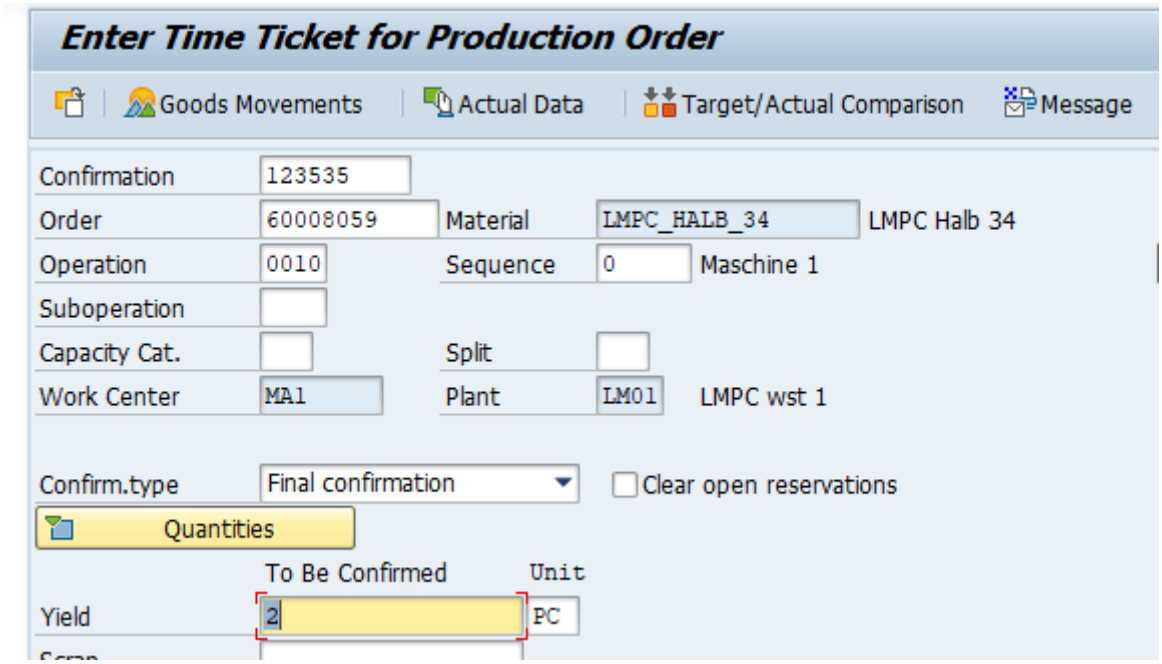
Procedure

- Select an operation of a production order.

Alert	Dispatc...	Fmd	Order	RtgTransf.	Work ctr	Material	Earliest start	Earl.start
		X	2759044	02.11.2018	MA1	LMPC_HALB_12	22.12.2018	09:15:00
			60007918	27.03.2018	MA1	LMPC_HALB_34	04.01.2019	06:35:00
		X	2759144	13.12.2018	MA1	LMPC_HALB_34	05.01.2019	06:17:05
		X	2759145	13.12.2018	MA1	LMPC_HALB_34	05.01.2019	11:42:05
			60008059	29.10.2018	MA1	LMPC_HALB_34	16.01.2019	14:05:00
		X	2758763	17.12.2018	MA1	LMPC_HALB_12	17.01.2019	15:45:00
			60008060	29.10.2018	MA1	LMPC_HALB_12	19.01.2019	12:45:00

Selection

- Execute the action code CO11N (S_CO11N).
- Result:



Transaction CO11N

You branch to the initial screen for transaction CO11N. Important fields have been prefilled.

2.6.8.5 S_CO15 Enter Production Order Confirmation

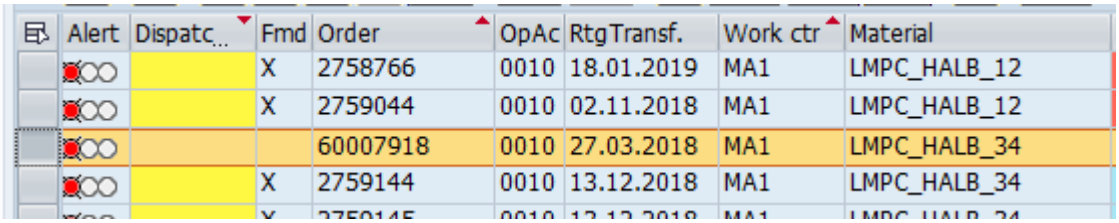
Call transaction CO15

Use

You use the action code CO15 (S_CO15) to enter confirmations for production orders.

Procedure

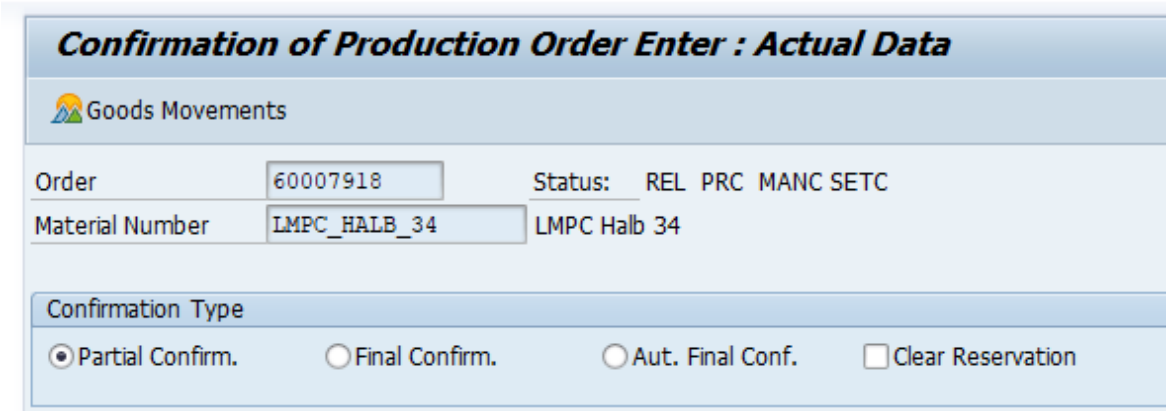
- Select an operation of a production order in the ALV Grid.



Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material
		X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12
		X	2759044	0010	02.11.2018	MA1	LMPC_HALB_12
			60007918	0010	27.03.2018	MA1	LMPC_HALB_34
		X	2759144	0010	13.12.2018	MA1	LMPC_HALB_34

Selection

- Execute the action code CO15 (S_CO15).
- You can now enter the confirmation for the production order.



CO15 Entering a Confirmation

2.6.8.6 S_CO24 Missing Parts Info System

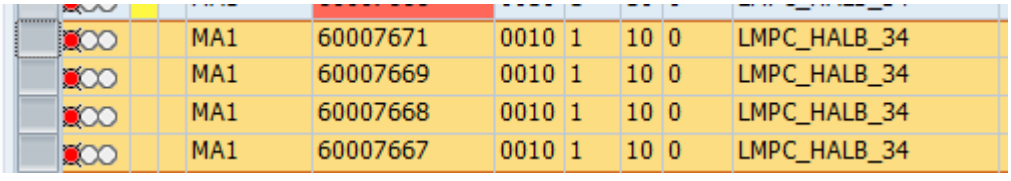
Call transaction CO24

Use

You can use the action code CO24 (S_CO24) to call the missing parts info system for production orders and process orders.

Procedure

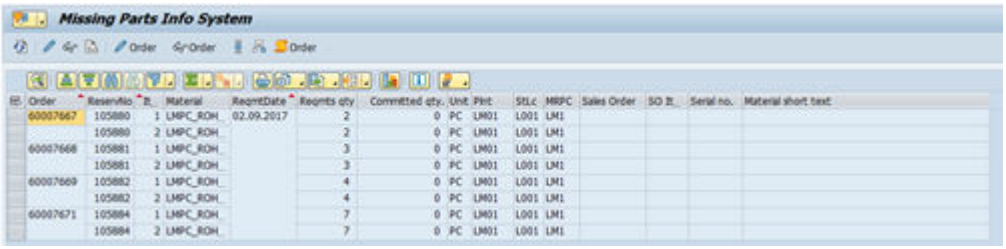
- Select one or more order operations in the ALV Grid.



	MA1	60007671	0010	1	10	0	LMPC_HALB_34
	MA1	60007669	0010	1	10	0	LMPC_HALB_34
	MA1	60007668	0010	1	10	0	LMPC_HALB_34
	MA1	60007667	0010	1	10	0	LMPC_HALB_34

Selection of Operations

- Execute the action code CO24 (S_CO24).
- The result of the missing parts check is displayed.



Result

2.6.8.7 S_CO40 Conversion of Planned Order to Production Order

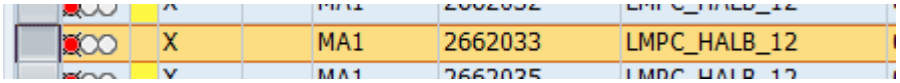
Call transaction CO40

Use

You can call transaction CO40 using the action code CO40 (S_CO40) to convert a planned order selected in the ALV Grid list into a production order directly in the planning table. This opens production order creation.

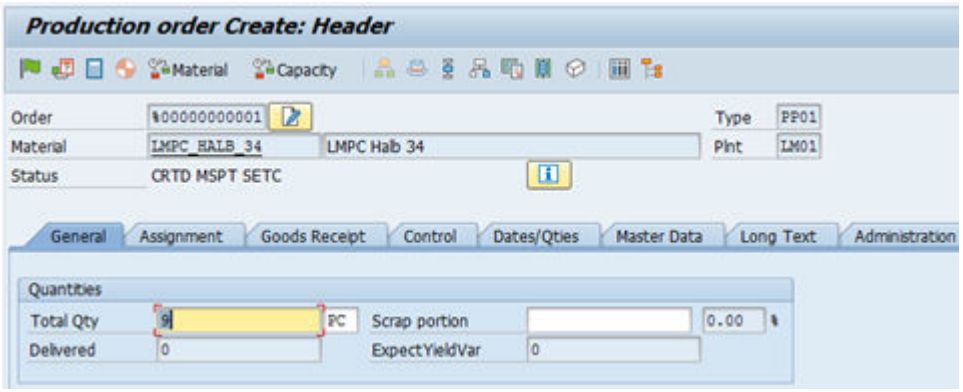
Procedure

- Select a planned order in the ALV Grid list.



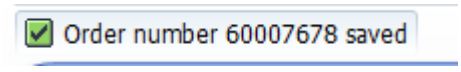
Operation Selection

- Execute the action code CO40 (S_CO40).
- The screen of transaction CO40 for creating a production order appears.



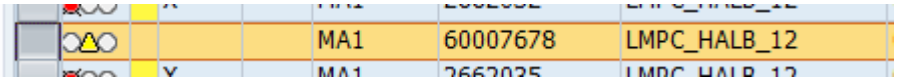
Create production order

- Save the production order.
- You return to the capacity planning table automatically. The status bar shows the number of the newly generated order.



Message Status Bar

- Save the planning in the LMPC HJPT planning table.
- The changes are saved to the database and the display refreshed. The new production order is displayed.



Result

> → Tip
>
> This action code is provided for the individual conversion of planned orders. The mass conversion of planned orders is performed with the action code Convert (S_CONVPP).

2.6.8.8 S_COR5 Releasing Individual Process Orders

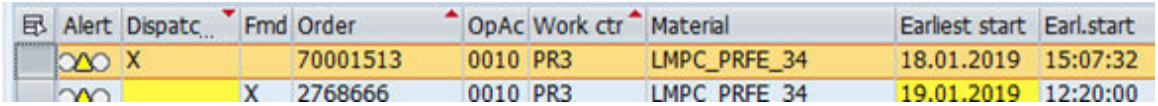
Call transaction COR5

Use

You can use the action code COR5 (S_COR5) to release individual process orders.

Procedure

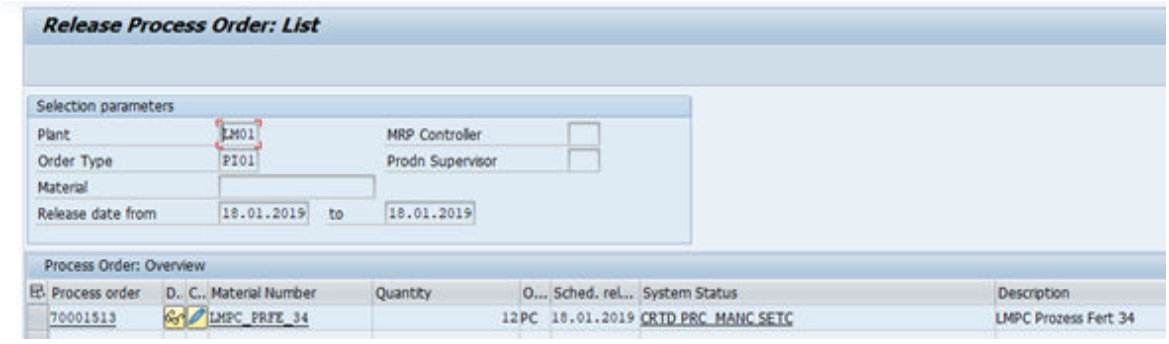
- Select an operation of a process order in the ALV Grid.



Alert	Dispatc...	Fmd	Order	OpAc	Work ctr	Material	Earliest start	Earl.start
	X		70001513	0010	PR3	LMPC_PRFE_34	18.01.2019	15:07:32
		X	2768666	0010	PR3	LMPC_PRFE_34	19.01.2019	12:20:00

Selection

- Execute the action code COR5 (S_COR5).
- Result:
  The system displays the screen for releasing process orders of transaction COR5. The selected process order is entered. The release can be executed.



Transaction COR5

Related Information

S_COR5 Configuration: Release Process Orders Individually

2.6.8.9 S_COR7 Creating Process Orders

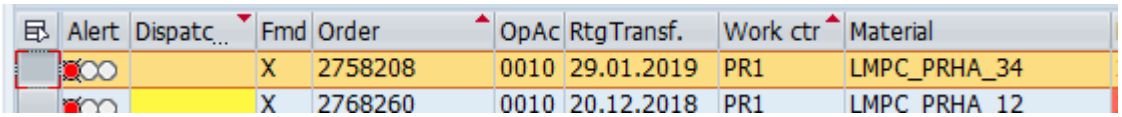
Call transaction COR7

Use

You can use the action code COR7 (S_COR7) to convert a planned order into a process order.

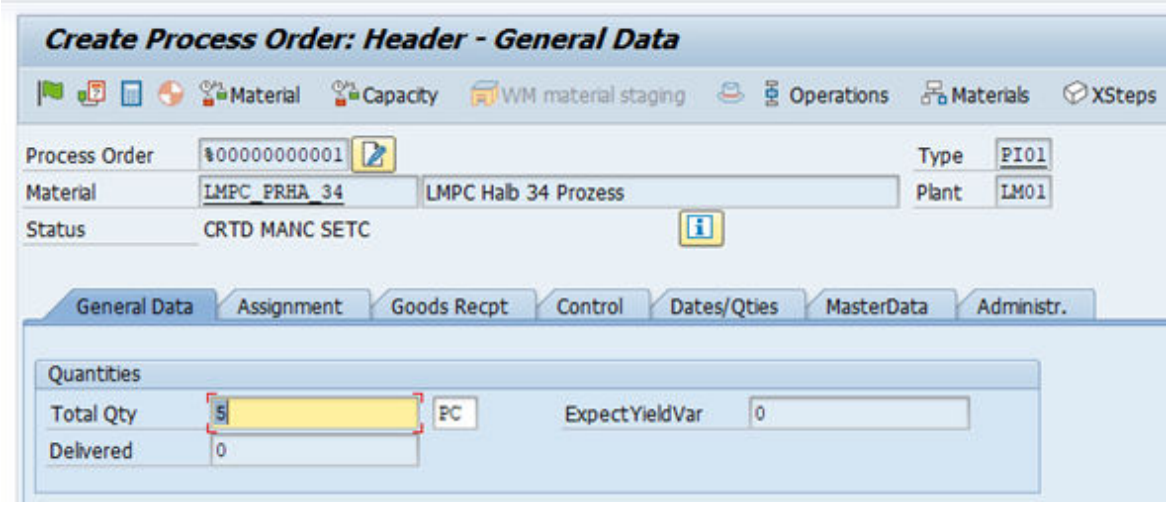
Procedure

- Select an operation in the ALV Grid.



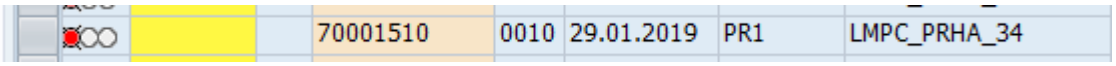
Select Order Operation

- Execute the action code COR7.
- This takes you to the screen for creating a process order. You can still change the data.



Screen for creating a Process Order

- Save to create a new process order.
- After saving, you return to the HJPT planning table. A new process order is displayed.



New Process Order

> → Remember
>
> During the conversion, the system saves automatically. The system saves the planning result so far and writes it to the database.

2.6.8.10 S_CR03 and S_CRC3 Display Work Center or Resource

Call CR03 or CRC3

Use

You can use these action codes to call the transactions for displaying the work center or the resource of an order operation.

Procedure

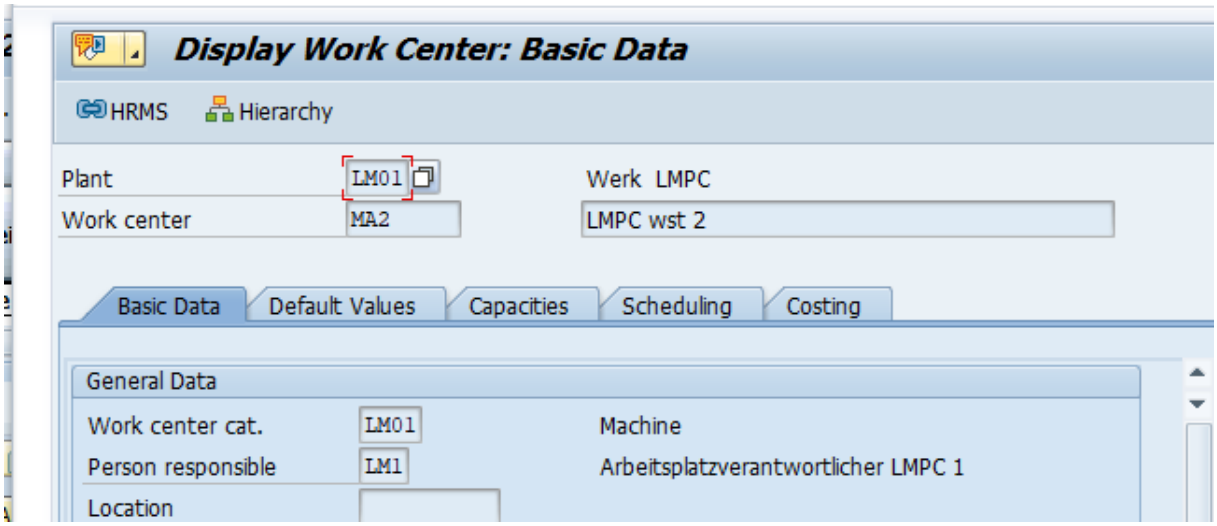
Select an order operation in the ALV Grid.

	Alert	Disp...	F...	Number	Order	OpAc	Material	Work ctr	D
			X		3078502	0010	LMPC_FERT_12	MA3	V
			X		3082866	0010	LMPC_HALB_34	MA2	3
			X		3078627	0010	LMPC_FERT_12	MA3	V

Selection of an Order

Execute the action codes Work ct. (S_CR03).

You access transaction CR03 to display the work center.



Display Work Center

The procedure for the action code Resource (S_CRC3) for displaying the resource is identical.

2.6.8.11 S_CS03 Display BOM

BOM Display

Use

You can use the action code BOM (S_CS03) to call the transaction for displaying the BOM.

Procedure

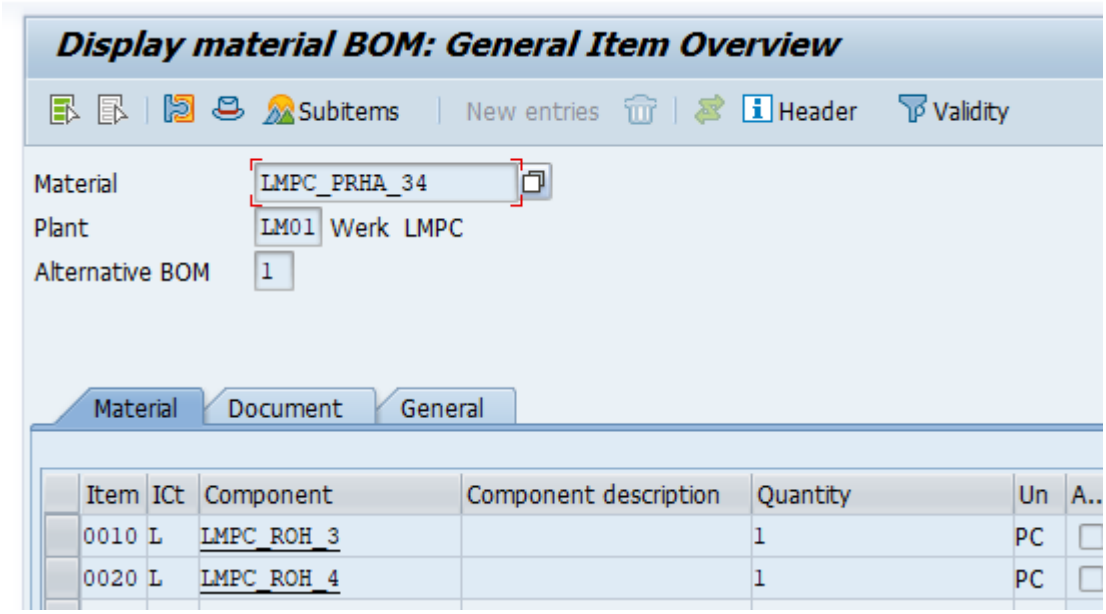
Select an operation in the LMPC ALV Grid.

	Alert	Disp..	F...	Number	Order	OpAc	Material	Work ctr	Dep. req. order. rel	Requirement date
			X		3086561	0010	LMPC_PRHA_34	PR1	3086546 PA 1.000 ST	28.12.2019
			X		3086561	0020	LMPC_PRHA_34	PR2	3086546 PA 1.000 ST	28.12.2019

Selection

Execute the action code BOM (S_CS03).

Result:



BOM Display

The BOM for the material of the selected order is displayed.

2.6.8.12 S_IW31 Creating Maintenance Orders

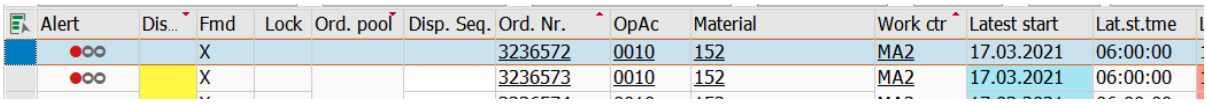
Call Transaction IW31

Use

You can use this action code to branch to the transaction IW31 to create maintenance orders. You can use maintenance orders to reserve capacity in work centers so that no orders can be dispatched at certain times.

Procedure

Select an order operation in the ALV Grid.



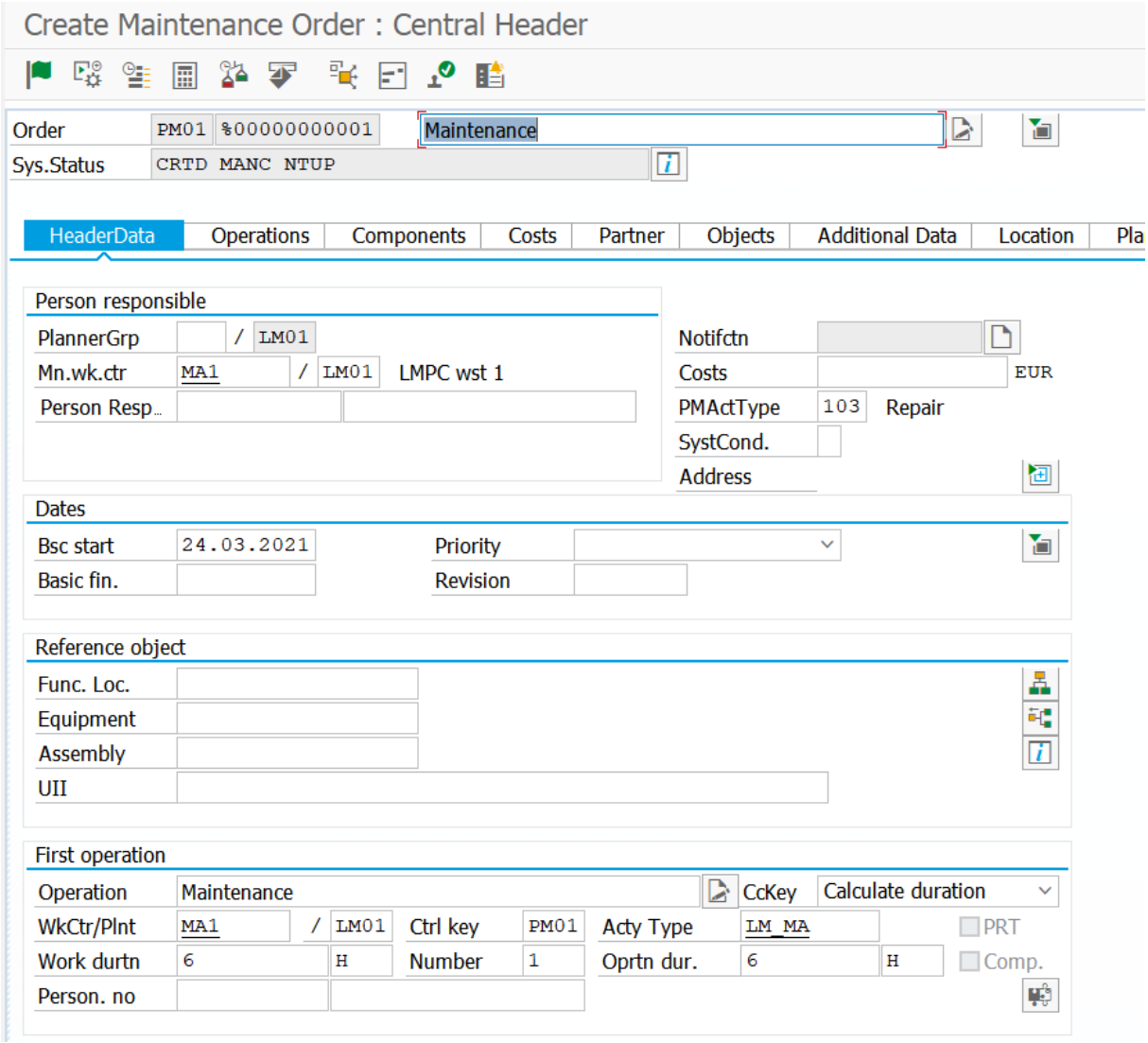
Select Order Operation

The plant is transferred to the transaction as an input parameter via the selection.

Execute the action code 

(S_IW31).

This takes you to the entry screen for creating a maintenance order.



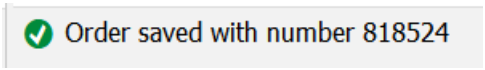
Creation of Maintenance Order

Fill in the required input fields.

> → Remember
>
> Remember to maintain a workload for the maintenance order. Capacity requirements are only generated if a workload is maintained, which can be processed in the LMPC HJPT planning table.

When you have made all the entries, save your entries. Return to the planning table.

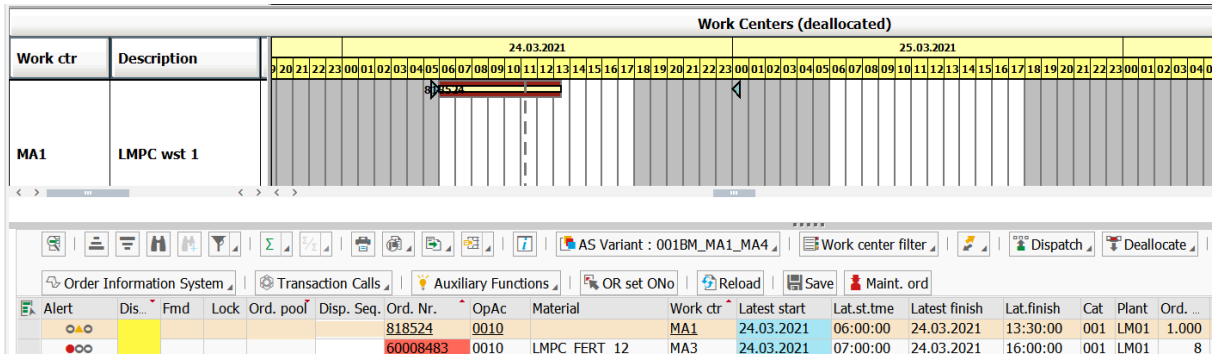
A message appears in the status line, which displays the order number of the newly created order.



Display of the order number in the status line

After creating a maintenance order, you must load the maintenance order data into the planning table. To do this, you reload the data or save it.

Result:



Result

The operation of the newly created planned order is displayed in the graphic and in the ALV Grid.

You can now dispatch the operation to the desired time.

Operations of maintenance orders can be dispatched, deallocated, and rescheduled as desired using the LMPC standard planning functions, such as S_EPSEL, S_APSEL, and S_MANP. Only if the operation of a maintenance order is dispatched does it occupy the capacity so that no other operations can be dispatched in this period.

> → Tip
>
> Instead of a maintenance order, you can also create an LMPC cleaning order to reserve the capacity. For more information, see the documentation on LMPC cleaning orders.
>
> Creation of cleaning orders during material group transitions [page 140]

See also the chapter on maintenance orders in the HJPT planning table. LMPC and Maintenance Orders [page 561]

Related Information

S_IW31 Configuration: Create Maintenance Order

2.6.8.13 S_IW38EQ Change Maintenance Orders for Equipment

Use

You can use this function to display and change maintenance orders for equipment of orders.

This function reads the numbers of the equipment from the production resources/tools for the order operations. It then calls transaction IW38 and transfers the numbers of the equipment. This pre-populates the selection screen of the transaction.

The equipment is read for the selected operations. If all equipment for an order is to be read, all operations of an order must be included in the selection.

For planned orders, the equipment is determined using the routing. The routing is read on the date on which the routing of the respective planned order was exploded. For production orders, the equipment is read from the data of the operations.

> ⚠ Restriction
>
> The data is read from the database. Changes to equipment of production orders in the simulation cannot be taken into account.
>
> Production resources/tools are not supported in process orders, and therefore neither is equipment.

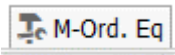
This function belongs to a planning scenario in which maintenance orders for production resources/tools are created. For this, the production resources/tools must be defined as equipment. These maintenance orders are used to determine when a piece of equipment is unavailable. The chart displaying the equipment check is also part of this topic. Equipment Check [page 94]

Procedure

Select one or more operations in the ALV Grid.

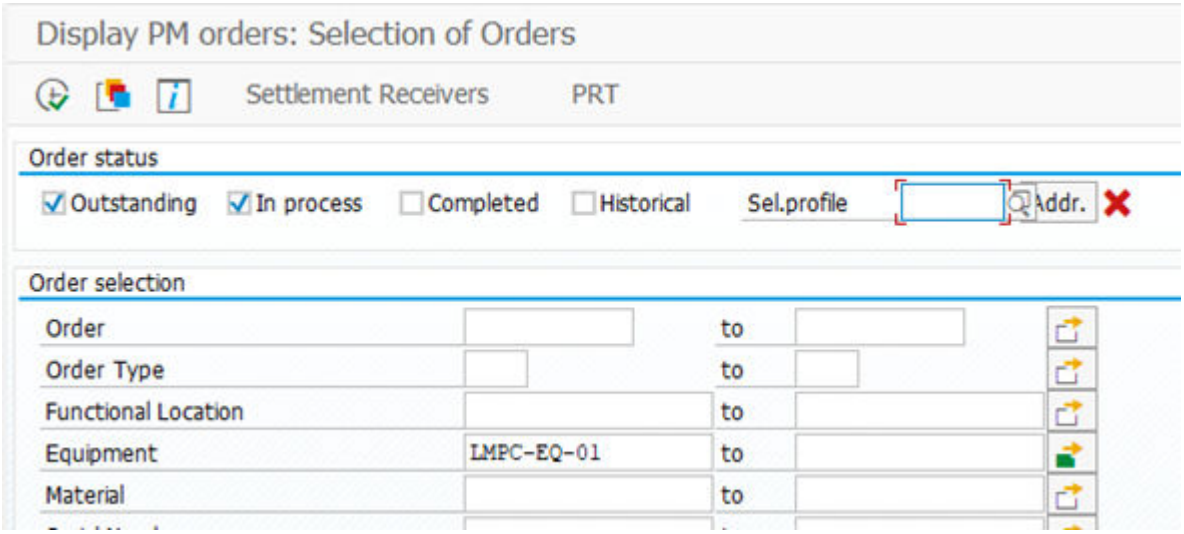
Alert	Lock	Fmd	HJPT firm.	Dispatched	Ord. Nr.	OpAc	Disp. Seq.	Material	Work ctr	Description	Op. Qty	UoM
○▲○		X		X	3349378	0010		LMPC_FERT_34	MA3	LMPC wst 3	20	PC
●○○				X	60009105	0010		LMPC_FERT_34	MA3	LMPC wst 3	25	PC
○▲○		X			3349378	0020		LMPC_FERT_34	MA4	LMPC wst 4	20	PC

Selection of Operations

Execute the action code 

(S_IW38EQ).

The system displays the selection screen of transaction IW38. The equipment numbers determined from the selected operations are already pre-populated.



Selection Screen for Transaction IW38

You can use an optional parameter to transfer a transaction variant. You can use this variant to prefill further settings on the selection screen.

Instead of transaction IW38, you can also use an optional parameter to call transaction IW39 to display the maintenance orders only.

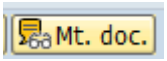
S_IW38EQ Configuration: Change Maintenance Orders for Equipment

> ⓘ Note
>
> At the end of processing, the function marks all operations as changed that contain the pieces of equipment that were used for the call. This marking is required for the equipment check chart. To save runtime, the equipment check chart only updates the data for changed operations.

2.6.8.14 S_MB51 Material Document List

Call transaction MB51

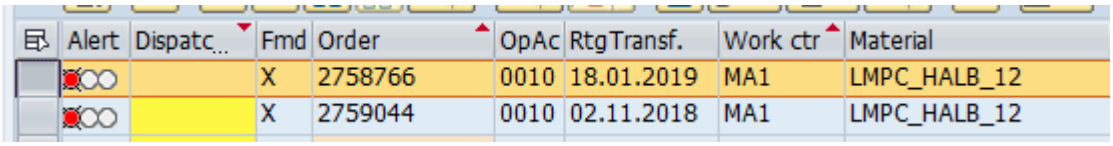
Use

You can use the action code 

(S_MB51) to display the material document list for a material.

Procedure

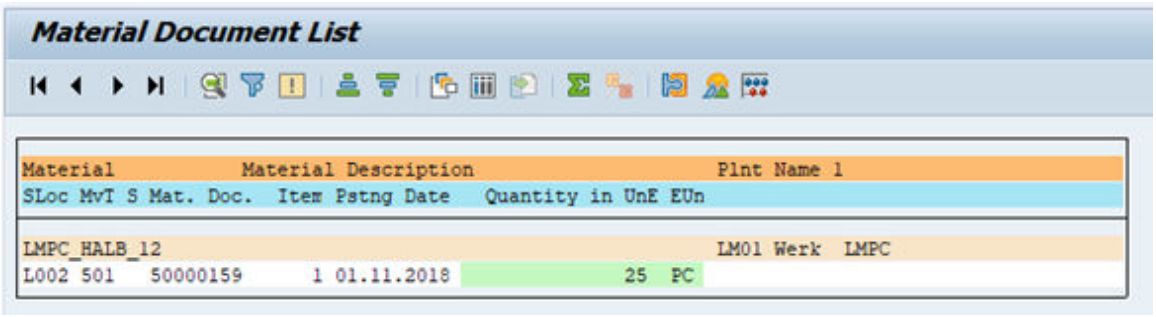
- Select an order operation in the ALV Grid.



Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material
		X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12
		X	2759044	0010	02.11.2018	MA1	LMPC_HALB_12

Select Order Operation

- Execute the action code Mt. doc. (S_MB51).
- Result:



Transaction MB51

The system displays the material document list for the order material.

2.6.8.15 S_MD04 Stock/Requirements List

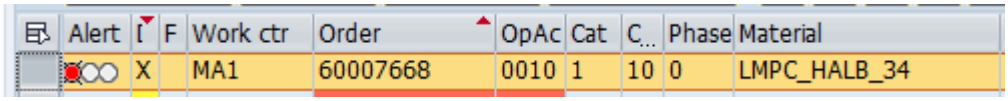
Call transaction MD04

Use

You can use the action code MD04 (S_MD04) to display the stock/requirements list for a material.

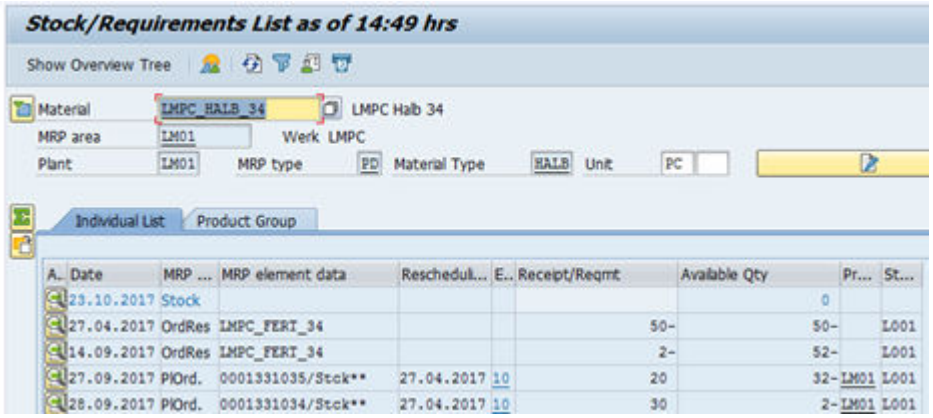
Procedure

- Select a row in the ALV Grid.



Select Operation

- Execute the action code MD04 (S_MD04).
- Result:



Display MD04

The system displays the stock/requirements list for the material of the selected ALV Grid row.

→ Tip

The action code is configured in such a way that it displays the stock/requirements list for the header material of the selected order. By making adjustments in the settings, the action code can also be configured in such a way that it displays the stock/requirements list for a component material. Action Codes for Transaction Calls

2.6.8.16 S_MD4C Order Report

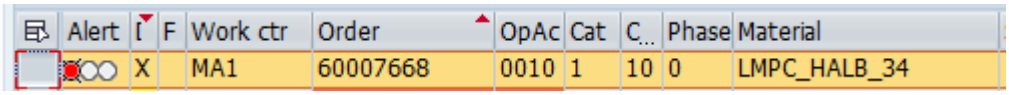
Call transaction MD4C

Use

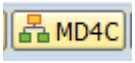
Display of the multilevel order report for a planned order, production order, or process order.

Procedure

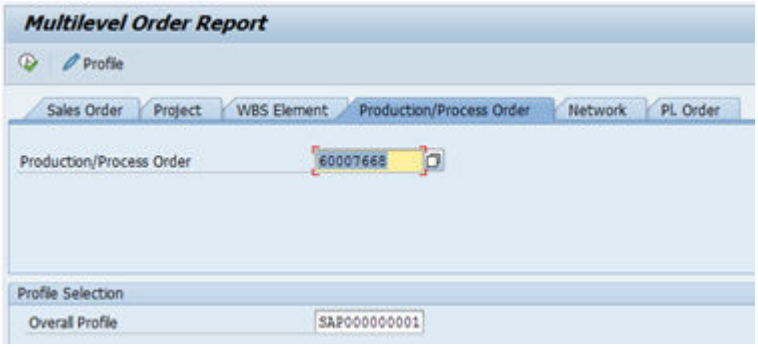
- Select an order operation in the ALV Grid.



Select Operation

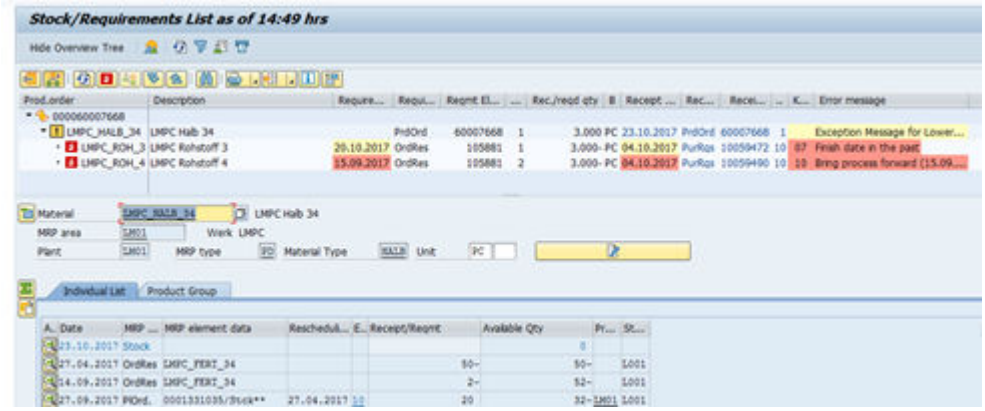
- Execute the action code 

(S_MD4C).
- The initial screen is prefilled and only needs to be confirmed.



Order Report Initial Screen

- Result:



Order Report

The report for the selected order is displayed.

2.6.8.17 S_MIGO Goods Movements

Call Transaction MIGO

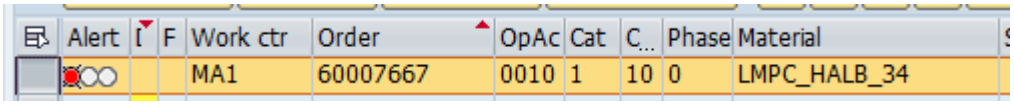
Use

You use a specific configuration to call transaction MIGO.

> ⓘ Note
>
> The action code is delivered with an example configuration. This is to be modified by the consultant in the customer system to suit individual requirements. You can use this example configuration to post the goods issue for an order.

Procedure

- Select an ALV Grid row.

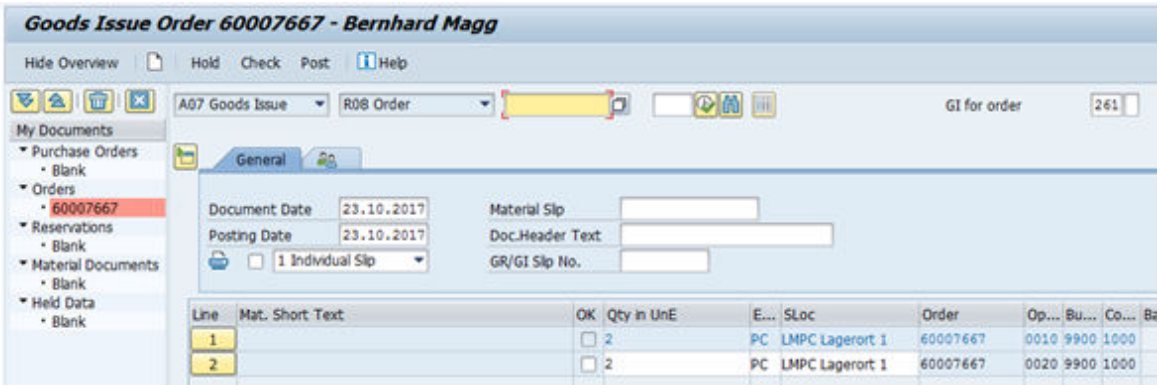


Select Operation

- Execute the action code 

(S_MIGO).

- Result:



Transaction MIGO

The prefilled transaction MIGO for the goods issue is displayed. The goods issue can be posted.

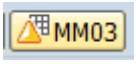
Related Information

S_MIGO Configuration: Goods Movements

2.6.8.18 S_MM03 Displaying Material Master Data

Call Transaction MM03

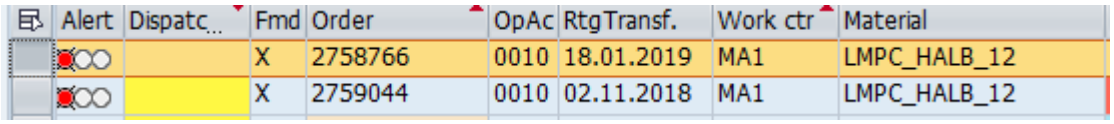
Use

You can use the action code 

(S_MM03) to display the master data for the material.

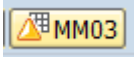
Procedure

- Select an order operation in the ALV Grid.



Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material
		X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12
		X	2759044	0010	02.11.2018	MA1	LMPC_HALB_12

Select Order Operation

- Call the action code 

(S_MM03).
- The system displays the master data for the order material.



Material Master Data

→ Tip

The LMPC standard settings delivered define that the material data is also displayed if you double-click or click the hotspot on the material number in the ALV Grid.

Double-clicking or clicking the hotspot calls the action code S_DBCLCK, which has been configured such that transaction MM03 is called for the material number.

S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

2.6.8.19 S_MMBE Displaying Material Stock

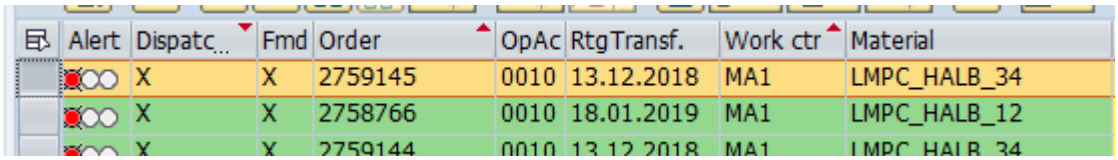
Call transaction MMBE

Use

You can use the action code Stock (S_MMBE) to display the stock for the order material.

Procedure

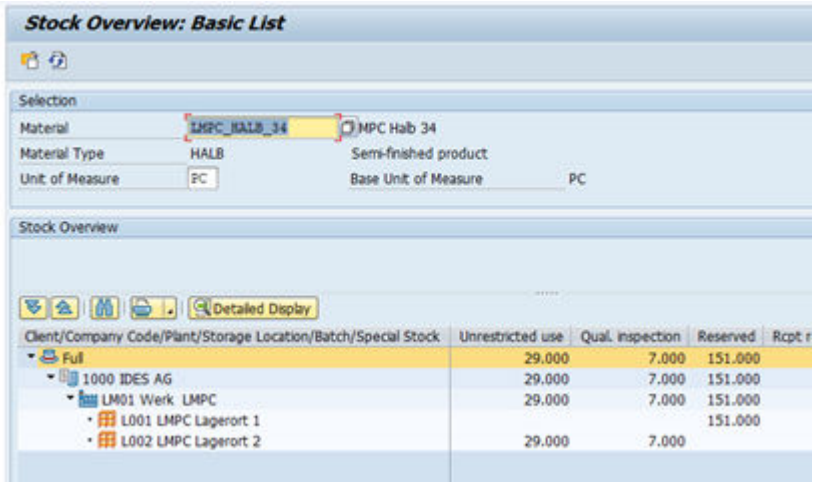
- Select an operation in the ALV Grid.



Alert	Dispatc...	Fmd	Order	OpAc	RtgTransf.	Work ctr	Material
	X	X	2759145	0010	13.12.2018	MA1	LMPC_HALB_34
	X	X	2758766	0010	18.01.2019	MA1	LMPC_HALB_12
	X	X	2759144	0010	13.12.2018	MA1	LMPC_HALB_34

Selection

- Execute the action code Stock (S_MMBE).
- Result



Stock Overview

The system displays the stock overview for the order material.

2.6.8.20 S_MS04 Long-Term Planning: Stock/Requirements List

Call Transaction MS04

Usage

This action code is used in connection with long-term planning.

LMPC and Long-Term Planning (PP-MP-LTP) [page 571]

LMPC_T09 [page 48]

With the Action Code MS04 (S_MS04), the requirements/stock list of long-term planning for a material can be displayed.

Procedure

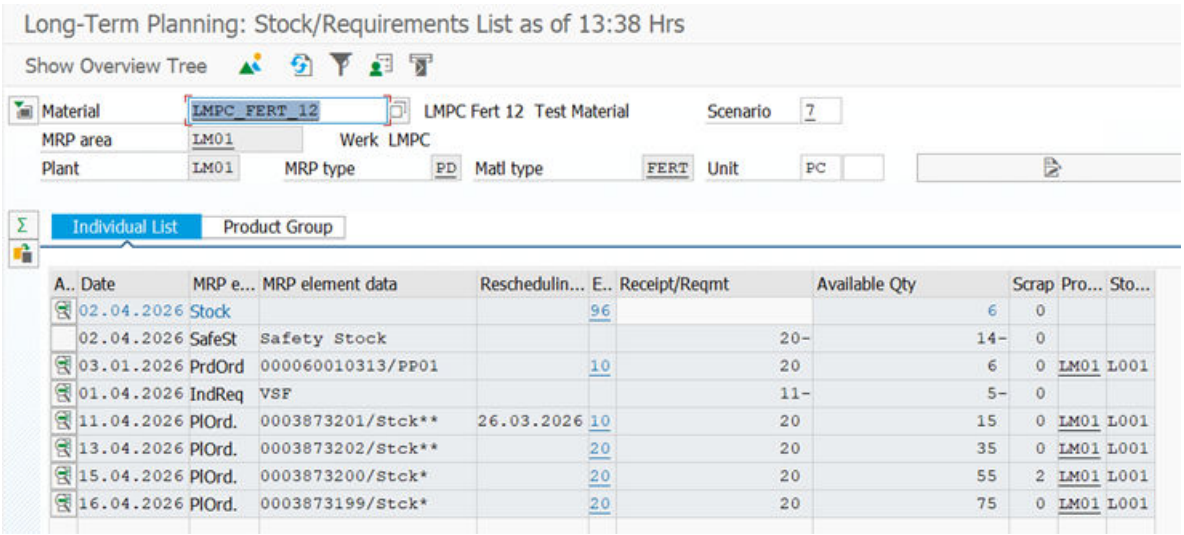
Select a row in the ALV Grid.

G. Alert	Lock	Fmd	Disp...	Order po...	Ord. Nr.	OpAc	SOp	Ord. Q...	UoM	Work center	Plant
		X	X		3873201	0010		20	PC	MA3	LM01
		X	X		3873201	0010		20	PC	MA3	LM01

Selection

Execute the Action Code MS04 (S_MS04).

Result:



A..	Date	MRP e...	MRP element data	Reschedulin...	E..	Receipt/Reqmt	Available Qty	Scrap	Pro...	Sto...
	02.04.2026	Stock			96		6	0		
	02.04.2026	SafeSt	Safety Stock			20-	14-	0		
	03.01.2026	PrdOrd	000060010313/PP01		10	20	6	0	LM01	L001
	01.04.2026	IndReq	VSF			11-	5-	0		
	11.04.2026	PlOrd.	0003873201/Stck**	26.03.2026	10	20	15	0	LM01	L001
	13.04.2026	PlOrd.	0003873202/Stck**		20	20	35	0	LM01	L001
	15.04.2026	PlOrd.	0003873200/Stck*		20	20	55	2	LM01	L001
	16.04.2026	PlOrd.	0003873199/Stck*		20	20	75	0	LM01	L001

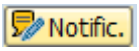
Display MS04

The requirements/stock list of long-term planning for the material of the selected ALV Grid row will be displayed.

2.6.8.21 S_QM01 Create Quality Notification for Material Error

Call transaction QM01

Use

You can use the action code 

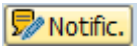
(S_QM01) to call transaction QM01 for creating a quality notification from the LMPC planning table with a batch input table. The settings in Customizing have been selected such that a quality notification with the notification type "F3: Material error" is created.

Procedure

- Select an order operation in the ALV Grid.

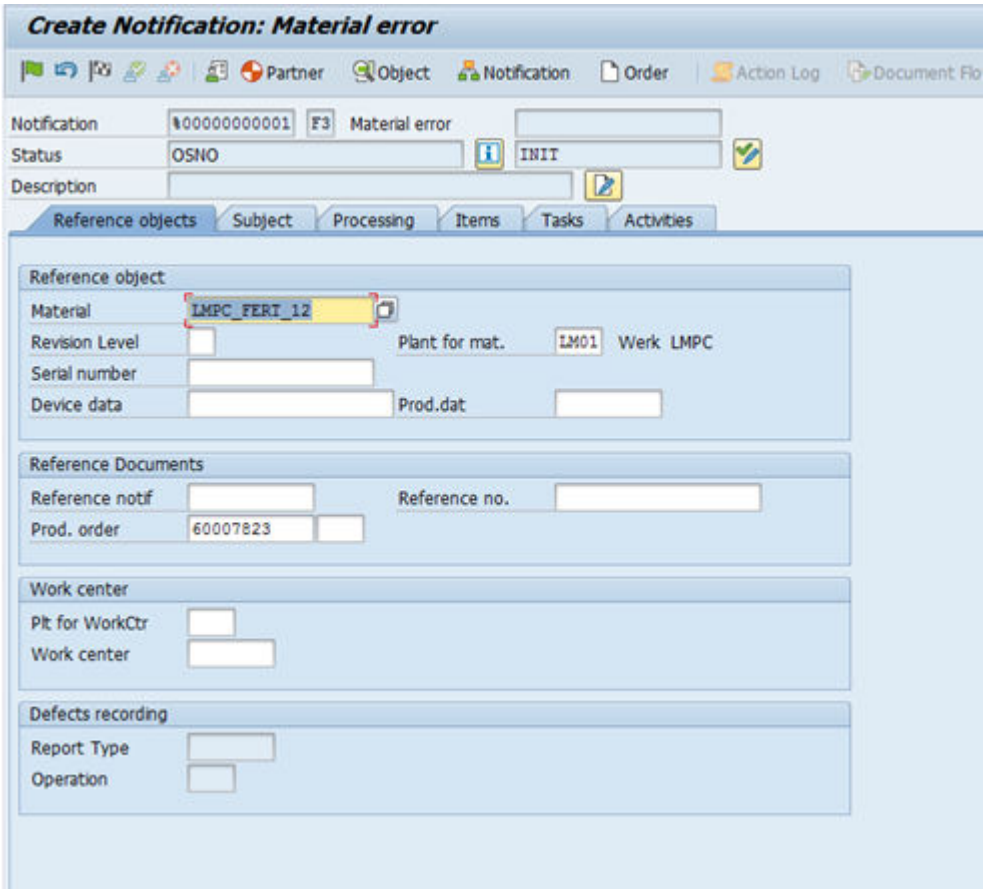
Alert	Conflict	I	F	Work ctr	Order	Operation Quantity	OpAc	Cat	C..	Phase	SOp	Material	Earliest start
				MA3	60007823	7,001	0010	1	10	0		LMPC_FERT_12	05.01.2018
			X	MA3	2703322	2,520	0010	2		0		LMPC_FERT_12	05.01.2018

Select Order Operation

- Execute the action code 

(S_QM01).

The system creates a quality notification of notification type F3. The selection screen is skipped and you are taken to notification creation on the first subscreen.

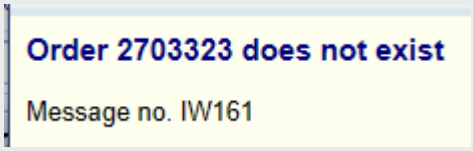


Quality Notification

The following parameters are also transferred from the LMPC planning table:

- Material number
- Plant
- Production order

> ⚠ Restriction
>
> It is only useful to create quality notifications for production orders. If you try to create a quality notification with reference to a planned order, the system displays an error message.



Error Message

Related Information

S_QM01 Configuration: Create Quality Notification

2.6.8.22 S_VA03 Display Sales Order

Jump to transaction for displaying the sales order

Usage

You can use the action code S.Order (S_VA03) to display the associated sales order for an order.

The prerequisite for this is that you have activated the data provider for the SD data and that, for the order, a sales order is displayed in the ALV Grid field for the sales order. Data Provider /LMPC/CL_DP_SD_DATA Sales Order [page 493]

Procedure

Select an operation in the ALV Grid for which an order number is displayed in the Sales Order field.

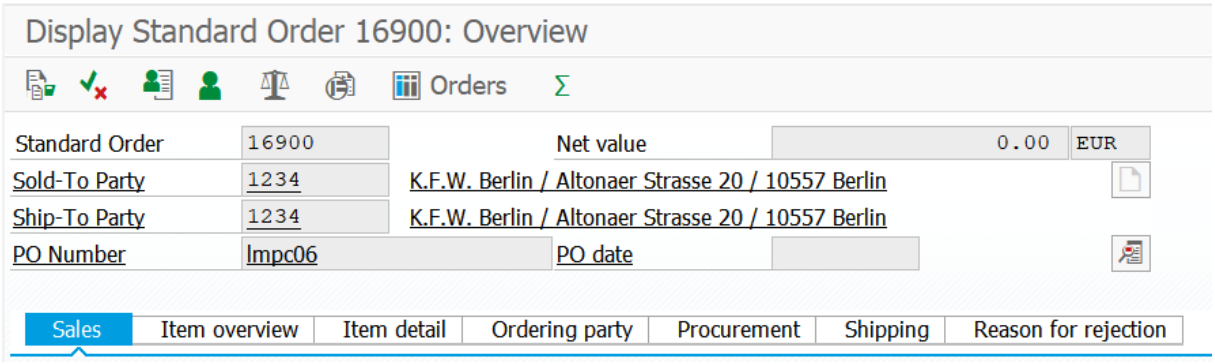
Alert	Lock	Di...	Disp...	Fmd	Ord. Nr.	OpAc	Sales Order	SOp	Material
		X		X	3262796	0010	16900		LMPC_FERT_KE
		X		X	3295764	0010	16899		LMPC_HALB_12
				X	3295827	0010			LMPC_FERT_34

Selection

Execute the action code S.Order (S_VA03).

Result:

The overview screen for the sales order appears.



Display Sales Order

> → Tip
>
> If the action code S_DBCLCK is configured accordingly, you can also double-click or hotspot click on the order number in the ALV Grid to display the sales order S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

2.6.9 LMPC HJPT Support Functions

Overview of the LMPC HJPT support functions.

2.6.9.1 S_BED2 Read Requirement Date MD09

Call requirement date determination MD09

The action code Req. inf. (S_BED2) is an auxiliary function for very rare requirements.

If the data provider /LMPC/CL_DP_BED_2 is used in a system, the requirement dates for the orders are determined using the logic of transaction MD09 and buffered in a database table. Data Provider /LMPC/CL_DP_BED_2 Requirement Date According to MD09 Logic [page 448]

Data generation consumes a lot of runtime and takes a certain amount of time. If the determination of the data is not activated via a regular background job, it is possible that when newly generated orders are first called, the requirement date data is not available in LMPC for new orders.

You can execute the action code S_BED2 for one or more orders, to generate the data for individual orders immediately, without having to wait for the result of the data provider.

> ⚠ Restriction
>
> Data determination is not possible for simulative orders. S_CRORD Create Simulative Order [page 156]

2.6.9.2 S_BMATXT Change Material Basic Data Text

Usage

You can use the action code S_BMATXT to change the basic data texts of materials. The basic data text is in the material master in the additional data.

Procedure

Several basic data texts of materials can be changed with one function call.

Select one or more operations in the ALV Grid of the HJPT planning table.

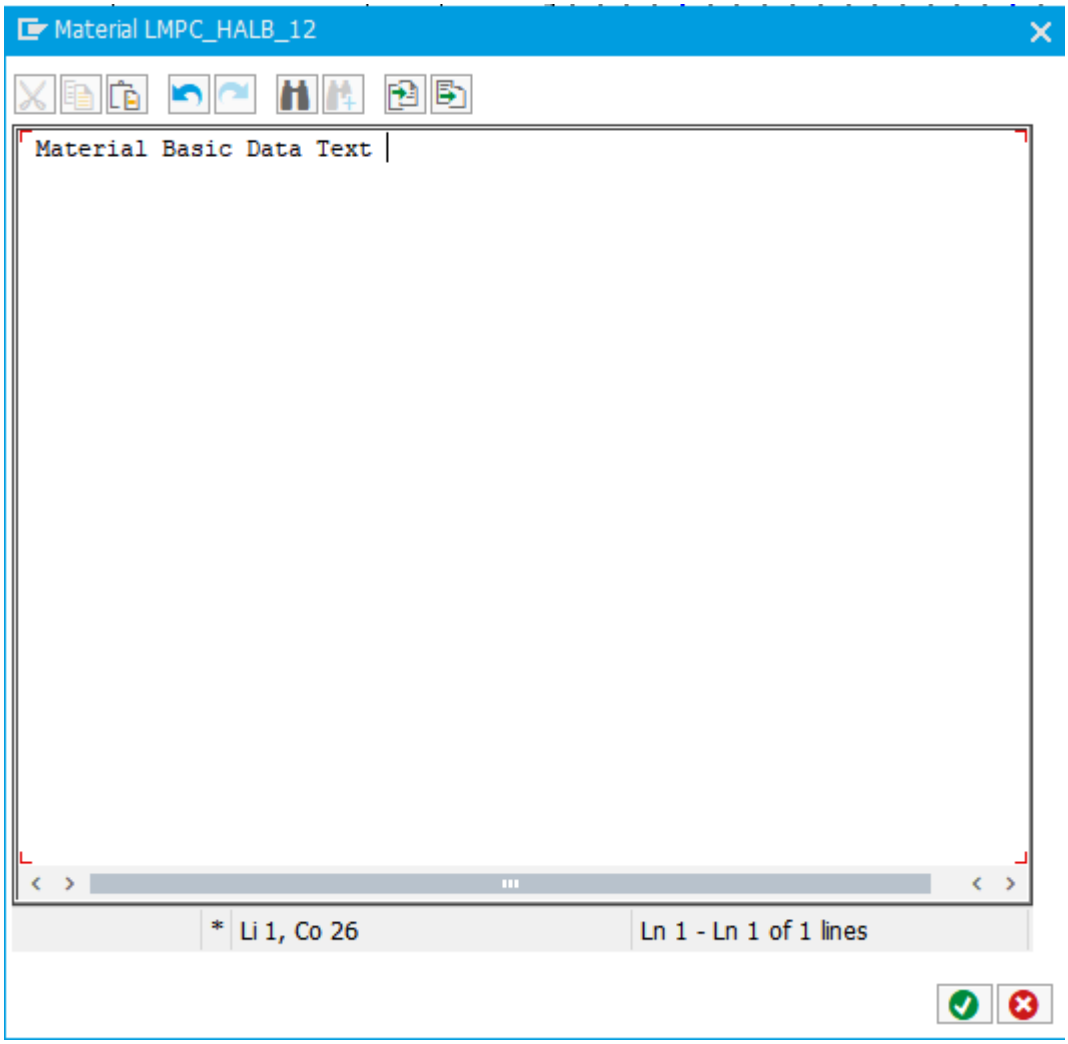
Alert	Lock	Dis	Fmd	Order Number	OpAc	SOp	Material	Wor...
		X	X	3295759	0010		LMPC_HALB_12	MA1
		X	X	3295437	0010		LMPC_HALB_SL_1	MA1
			X	3297245	0010		LMPC_HALB_SR	MA1

Selection of Operations

Execute the action code Mat.BDTxt (S_BMATXT).

The function reads the materials of the orders from the selected operations.

For each material in the selection, the system displays a dialog box for entering the basic data text.



Dialog Box Basic Data Text

The title of the window tells you the material for which you are maintaining the basic data text.

A detailed text can be maintained.

If several materials are included in the selection, another window appears for the next material after you confirm the window.

The confirmation writes the basic data text to the material master.

> → Remember
>
> The change is made in simulation mode. The data in the relevant material master is only updated if you then save. If you exit the planning table without saving, the changes will be lost.

When delivered, the function is set up in such a way that the text set is maintained in the logon language of the user. You can use the parameter LANGUAGE in the settings for the action code to define a language for maintenance. If this parameter is maintained, maintenance only takes place for the defined language.

Related Information

Action Codes for Support Functions

2.6.9.3 S_CONATP Log for ATP Check

Log for ATP Check

The action code S_CONATP reads the log for the ATP check and displays it. This action code can only be used as a follow-on action code for the ATP check with the action code S_ATP. It cannot be used as a standalone action code.

2.6.9.4 S_CONPFR Log Mass Release

Log for Mass Release

The action code S_CONPFR reads the log for the mass release and displays it. This action code can only be used as a follow-on action code for mass release with the action code S_MFREI. It cannot be used as a standalone action code.

2.6.9.5 S_CONPRO Log for Mass Conversion

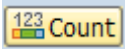
Log for Mass Conversion

The action code S_CONPRO reads the log for the mass conversion and displays it. This action code can only be used as a follow-on action code for mass conversion with the action codes S_CONVPL, S_CONVPP, and S_CONVPI. It cannot be used as a standalone action code.

2.6.9.6 S_COUNT Counting ALV Grid Data Records

Count Data Records in the HJPT Detailed Scheduling Board

Use

You can use the action code 

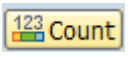
(S_COUNT) to count the selected data records in the ALV Grid.

Procedure

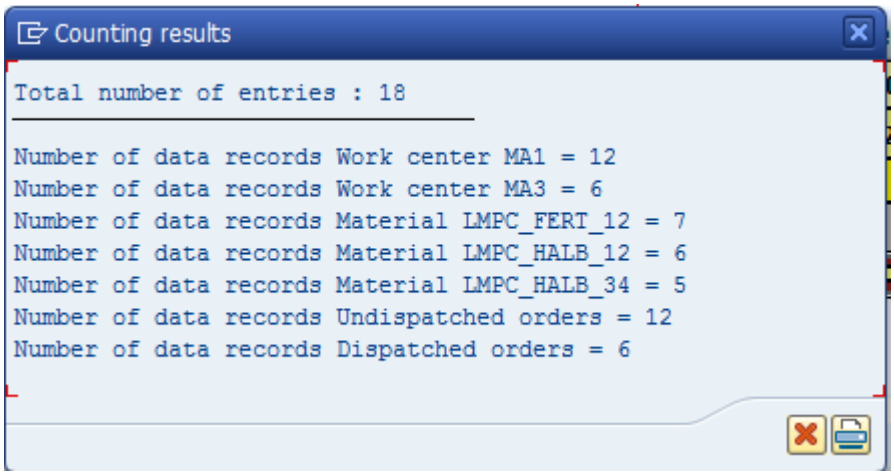
- Select data records in the ALV Grid.

Alert	Conflict	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	SOp	Material	Earliest start
		X		MA3	60007840	0010	1	10	0		LMPC_FERT_12	27.12.2017
		X		MA3	60007845	0010	1	10	0		LMPC_FERT_12	28.12.2017
		X		MA3	60007846	0010	1	10	0		LMPC_FERT_12	29.12.2017
		X		MA3	60007847	0010	1	10	0		LMPC_FERT_12	30.12.2017
		X		MA3	60007848	0010	1	10	0		LMPC_FERT_12	30.12.2017
		X		MA3	60007849	0010	1	10	0		LMPC_FERT_12	30.12.2017
		X	X	MA3	2703322	0010	2		0		LMPC_FERT_12	30.12.2017
		X	X	MA3	2703323	0010	2		0		LMPC_FERT_12	03.01.2018
		X	X	MA3	2703327	0010	2		0		LMPC_FERT_12	09.01.2018
			X	MA1	2702375	0010	2		0		LMPC_HALB_34	21.12.2017
			X	MA1	2703334	0010	2		0		LMPC_HALB_12	21.12.2017
				MA1	60007816	0010	1	10	0		LMPC_HALB_12	22.12.2017
			X	MA1	2703346	0010	2		0		LMPC_HALB_12	22.12.2017
			X	MA1	2703348	0010	2		0		LMPC_HALB_12	22.12.2017
			X	MA1	2702383	0010	2		0		LMPC_HALB_34	28.12.2017
			X	MA1	2702378	0010	2		0		LMPC_HALB_34	03.01.2018
			X	MA1	2702386	0010	2		0		LMPC_HALB_34	05.01.2018
			X	MA1	2661886	0010	2		0		LMPC_FERT_12	09.01.2018
				MA1	60007818	0010	1	10	0		LMPC_HALB_12	15.01.2018
			X	MA1	2703340	0010	2		0		LMPC_HALB_12	16.01.2018
			X	MA1	2702385	0010	2		0		LMPC_HALB_34	18.01.2018

Selecting Data Records for the Count

- Execute the action code 

(S_COUNT).
- A popup window appears with the results of the count:



Result

→ Remember

The count result is dependent on the settings in the Customizing of the action code. You use the parameters in Customizing to define the criteria to be used for counting. If no Customizing settings are defined, the system only displays the number of selected data records.

2.6.9.7 S_CPCHCK Check of Requirement Dates for Components of an Order

Check requirement dates of order components

Use

The action code Comp Check (S_CPCHCK) for the component checks compares the requirement dates of an order's components with the current date. If any component has a requirement date the predates the current day, the conflict field CONFLICT_AX is set in the ALV Grid of the HJPT planning table. If corresponding coloring is configured for this field, the respective row or a field in the ALV Grid are also highlighted in color.

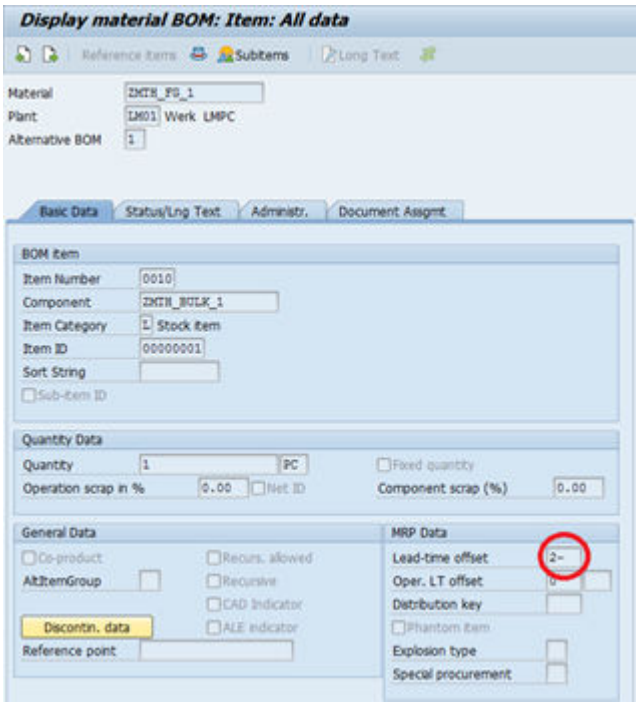
The action code for the component check is especially useful if individual components of the order require a lead time (meaning that they are not immediately available). If an order is dispatched to a point in time that is very close to the current date, it is possible that the lead time for the components means that they are not available in time. The planner can use this action code to check this issue.

The action code checks dispatched order operations as well as not dispatched order operations.

The action code can be executed as a standalone action code via a button in the ALV Grid. However, it can also be used as follow-up action code of a dispatching function. This means that the requirement dates of the components are checked immediately after planning.

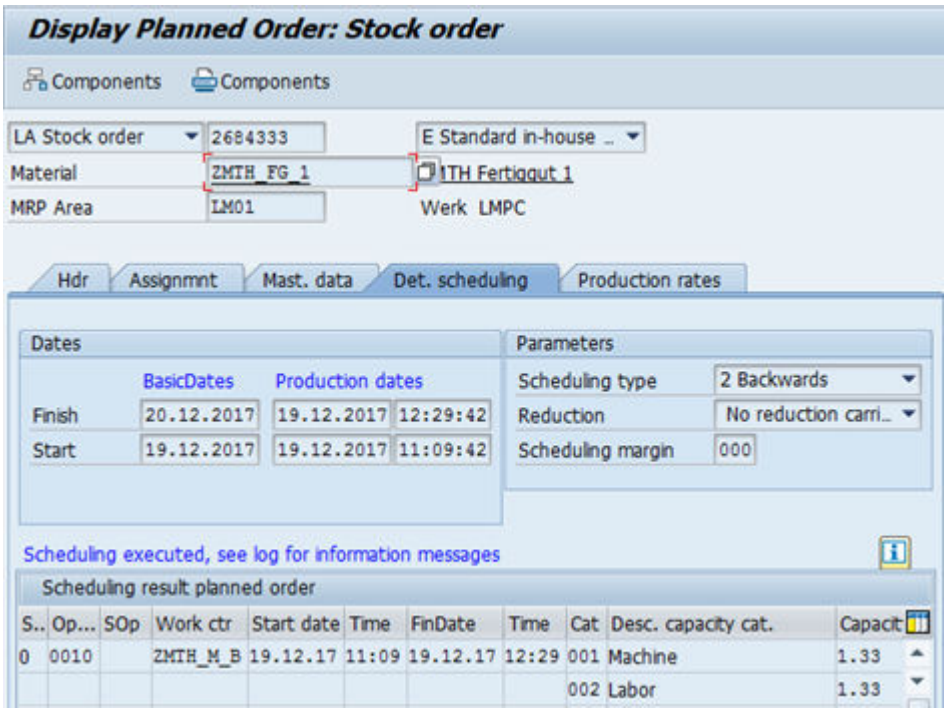
Procedure

- In the bill of materials of the finished product, a negative lead-time offset (meaning a lead time) of -2 days is maintained for one of the components.



Negative Lead-Time Offset in the BOM

- An order for the relevant material is dispatched for the current date (in the example: December 18, 2017):



Dispatched Order

- However, the material from the BOM should have been provided 4 days ago (2 days lead time + 2 days weekend) in order to be able to start processing the order today:

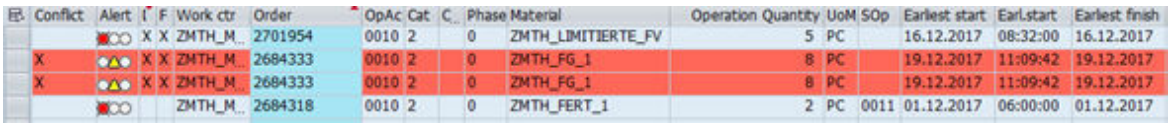


Requirement Date of BOM Material

- In order to avoid checking each component manually for this issue, instead the action code for component checking can be used after dispatching.

  Select the orders to be checked and execute the action code Comp Check for the component check.

- Result:



Highlighted Orders with Requirement Date Conflict for Components

All orders with a conflict for the components requirement date are identified via the conflict field. Based on the configured coloring, the corresponding ALV Grid rows are highlighted in red.

2.6.9.8 S_FILTR, S_FILTRE Set and Remove Filters

Set and remove filters in the ALV Grid of the LMPC planning table.

Use

You can use the action codes Filter (S_FILTR) and Del. Filte (S_FILTRE) to set and delete filters in the ALV Grid of the LMPC planning table.

Both action codes use the same action class /LMPC/CL_ACTION_FILTER. Depending on the Customizing settings, you can use this class to execute 3 different functions:

- Remove all filters
- Set filters
- Remove filters

The action codes S_6_FICO, S_6_FICW, S_6_FIMA, and S_8_FIMG are variants of the action code S_FILTR that are configured differently.

Procedure

S_FILTRE Remove all filters

If the action code Del. Filte (S_FILTRE) is executed, all filters in the ALV Grid are removed, regardless of whether they have been set manually, saved in the layout, or have been set using the action code Filter (S_FILTR).

S_FILTR Set filters

The user selects those data sets whose values are to apply to the filter and executes the action code button for Filter (S_FILTR).

Alert	Conflict	F	Work ctr	Order	OpAc	Cat	C..	Phase	SOp	Material	Earliest start	Earl.start	Earliest finish	Erl.finish
			MA1	60007815	0010	1	10	0		LMPC_HALB_12	05.01.2018	06:17:47	10.01.2018	11:40:00
			MA1	60007816	0010	1	10	0		LMPC_HALB_12	10.01.2018	07:51:07	13.01.2018	04:00:00
			MA1	60007818	0010	1	10	0		LMPC_HALB_12	13.01.2018	19:11:07	15.01.2018	07:40:00
		X	MA1	2661886	0010	2		0		LMPC_FERT_12	15.01.2018	05:51:40	15.01.2018	14:45:00
		X	MA1	2702375	0010	2		0		LMPC_HALB_34	15.01.2018	12:12:42	17.01.2018	12:00:00
		X	MA1	2702378	0010	2		0		LMPC_HALB_34	17.01.2018	04:20:19	18.01.2018	12:00:00
		X	MA1	2702383	0010	2		0		LMPC_HALB_34	19.01.2018	04:41:45	23.01.2018	13:30:00
		X	MA1	2702385	0010	2		0		LMPC_HALB_34	23.01.2018	14:17:27	31.01.2018	09:00:00

Selection of Data Sets for Setting Filters

For example, in Customizing you have defined that the fields Work Center and Material Number are set as filter fields. The logic reads the values for work center and material from the selected data sets, and uses these values to set the filter in the ALV Grid.

Result:

Alert	Conflict	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	SOp	Material	Earliest start
			X	MA1	2661886	0010	2		0		LMPC_FERT_12	15.01.2018
			X	MA1	2702375	0010	2		0		LMPC_HALB_34	15.01.2018
			X	MA1	2702378	0010	2		0		LMPC_HALB_34	17.01.2018
			X	MA1	2702383	0010	2		0		LMPC_HALB_34	19.01.2018
			X	MA1	2702385	0010	2		0		LMPC_HALB_34	23.01.2018
			X	MA1	2702386	0010	2		0		LMPC_HALB_34	02.02.2018
			X	MA1	2702387	0010	2		0		LMPC_HALB_34	02.02.2018

Filtered Display in the ALV Grid

Only data sets are displayed whose work center and material have the previously selected values.

S_FILTR Remove filters

If the user wants to remove the set filters, they execute the action code Filter S_FILTR (S_FILTR) again without selecting any data sets.

Alert	Conflict	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	SOp	Material	Earliest start
			X	MA1	2661886	0010	2		0		LMPC_FERT_12	15.01.2018
			X	MA1	2702375	0010	2		0		LMPC_HALB_34	15.01.2018
			X	MA1	2702378	0010	2		0		LMPC_HALB_34	17.01.2018
			X	MA1	2702383	0010	2		0		LMPC_HALB_34	19.01.2018
			X	MA1	2702385	0010	2		0		LMPC_HALB_34	23.01.2018
			X	MA1	2702386	0010	2		0		LMPC_HALB_34	02.02.2018
			X	MA1	2702387	0010	2		0		LMPC_HALB_34	02.02.2018

Filtered Data Sets Without Selection

Execute action codes Filter (S_FILTR).

Result:

Alert	Conflict	I	F	Work ctr	Order	OpAc	Cat	C...	Phase	SOp	Material	Earliest start	E
				MA1	60007815	0010	1	10	0		LMPC_HALB_12	05.01.2018	0
				MA1	60007816	0010	1	10	0		LMPC_HALB_12	10.01.2018	0
				MA1	60007818	0010	1	10	0		LMPC_HALB_12	13.01.2018	1
			X	MA1	2661886	0010	2		0		LMPC_FERT_12	15.01.2018	0
			X	MA1	2702375	0010	2		0		LMPC_HALB_34	15.01.2018	1
			X	MA1	2702378	0010	2		0		LMPC_HALB_34	17.01.2018	0
			X	MA1	2702383	0010	2		0		LMPC_HALB_34	19.01.2018	0
			X	MA1	2702385	0010	2		0		LMPC_HALB_34	23.01.2018	1
			X	MA1	2702386	0010	2		0		LMPC_HALB_34	02.02.2018	0
			X	MA1	2702387	0010	2		0		LMPC_HALB_34	02.02.2018	0

Unfiltered Data Sets

The filters for the fields, which are set in Customizing, are removed.

→ Tip

- The system only removes the filters for the fields that have been set in Customizing. The filters on all the other fields remain unchanged. This means that filters set manually or set via the layout profile are not lost.
- The filters set temporarily can be retained when saving the data and reloading the data if retaining filter settings is set in the settings for the HJPT overall profile. Configuration of HJPT Overall Profile

⚠ Restriction

This filter function only affects the display of the data sets in the ALV Grid. It does not affect the display of the bars in the graphical planning table.

2.6.9.9 S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid

Double-Click on Action Codes

Use

The action code S_DBCLCK enables you to execute different action codes by double-clicking or clicking the hotspot on a field in the ALV Grid of the LMPC HJPT detailed scheduling planning board.

In the LMPC standard delivery, the following settings are defined in the action code S_DBCLCK, which is used in the LMPC test profiles LMPC_T01 [page 30], LMPC_T02 [page 32], LMPC_T03 [page 33], and LMPC_T05 [page 35]:

S_DBCLCK

Field	Technical Field Name	Action Code
Order number	/LMPC/DELNR_CY, PLNUM_PA, AUFNR_FA	S_AK02 Change Order [page 116]
Operation number	/LMPC/VORNR_CY, VORNR_KB, VORNR_AV	S_AV02 Changing Operations of the Production Order or Process Order [page 120]
Material number	MATNR_MA and MATNR_MC	S_MM03 Displaying Material Master Data [page 376]
Requirement date	BDTERM_MD	S_MD04 Stock/Requirements List [page 373]
Rescheduling date	UMDAT_MD	S_MD04 Stock/Requirements List [page 373]
Order text	/LMPC/AUTEXT_FA	S_AUTEXT Change the Long Text of Production Orders and Process Orders [page 119]

Field	Technical Field Name	Action Code
LMPC order text	CORDTEXT_AX	S_CORTXT LMPC HJPT Order Text [page 134]
Number of tasks	NUM_MEAS_ME	S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
Task ID	MEASURE_ID_ME	S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
Work center	ARBPL_CR	S_CR03 and S_CRC3 Display Work Center or Resource [page 367]
Sales order	KDAUF_SD	S_VA03 Display Sales Order [page 381]

→ Tip

If the “HOTSPOT” parameter is set for the action code, the function is called by clicking on the hotspot instead of double-clicking. The advantage of a hotspot is that an underscore in the data indicates that a function is in that field.

The following screen section shows the underscores in the fields for the order number and material number.

Alert	Requirement date	Avail.date	Bufferdays	Dispa..	F..	Number	Order	OpAc	Cat	Material	Work ctr	Earliest start	Earl.start
	03.02.2020	18.05.2020	72	X	X		3192538	0030	001	LMPC_HALB_1234	MA1	12.05.2020	14:08:23
	01.04.2020	20.05.2020	32	X	X		3127588	0010	001	LMPC_HALB_12	MA1	12.05.2020	16:13:23
	01.04.2020	20.05.2020	32	X	X		3127612	0010	001	LMPC_HALB_12	MA1	13.05.2020	07:18:23
	25.02.2020	20.05.2020	58	X	X		3192541	0030	001	LMPC_HALB_1234	MA1	13.05.2020	12:28:23
	30.03.2020	20.05.2020	34		X		3192542	0030	001	LMPC_HALB_1234	MA1	14.05.2020	11:45:00
	06.04.2020	25.05.2020	31				60008347	0010	001	LMPC_HALB_12	MA1	16.05.2020	11:18:00
	14.04.2020	25.05.2020	27		X		3127611	0010	001	LMPC_HALB_12	MA1	16.05.2020	12:30:00

Grid with Hotspots on Order Number and Material Number

In the LMPC test profiles LMPC_T06 [page 36] and LMPC_T07 [page 40], a variant of the action code is used that is configured slightly differently.

S_6_DBCL

Field	Technical Field Name	Action Code
Order number	/LMPC/DELNR_CY, PLNUM_PA, AUFNR_FA	S_AK02 Change Order [page 116]
Operation number	/LMPC/VORNR_CY, VORNR_KB, VORNR_AV	S_AV02 Changing Operations of the Production Order or Process Order [page 120]
Material number	MATNR_MA and MATNR_MC	S_MM03 Displaying Material Master Data [page 376]
Requirement date	BDTERM_MD	S_MD04 Stock/Requirements List [page 373]

Field	Technical Field Name	Action Code
Order text	/LMPC/AUTEXT_FA	S_AUTEXT Change the Long Text of Production Orders and Process Orders [page 119]
LMPC order text	CORDTEXT_AX	S_CORTXT LMPC HJPT Order Text [page 134]
Number of tasks	NUM_MEAS_ME	S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
Task ID	MEASURE_ID_ME	S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
Work center	ARBPL_CR	S_CR03 and S_CRC3 Display Work Center or Resource [page 367]
Sales order	KDAUF_SD	S_VA03 Display Sales Order [page 381]
Remaining capacity requirement processing	KBEAREST_KB	S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]
Remaining capacity requirement setup	KRUEREST_KB	S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]
BOM component 1	STKO1_SP	S_CS03 Display BOM [page 367]
Material description BOM component 1	MAKT1_SP	S_MD04 Stock/Requirements List [page 373]
Latest capacity requirement start date	SSTAD_KB	S_MD04 Stock/Requirements List [page 373]

The LMPC test profile LMPC_T08 [page 44] also has its own configuration in the action code S_8_DBCL. This is almost identical to the configuration of S_6_DBCL. Since the profile LMPC_T08 is used for repetitive manufacturing in which only planned orders exist, the calls for changing the operation were removed in S_8_DBCL (S_AV02) since it is not possible to change operations for planned orders.

The LMPC test profile LMPC_T09 [page 48] also has its own configuration in Action Code S_9_DBCL.

S_9_DBCL

Field	Technical Field Name	Action Code
Order number	/LMPC/DELNR_CY, PLNUM_PA	S_AK02 Change Order [page 116]
Material number	MATNR_MA and MATNR_MC	S_MM03 Displaying Material Master Data [page 376]
LMPC order text	CORDTEXT_AX	S_CORTXT LMPC HJPT Order Text [page 134]
Number of tasks	NUM_MEAS_ME	S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]

Field	Technical Field Name	Action Code
Task ID	MEASURE_ID_ME	S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
Work center	ARBPL_CR	S_CR03 and S_CRC3 Display Work Center or Resource [page 367]
BOM component 1	STKO1_SP	S_CS03 Display BOM [page 367]
Latest capacity requirement start date	SSTAD_KB	S_MS04 Long-Term Planning: Stock/ Requirements List [page 378]

2.6.9.10 S_DINFO Detailed Information for Graphical Bars

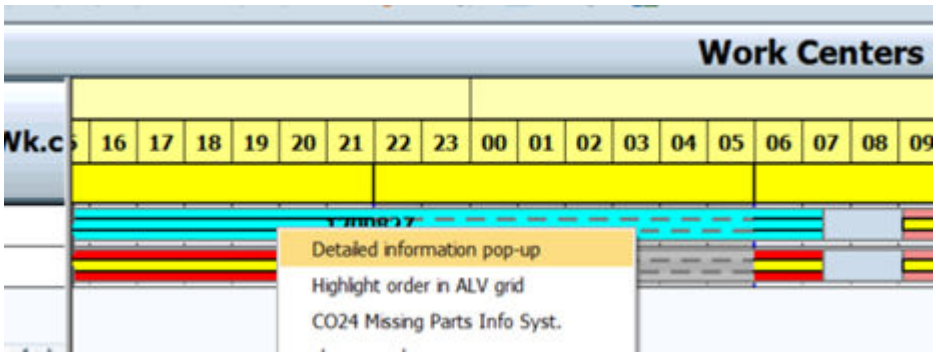
Detailed Information for Graphical Bars

Use

You use this action code in the context menu of the capacity planning table and it displays information for an order in a popup window.

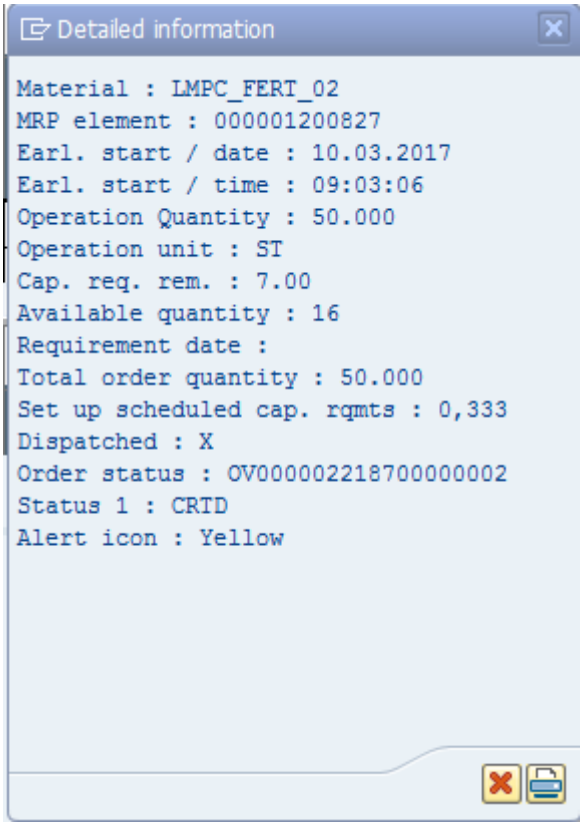
Procedure

- Select a bar in the graphical section of the LMPC planning table (selection = blue color) + right-click.
- Select the function "Detailed information pop-up".



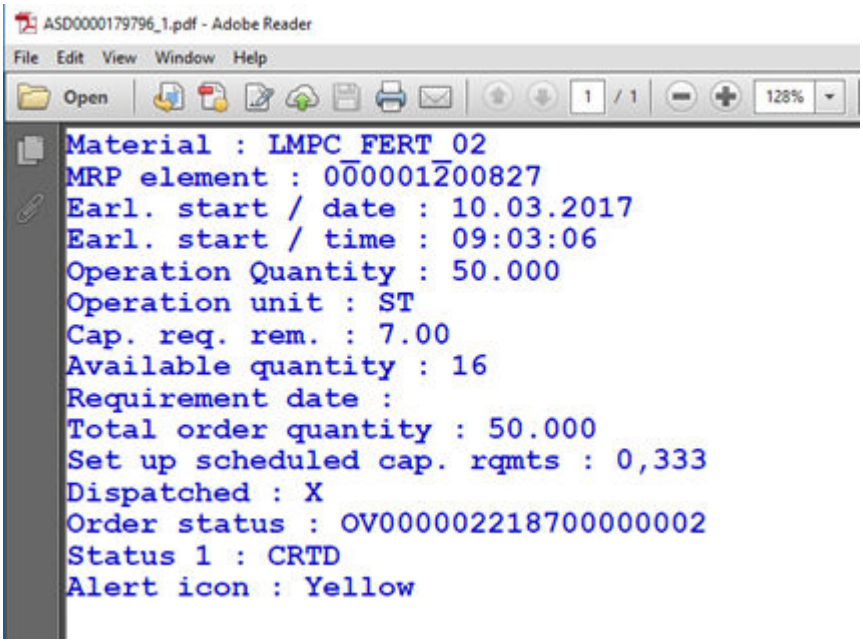
Executing the Function

- The system displays a popup window with details on the order.



Example of Popup Window with Detailed Information

- You can use the *Print* function to export the information.



Example: Export Detailed Information to PDF

→ Tip

You use Customizing to make settings to define which information is displayed.S_DINFO Configuration: Dialog Box for Detailed Information

2.6.9.11 S_DRADRO Set strategy profile for Drag&Drop Planning in Graphic

This action code is not intended for dialog processing.

This action code is attached to the context profile with the trigger "Drag & Drop in the graphical table" to use a different strategy profile for planning with drag and drop in the graphic than the strategy profile that is defined in the overall profile of the graphic. G01 Transaction /LMPC/OPD0: Overall Profile for Capacity Leveling

If the action code is active, the strategy profile that is stored in the action code S_DRADRO using a parameter is used for dragging and dropping in the graphic. Usually, this is the strategy profile LMP_D&DE. Action Codes for Support Functions

The action code works when dragging and dropping both for a single operation and for several operations at the same time if the Shift key is pressed when moving. See the notes on moving several operations at the same time in the chapter on planning in the graphic.Planning Order Operations in the Bar Chart [page 62]

This action code is intended for special use cases and is not normally required.

> → Tip
>
> As an alternative, you can use the action code S_SETSTR. You can use the action code S_SETSTR to temporarily change the settings of a strategy profile. Therefore, if you want to change the behavior of the planning table when dragging and dropping while working with the planning table, you can use the action code S_SETSTR to call the settings for the strategy profile for drag and drop and change them. The changes are retained until the data is reloaded or the application is exited. The changes are not saved permanently. S_SETSTR Change Strategy Profile Settings [page 257]

2.6.9.12 S_FIX, S_FIXE Firm and remove firming of orders

Firm and remove firming of orders

Use

You can use the action code 

(S_FIX) to firm order operations of planned, production, and process orders.

You can use the action code 

(S_FIXE) to undo the firming.

Both single and multiple selection are possible.

> → Remember
>
> The changes are made in simulation mode. The changes are not written to the database until you save.

There are two types of firming that can be made:

- The standard SAP firming of planned, production, and process orders.

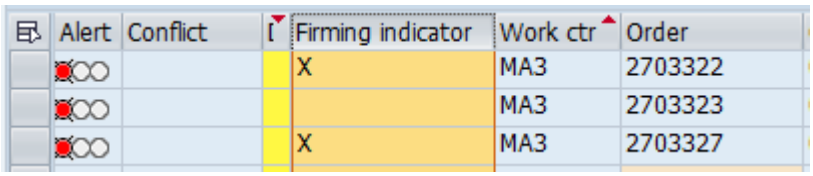
- Setting the LMPC HJPT firming indicator.

Customizing can be used to determine which of the possible firming types are used when executing the action code. S_FIX & S_FIXE Configuration: Set Firming and Remove Firming

Procedure

Standard SAP Firming of Planned Orders

The firming indicator of planned orders can be displayed in the field AUFFX_PA in the LMPC planning table.

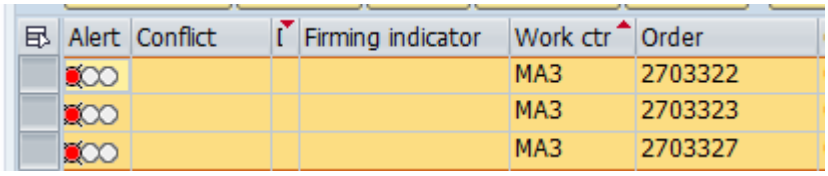


Alert	Conflict	[	Firming indicator	Work ctr	Order
			X	MA3	2703322
				MA3	2703323
			X	MA3	2703327

Firming Planned Orders

The orders are not firmed at the start.

Select order operations in the ALV Grid that are to be firmed.



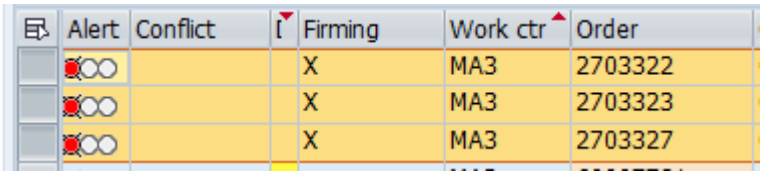
Alert	Conflict	[	Firming indicator	Work ctr	Order
				MA3	2703322
				MA3	2703323
				MA3	2703327

Selection of Orders

Execute the action code 

(S_FIX).

Result:

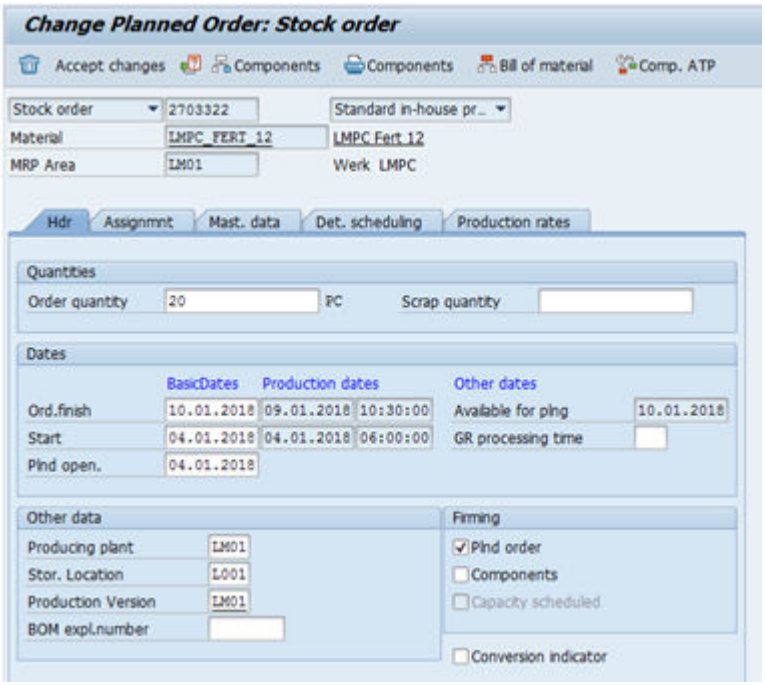


Alert	Conflict	[	Firming	Work ctr	Order
			X	MA3	2703322
			X	MA3	2703323
			X	MA3	2703327

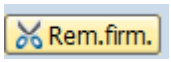
Result

The firming indicator is set for the orders.

If you open the order header of a planned order, the firming indicator is also set there.



Planned Order with Firming Indicator

You can use the action code 

(S_FIXE) to undo the firming.

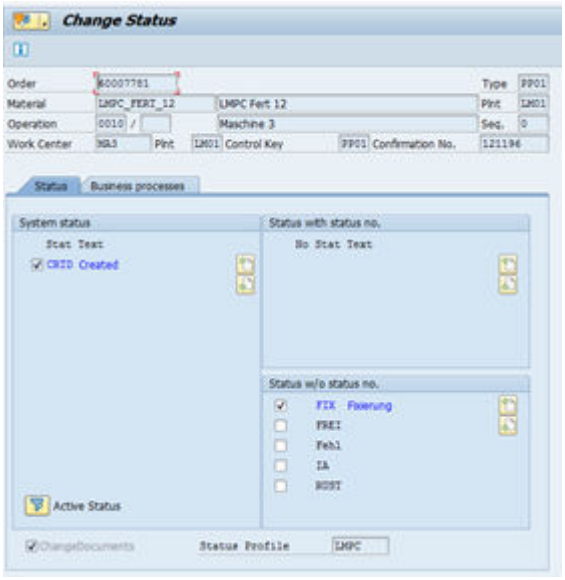
If the parameter `CHK_BOMF` is set in the settings for the action code, the firming indicator cannot be removed if the firming indicator is set for the components in the planned order.

> ⚠ Caution
>
> - Special feature of planned orders: When you fix operations of a planned order, the entire planned order is firmed. Individual operations of planned orders cannot be firmed. The firming takes place at order header level.
> - Planned orders are firmed automatically when they are dispatched.
> - If you remove the firming indicator for a planned order, the order is automatically deallocated.
> - The operations of this order can always be dispatched and deallocated, regardless of whether a planned order is firmed. So they can always be moved. The firming indicator does not influence the planning activities.
> - It only prevents change by means of an MRP run. The MRP run ignores firmed planned orders. They will then no longer be changed.
> - Planned orders cannot be firmed to a specific position in the production plan. If you want to prevent operations of planned orders from being moved, you can only do this by converting a planned order into a production order and process order and assigning the standard firming to it. See next section.

Standard SAP Firming of Operations of Production Orders

For the production order, the LMPC user status 'FIX' is set or removed in the operation of the production order. The firming takes place at operation level.

Example of a status in the operation of a production order:



Firming in the production order

> → Tip
>
> If you want to see the status "FIX" in the ALV Grid, you can set this via the status query, which can be defined in LMPC Customizing. Then the status is written to one of the status fields. The prerequisite for this is the configuration of a user status schema for the order operation and the existence of a status with **authorization key FIX**. This status is set or removed with this action.

> ⚠ Caution
>
> Firmed production order operations can be dispatched.
>
> However, dispatched production order operations cannot be deallocated. The status "FIX" prevents deallocation of these order operations. They can no longer be rescheduled to other dates. They are firmed to their positions in the production plan.

Standard SAP Firming of Operations of Process Orders

Process order operations are firmed, in the same way as in production orders, via the user status within the order operation. Since it is not possible to use the process order settings to maintain a default status profile for operations, you can use the action code parameter STSMA to supply a default status profile for process orders. This status profile will be applied to the operation by the action code if the operation does not already have a status profile. The status profile used for firming process orders must be valid for operations in the process industry. The behavior for planning activities is similar to the behavior for production orders.

LMPC HJPT Firming Indicator

The LMPC HJPT firming indicator is only an indicator relating to an operation of an order. It is an indicator that can be set and removed. This can be done separately or in connection with the standard SAP fixing.

Without further settings, the indicator has no effect on operations of orders and is used only to indicate operations.

The changes to the indicator are made in the simulation.

If the indicator is changed, the following fields are updated:

Field Name	Description
HJPT_FIRM_AX	LMPC HJPT Firming Indicator
FCRUSER_AX	LMPC HJPT Firming Created By
FCHUSER_AX	LMPC HJPT Firming Last Changed By
FCRTMSTMP_AX	LMPC HJPT Firming Created On
FCHTMSTMP_AX	LMPC HJPT Firming Last Changed On

HJPT firming	LMPC Firming Created By	HJPT Firming Last Changed By	HJPT Firming Created On	HJPF Firming Last Changed On
X	D056579	D056579	15.09.2021 10:00:56	15.09.2021 10:00:56
X	D056579	D056579	15.09.2021 10:00:56	15.09.2021 10:00:56

Fields of the HJPT Firming Indicator

Options for using the LMPC HJPT firming indicator:

- You can use these fields to see when and by which user the LMPC HJPT firming was changed for the first time or most recently in an operation.
- In connection with the Action Code Limits [page 104], the execution of certain functions can be prevented. For example, you can specify that it is no longer possible to dispatch or deallocate operations that have the HJPT firming indicator. If you use only planning functions that support the action code limitation and change the strategy profile in all planning functions in such a way that the insertion of operations is not activated, you can prevent operations with the HJPT firming indicator from being moved. These operations are not technically firmed. Only the settings of the planning functions prevent the dispatched orders from being moved. In this way, you can firm planned orders to fixed position in the production plan.
  G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles
- The bars of the operations in the graphic and the data records in the ALV Grid can be colored depending on the contents of the fields.
  Coloring of Bars of the Bar Chart [page 50]
  Coloring the ALV Grid [page 71]
- The function for dispatching using fixed operations uses the LMPC HJPT firming indicator. S_EPFX Dispatching Across Firmed Operations [page 328]
- Function S_RESCPF uses the LMPC HJPT firming indicator. S_RESCPF Reschedule: HJPT Firming Indicator and Parallel Planning with Pool ID [page 333]

→ Remember

- For the data for the LMPC HJPT firming indicator to be display, the data provider /LMPC/CL_DP_OP_ADD must be active. Data Provider /LMPC/CL_DP_OP_ADD Additional Data for Operations [page 486]
- The data for the LMPC HJPT firming indicator is stored for one year and is then deleted automatically.

S_FIX and S_FIXE can also be used in background processing. Program /LMPC/HJPT Background Processing [page 26]

2.6.9.13 S_L--, S_L-, S_L+, S_L++, Moving Rows within the ALV Grid

Moving Rows in the ALV Grid

Use

You can use the functions  to move ALV Grid rows.

This means that the ALV Grid lines can be sorted for planning functions, for example.

Instead of using drag and drop to move the rows, you can also use the ALV Grid buttons to move the rows.

Functions: 

- Move to the top
- Move one row up
- Move one row down
- Move to the bottom

Procedure

- Select one or more rows in the ALV Grid.

Alert	[	F	Work ctr	Order	OpAc	Cat	C...	Phase	Material	SOp
	X		MA1	60007668	0010	1	10	0	LMPC_HALB_34	
			MA1	60007712	0010	1	10	0	LMPC_HALB_12	
			MA1	60007667	0010	1	10	0	LMPC_HALB_34	
		X	MA1	1329491	0010	2		0	LMPC_HALB_12	
			MA1	60007666	0010	1	10	0	LMPC_HALB_34	
			MA1	60007453	0010	1	10	0	LMPC_HALB_12	

Select Operations

- Execute one of the action codes, for example,  (S_L-).
- Result:

Alert	[	F	Work ctr	Order	OpAc	Cat	C...	Phase	Material
	X		MA1	60007668	0010	1	10	0	LMPC_HALB_34
			MA1	60007667	0010	1	10	0	LMPC_HALB_34
		X	MA1	1329491	0010	2		0	LMPC_HALB_12
			MA1	60007666	0010	1	10	0	LMPC_HALB_34
			MA1	60007712	0010	1	10	0	LMPC_HALB_12

Result

The 3 operations have been moved up by one position.

> ⚠ Caution
>
> If filters are used for the ALV Grid, the data records are moved in such a way that the items of the filtered data records remain unchanged. This means that only the visible data records are moved. Non-visible data records remain unchanged in their positions.

2.6.9.14 S_LFLDV Move Line to Field Value

Use

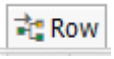
You can use this action code to move one or more operations in the ALV Grid. You specify where the data records are sorted by entering a value for a search field. The selected operations are sorted directly by the last operation that has the value of the search field.

Procedure

Select one or more operations in the ALV Grid.

Alert	Lock	Fmd	Dispatched	Ord. Nr.	OpAc	Material	Work ctr	Description	Op. Qty	UoM	Earliest start	Earl.start
●○○		X		3344992	0010	153	MA1	LMPC wst 1	181	PC	28.06.2022	17:25:00
○▲○		X		3349045	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	10	PC	11.07.2022	13:50:00
○▲○				60009089	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	4	PC	11.07.2022	14:50:00
●○○		X		3348433	0010	LMPC_HALB_12	MA1	LMPC wst 1	20	PC	13.07.2022	12:10:00
●○○		X		3344992	0020	153	MA1	LMPC wst 1	181	PC	13.07.2022	12:27:30
○▲○		X		3349043	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	6	PC	13.07.2022	14:30:00
●○○		X		3348691	0010	LMPC_HALB_12	MA1	LMPC wst 1	40	PC	14.07.2022	08:50:00

Selection of Operations

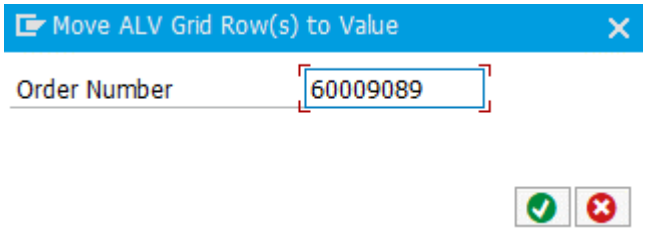
Execute the action code 

(S_LFLDV).

The system displays a popup window for entering a search value.

The search field can be defined using settings in customizing. If no settings are defined, the search is based on the order number. S_LFLDV Configuration: Move Line to Field Value

Enter the value of the search field for sorting.



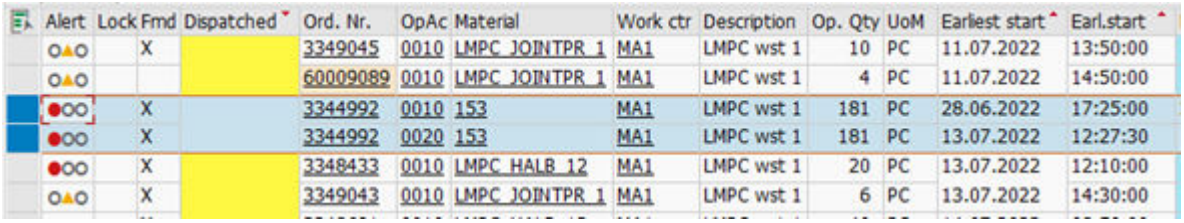
Dialog Box for Value of Search Field

The system first checks whether the value exists. If the value does not exist, the function terminates with an error message.

An additional check can be activated. You can set that either only dispatched operations or only deallocated operations can exist in the selection. If this condition is violated, the function terminates with an error message. This check must be activated separately using the settings for the function and is deactivated in the delivery.

The system searches for the last data record in the current sorting that contains the required field value. Directly after this data record, the selected data records are sorted.

Result:



Alert	Lock	Fmd	Dispatched	Ord. Nr.	OpAc	Material	Work ctr	Description	Op. Qty	UoM	Earliest start	Earl.start
		X		3349045	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	10	PC	11.07.2022	13:50:00
				60009089	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	4	PC	11.07.2022	14:50:00
		X		3344992	0010	153	MA1	LMPC wst 1	181	PC	28.06.2022	17:25:00
		X		3344992	0020	153	MA1	LMPC wst 1	181	PC	13.07.2022	12:27:30
		X		3348433	0010	LMPC_HALB_12	MA1	LMPC wst 1	20	PC	13.07.2022	12:10:00
		X		3349043	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	6	PC	13.07.2022	14:30:00

Result of Sorting

→ Tip

- Alternatives to this action code are sorting using drag and drop in the ALV Grid, sorting the entire ALV Grid, and the functions S_L+, S_L++ and S_L_-, S_L--.
  Sorting the ALV Grid List [page 71]
  S_SORT Reset Sorting of Planning Table and ALV Grid [page 415]
  S_L--, S_L-, S_L+, S_L++, Moving Rows within the ALV Grid [page 400]
- You use this action code to sort only the sequence of the display in the ALV Grid. This has no effect on the start times of the operations. If you want to change the dispatching sequence, you can use this action code in connection with functions for dispatching or rescheduling. To do this, first put the operations with the action code S_LFLDV in the desired sequence. Then use a function for dispatching or rescheduling and dispatch the operations in the previously selected sequence. This can be done, for example, with the action code S_EPSEL or the action code S_RESCD.
  S_EPSEL Dispatch Selected Operations [page 209]
  S_RESCD Reschedule All [page 252]

2.6.9.15 S_LOCK Temporarily Lock Orders

Set Temporary Processing Locks

Usage

You can use this action code to temporarily lock planned orders, production orders, and process orders in the planning table.

The locks are always set for the entire order and not for the individual operation of the order.

If locks are set, these orders can no longer be changed by other users in other transactions at the same time. For example, planned orders can no longer be changed in transaction MD12. It is also no longer possible to change production orders in transaction CO02. Also, another user can no longer double-click the order number in the ALV Grid of the HJPT planning table to navigate to change an order.

The same locks are set as when changing the orders in the HJPT planning table.

These are self locks. This means that the user who sets the locks can continue to process these orders in the HJPT planning table. Only other users can no longer do this.

> → Remember
>
> Locks are only valid temporarily. They cannot be saved. They are valid for as long as a user is working with the data. The set locks can be removed by exiting processing. Saving or reloading the data also removes the locks.

For the locks to be visible in the ALV Grid of the HJPT planning table, the data provider /LMPC/CL_DP_ENQUEUE must be activated. See also the further explanations in the section on the data provider and in the section on the lock mechanism.

Data Provider /LMPC/CL_DP_ENQUEUE Order Locks (Icon) [page 474]

Locking Mechanism for Changed Data [page 100]

> ⓘ Note
>
> Locks should not be confused with firming. For details on firming orders, see the section on firming. S_FIX, S_FIXE Firm and remove firming of orders [page 395]

Procedure

The planning table has been opened. The orders do not have any locks yet because they have not yet been changed. Certain orders are to be locked so that they cannot be changed by other users while the current user is processing these orders.

Select the data records for orders that are to be locked.

Alert	Lock	Dis...	Fmd	Order Number	OpAc	Subop.	Material	Work ...	Description
		X	X	3295762	0010		LMPC_HALB_12	MA1	LMPC wst 1
		X	X	3295437	0010		LMPC_HALB_SL_1	MA1	LMPC wst 1
		X	X	3295759	0010		LMPC_HALB_12	MA1	LMPC wst 1
		X	X	3297218	0010		161	MA1	LMPC wst 1
			X	3297245	0010		LMPC_HALB_SR	MA1	LMPC wst 1
			X	3295763	0010		LMPC_HALB_12	MA1	LMPC wst 1
			X	3295596	0010		LMPC_HALB_SL_1	MA1	LMPC wst 1
			X	3297244	0010		LMPC_HALB_SR	MA1	LMPC wst 1

Selection of Data Records To Be Locked

Execute the action code for locking 

(S_LOCK).

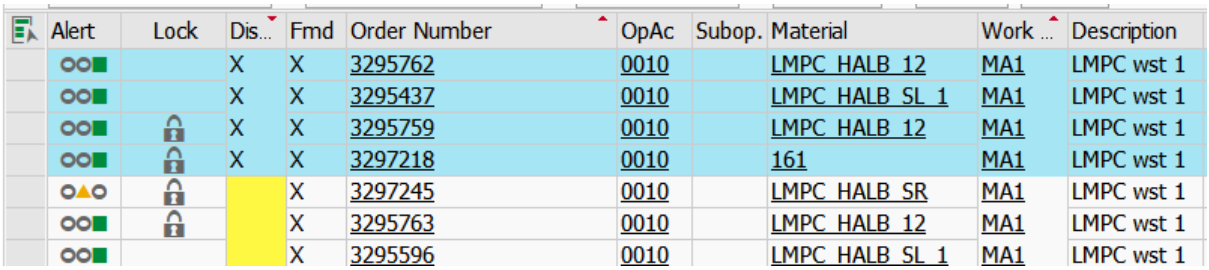
Result:

Alert	Lock	Dis...	Fmd	Order Number	OpAc	Subop.	Material	Work ...	Description
		X	X	3295762	0010		LMPC_HALB_12	MA1	LMPC wst 1
		X	X	3295437	0010		LMPC_HALB_SL_1	MA1	LMPC wst 1
		X	X	3295759	0010		LMPC_HALB_12	MA1	LMPC wst 1
		X	X	3297218	0010		161	MA1	LMPC wst 1
			X	3297245	0010		LMPC_HALB_SR	MA1	LMPC wst 1
			X	3295763	0010		LMPC_HALB_12	MA1	LMPC wst 1
			X	3295596	0010		LMPC_HALB_SL_1	MA1	LMPC wst 1
			X	3297244	0010		LMPC_HALB_SR	MA1	LMPC wst 1

Self Lock Result

In the column with the lock symbol, self locks are displayed for the respective data record. Self locks are displayed with the symbol of an open padlock.

If another user also opens the same orders in the planning table, the system displays external locks for this user. External locks are displayed with the icon of a closed padlock.



Alert	Lock	Dis...	Fmd	Order Number	OpAc	Subop.	Material	Work ...	Description
		X	X	3295762	0010		LMPC_HALB_12	MA1	LMPC wst 1
		X	X	3295437	0010		LMPC_HALB_SL_1	MA1	LMPC wst 1
		X	X	3295759	0010		LMPC_HALB_12	MA1	LMPC wst 1
		X	X	3297218	0010		161	MA1	LMPC wst 1
			X	3297245	0010		LMPC_HALB_SR	MA1	LMPC wst 1
			X	3295763	0010		LMPC_HALB_12	MA1	LMPC wst 1
			X	3295596	0010		LMPC_HALB_SL_1	MA1	LMPC wst 1

View External Locks

You can find the field for displaying locks in the ALV Grid layout group of the HJPT help fields.

If a user has already set a lock on an order, no further lock can be set. The locks of another user cannot be removed or overridden.

The action code can be configured in such a way that all orders opened in the planning table are locked. For this, parameter `LOCK_ALL` is to be activated in the action code. It is then sufficient to execute the action code once and all orders are locked.

If locks are only to be set on orders that have a specific property, this can be realized using the function of the action code limits. If, for example, you want to allow locks for production orders only, you create a rule in the action code limits that excludes planned orders from processing. Action Code Limits [page 104]

The action code can be executed manually via a key. It can also be executed automatically on all orders when the planning table is started. This enables you to lock all orders that are currently open for planning by the user. For this, the action code with the trigger `PBO` is inserted into the context profile used. The parameter `LOCK_ALL` must also be set for the action code so that all date records are selected automatically. The restriction of action codes also works here. For details on the action code triggers, see the LMPC Configuration Guide. Action Code Trigger

If all open orders are to be locked when the planning table is started, there is an alternative to adjust the settings in the control profile of the planning table. However, the locks are only set for production orders and process orders, not for planned orders. G03 Transaction /LMPC/OPDE: Control Profile

> → Tip
>
> The lock status of orders can be displayed visually by creating rules for coloring the bars in the graphic or for coloring the ALV Grid.
>
> - Coloring of Bars of the Bar Chart [page 50]
> - Coloring the ALV Grid [page 71]

2.6.9.16 S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions

MCF Tasks

Use

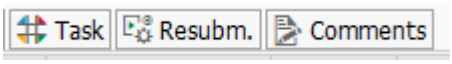
The MCF tasks function can be used in different consulting solutions and works across solutions.

The LMPC HJPT planning table has a data provider for displaying tasks data and three action codes for calling the tasks maintenance dialog.

The tasks data is assigned at the level of the planned, production, or process order. The key is therefore the order number in each case.

Procedure

There are 3 action codes for the tasks. One for maintaining tasks, one for maintaining comments, and one for maintaining resubmissions. You can use these action codes to create, change, and delete the elements mentioned.



Action Codes for Tasks

Each of these action codes takes you to the maintenance dialog for tasks, resubmissions, and comments. Depending on which action code you use, another area for creating an element is active.

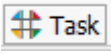
Only if you use the action code for the tasks are all existing objects for the key of the order number displayed immediately. You can then edit or delete them. For the other action codes, you can show the elements using the button for selecting existing elements.

Creating a Task

Select a line in the LMPC ALV Grid.

Alert	Disp...	F...	Lock	Order pool	Seq.	Ord. Nr.	OpAc	Material	Work ctr
●○○		X				3231048	0010	LMPC_FERT_34	MA3
●○○		X				3231068	0010	LMPC_FERT_34	MA3
●○○		X				3231055	0010	LMPC_FERT_34	MA3
●○○		X				3231066	0010	LMPC_FERT_34	MA3

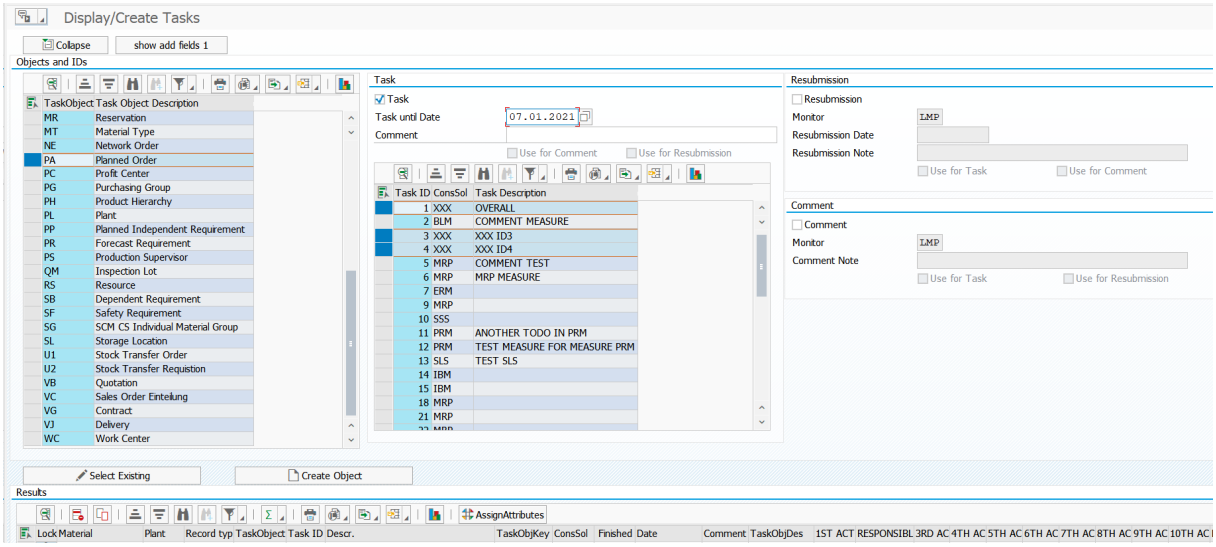
Line Selection

Call the action code 

(S_MCFMEA) for tasks.

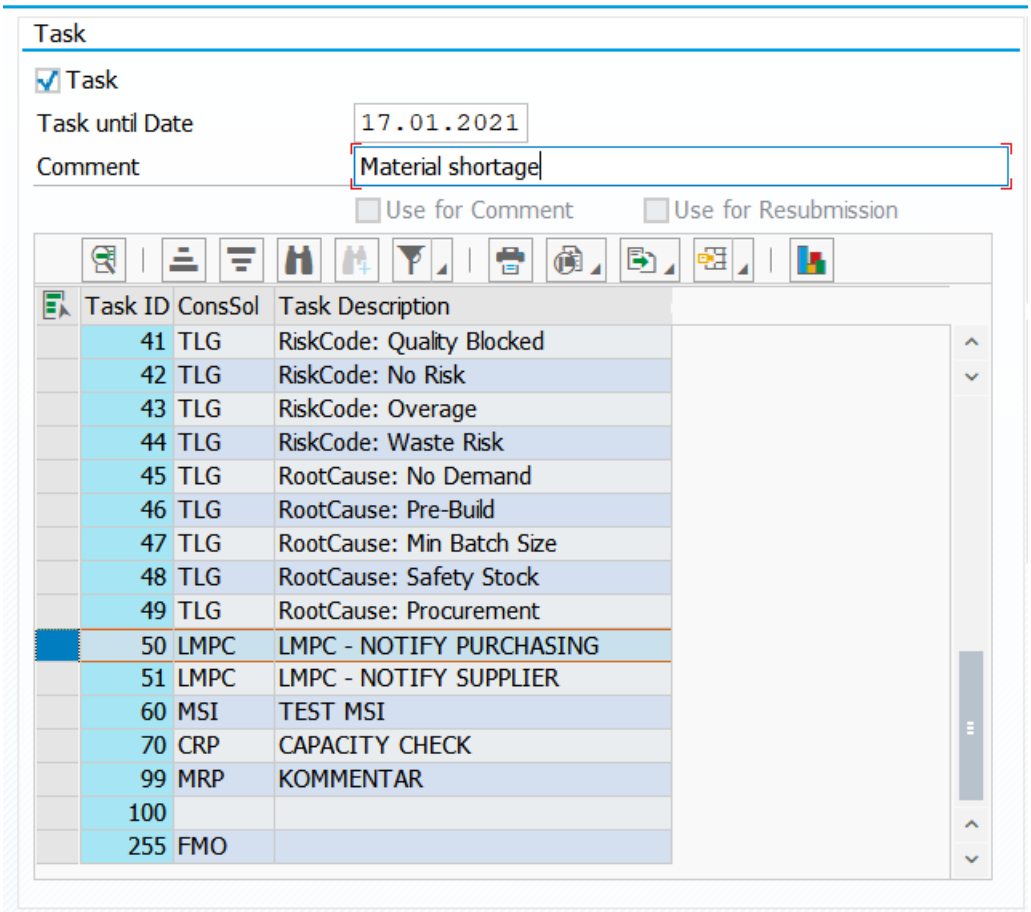
The screen for maintaining tasks appears. The correct task object is already preselected. In this case, PA for planned order. For production or process orders, the reference object is FE.

The flag is also set for “Tasks”. Possible tasks are preselected.



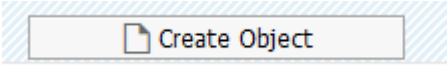
Maintenance Screen for Tasks

Select a tasks ID, for example, LMPC – Notify Purchasing. Set an end date and enter a comment.

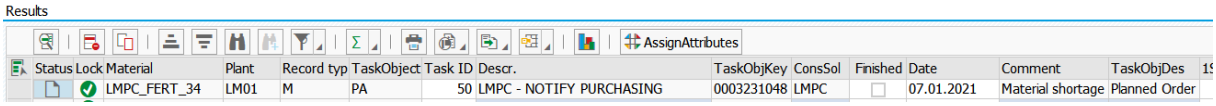


Maintain Task

Choose the button for creating a new task.



Result:



Result of Task Creation

In the lower part of the screen, you can see the task created.

There is no need to save the task since it is saved upon creation. You use the *Back* button to exit task maintenance.

Result:

Ord. Nr.	OpAc	Material	Work ctr	oTas	Num. Tasks	Task ID	Task Description	Date until finish
3231048	0010	LMPC_FERT_34	MA3		2	50	LMPC - NOTIFY PURCHASING	07.01.2021
3231068	0010	LMPC_FERT_34	MA3		0	0		

Result in ALV Grid of HJPT Planning Table

In the ALV Grid fields of the HJPT planning table, the system displays the information on the task created.

→ Remember

- Depending on the settings, the fields "Number of Tasks" and "Task ID" allow you to navigate directly to the tasks by double-clicking or by a hotspot click.
- If more than one task is maintained for each order, the first task is displayed in the fields in the ALV Grid.

The other two action codes work in a similar way. Only when you call the maintenance screen is a checkmark set for either comment or resubmission so that you are able to use these functions.

→ Tip

If you do not require such a comprehensive functionality and, for example, only want to maintain a brief text per order, it is recommended that you use the function for the LMPC order texts rather than the tasks. S_CORTXT LMPC HJPT Order Text [page 134]

For the data fields to be filled in the HJPT planning table, the data provider for the tasks must be activated. Data Provider /LMPC/CL_DP_MEASURES Configuration: Tasks, Resubmissions, Comments

Detailed documentation for the tasks can be found in the online documentation, “Comprehensive Functions”.

There, you can also find information about the configuration of tasks.

Related Information

Data Provider /LMPC/CL_DP_MEASURES Tasks, Resubmissions, Comments [page 483]
Documentation on the consulting solution **comprehensive functions**

2.6.9.17 S_MD04BF Update Buffer for MD04 Data

To save runtime, you can activate a day buffer for the MD04 data for the HJPT planning table.

Buffer for MD04 Data [page 521]

If the buffer for the MD04 data is active, the data from the transaction MD04 for the materials is updated only the first time it is called on the day.

This action code can be used to update the data continuously during the day. The action code is used for this in the program /LMPC/HJPT. Program /LMPC/HJPT Background Processing [page 26]

To ensure that the program requires as little runtime as possible in background processing, you should use a separate HJPT overall profile for which only the following three data providers are activated:

- Data Provider /LMPC/CL_DP_STD Basic Data of the Capacity Planning Table [page 497]
- Data Provider /LMPC/CL_DP_USER_002 Technical Data [page 506]
- Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data [page 451]

More data providers are not required.

The function updates the MD04 data buffer for all header materials of the orders that were loaded into the planning table. In addition, the MD04 data for all components of the orders that is displayed in the fields of the components is also read. Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data [page 451]

If the data is not required for the components, the data provider CL_DP_BOM can also be deactivated.

In background processing, no subsequent action code should be configured for the action code.

We recommend one hour as the regular interval for refreshing the data.

The action code can also be used in dialog processing if the data is to be updated manually by the user.

However, in dialog processing, the data must be reloaded after the data has been updated to update the buffers of the capacity planning table.

Two action codes can be used as the following action codes:

- Immediate reload of data with S_RELOAD. S_REFR, S_RELOAD Planning Table Update [page 409]
- Save the data with S_SAVE. S_SAVE Save Planning [page 413]

However, when you save the data, the internal buffers for the MD04 data are updated only if the parameter MD04_UPD is set in the data provider CL_DP_BED. Data Provider /LMPC/ CL_DP_BED Configuration: Requirement date

2.6.9.18 S_PLAFLT Change Long Text for Planned Order

Use

You can use this action code to change the long text for the planned order by direct entry in the ALV Grid.

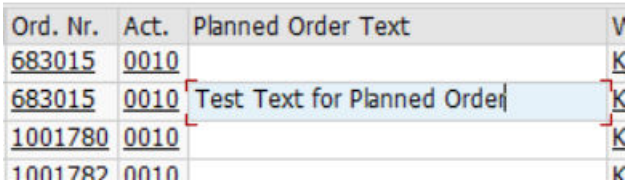
> **Note**
>
> The field for the long text for the planned order exists only in an SAP S/4HANA system.

If the field exists, it is input-enabled in the LMPC ALV Grid. For the update of the changes to work, the action code S_PLAFLT must be activated. For descriptions of these settings, see the Configuration Guide. S_PLAFLT Configuration: Change Long Text for Planned Order

Procedure

Show the field in the ALV Grid of the HJPT planning table. You can find the field in the group of fields for the planned order.

Enter a text for the desired planned order and choose Enter.



Enter Long Text for Planned Order

The text is only written to the planned order by choosing Enter.

The change is made in simulation mode. When you save, the text is posted to the database. If you exit the planning table without saving, the text is lost.

Since the text is saved at header level of the planned order, the text appears in each data record for this order after you choose Enter.

The text has a maximum length of 255 characters. The text is not language-dependent. It is always output as it was saved, regardless of the logon language.

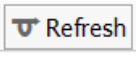
> ⓘ Note
>
> The field is always input-enabled, regardless of whether an order is a planned order, a production order, or a process order. However, the entered data can only be saved for planned orders. If the field is maintained for a production order or process order, the update routine clears the field again.

2.6.9.19 S_REFR, S_RELOAD Planning Table Update

Refreshing of Data

You can update the SAP LMPC HJPT detailed scheduling planning board at any time while you are working with it.

Two functions are available for this: Refreshing the data (S_REFR) and reloading the data (S_RELOAD).

Refresh 

(S_REFR)

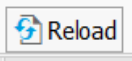
You can use the “Refresh” function to update the ALV Grid of the HJPT planning table. When you refresh, the data providers are run once and the ALV Grid is updated.

You thereby load, for example, changed data from the graphic into the ALV Grid. When you update the ALV Grid, the data records are sorted according to the defined sort sequence.

When you refresh the data, the selection of the data records in the ALV Grid is retained if the retention of the selection is activated. C16 Transaction /LMPC/STEU LMPC: Control Parameter

This action code is usually used as a subsequent action code for other functions to load the changed data into the ALV Grid. For planning functions, it is mandatory that S_REFR runs as a subsequent action code to ensure the consistency of the data.

In a regular chain of action codes, S_REFR can only be the last action code at the end of processing. Using a parameter allows a special concatenation of action codes to be created, during which the refresh also takes place once within a chain of action codes. S_REFR Configuration: Refreshing Data

Reload 

(S_RELOAD)

This function reloads the data. Unsaved planning data will be lost. You can use this function to return to the saved initial situation.

When you reload the data, the selection of the data records in the ALV Grid is lost.

Checks are performed before the data is reloaded.

The first check monitors whether changes have been made to the data that have not yet been saved.

The second check searches for external locks for the opened orders.

If one of the checks encounters an error, the user receives a message and can decide whether they want to cancel the reload of the data or whether loading is to be executed anyway. The third check is run only if the setting that the planning table is ended after saving has been set in the overall profile.

The checks can be deactivated using the parameter CHCK_OPT in the settings for the action code. Action Codes for Support Functions

If the planning table is configured in such a way that processing is ended when you save and the checks are deactivated, the planning table is exited when you execute the reload without saving the data. Also see the notes on the save options in the configuration guide. Configuration of HJPT Overall Profile

→ Tip

- Both update functions can also be executed automatically after a specific interval (autorefresh). For instructions for this, see the description of the overall profile in the LMPC Configuration Guide. Timer Function
- Filter settings set temporarily for the ALV Grid and a temporary layout selection can be retained when the data is reloaded. Settings need to be made in the HJPT overall profile for this. Configuration of HJPT Overall Profile

2.6.9.20 S_RESSIZ Open or reset all HJPT dialog boxes

Reset all Dialog Boxes of Planning Table

The LMPC HJPT planning table can display the data distributed across several windows. A distinction is made between the main window and the dialog box.

The graphic is located in the main window of the HJPT planning table.

Dialog boxes are all additional windows outside the main window.

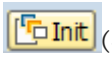
The ALV Grid with the data on the orders, the window for charts, or the window for completed production and process orders can be displayed in separate dialog boxes.

The settings of the HJPT overall profile determine which elements are displayed in the main window and which elements are displayed in dialog boxes. HJPT Window Configuration

When you save the data in the HJPT planning table, the current positions and sizes of the dialog boxes are saved depending on the user name and profile name of the LMPC overall profile. The position is always saved in relation to the upper left corner of the main screen currently being used by the user. The main screen refers to the user's physical screen on which the main window of the planning table is located. When you save, the planning table also remembers whether a window has been closed. In future, this window will then no longer be opened when you access the planning table.

When you reload or access the planning table again, the system displays the dialog boxes in the size and position last saved by the user.

This ensures that the next time you open the HJPT planning table, the user can find the usual window settings.

If windows were closed, the action code 

(S_RESSIZ) can be used.

Depending on the setting, the action code opens the windows or resets them. S_RESSIZ, S_RES_CV Configuration: Opening and Resetting Windows

If it is set to open, all windows of the LMPC HJPT planning table are opened in the last saved position in the last saved size.

If it is set to reset, all dialog boxes of the LMPC HJPT planning table are reset to their size configured in Customizing. All windows are then positioned at the top left of the screen in which the main window of the LMPC HJPT planning table is located.

If users work with two screens and the windows of the HJPT planning table are positioned on different screens, the recommendation is to place the action code as a function on the menu bar of the ALV Grid and include it as a function in the menu bar of the graphic. This means that the function can be executed on any screen and the windows can be reset from any screen. Action Code Trigger

This is particularly recommended if users work at different work centers with different screens. This is because a window may be displayed outside the visible area if it was previously saved with a different number of screens or a different screen resolution. In this case, the action code must be configured for resetting. Users can then use the action code to show the windows again.

> → Tip
>
> You can use the parameter settings to define which dialog boxes are to be opened or reset. The standard system is configured such that all dialog boxes are opened.
>
> The action code S_RES_CV is a special variant for the window for charts. S_RES_CV only opens the window for charts. S_RES_CV Open or Reset HJPT Window for Charts [page 412]

2.6.9.21 S_RES_CV Open or Reset HJPT Window for Charts

Opening the LMPC HJPT Capacity Chart

Use

This action code is used if the window for charts is used in dialog mode.

While working with the HJPT planning table, you can change the size of the window for the charts. When you save, the planning table remembers the size and position of the window. The size and position are saved for each user and HJPT overall profile for the user's screen currently used.

If you close the window and then save, the planning table remembers that the window has been closed and no longer displays it the next time you start the planning table.

You can use the action code Chart (S_RES_CV) to either open or reset the window, depending on the configuration. S_RESSIZ, S_RES_CV Configuration: Opening and Resetting Windows

When opened, the window opens in the last saved position in the last saved size.

During reset, the window for the charts is reset to the size defined for the window in the settings and it is positioned at the top left of the screen in the first level above the main window that may also be there.

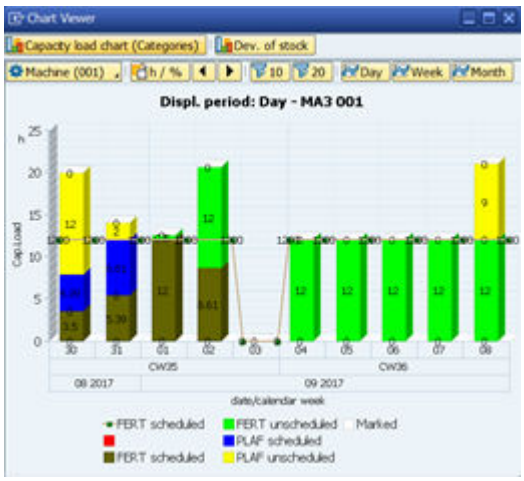
If users are working on different screens, it is recommended that you use the reset function since it may happen that a window is opened outside the visible area.

> → Tip
>
> Reloading the data with the action code S_RELOAD also allows you to retrieve the window if the window was open the last time you saved.
>
> S_REFR, S_RELOAD Planning Table Update [page 409]

Procedure

Execute the action code Chart (S_RES_CV).

Result:



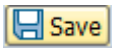
Capacity Chart

The window for the charts opens up.

> → Tip
>
> There is another action code, S_RESSIZ, which opens or resets the window for charts and all dialog boxes in the HJPT planning table.S_RESSIZ Open or reset all HJPT dialog boxes [page 410]

2.6.9.22 S_SAVE Save Planning

Saving in the LMPC Planning Table

The action code 

(S_SAVE) is a follow-on action code attached to other action codes so that an automatic save is executed after the respective LMPC function. In the case of a chaining of action codes, S_SAVE must always be used as the last action code. Concatenation with S_SAVE [page 426]

S_SAVE can also be used as a standalone action code, for example, to trigger saving via the ALV Grid buttons for separate screens.

It can be used as an ALV Grid button or as a right-click function of the capacity planning table.

Application options:

- Dispatch and save immediately.
- Deallocate and save immediately.
- Additional button for saving the data above the ALV Grid.

There are two save functions for the HJPT planning table. A save with reduced runtime (default) that receives the buffers of the data providers, and a save that executes a complete reload of the data. The save function is selected using the HJPT overall profile. Configuration of HJPT Overall Profile

> ⚠ Restriction
>
> The action code works only as a follow-on action code for other action codes or as a standalone action code. It does not work as an action code in an action code chain between 2 action codes. Neither is it possible to add another action code as a follow-on action code after the action code S_SAVE. So, the action code is either alone or the last function in a chain.

> → Tip
>
> The action code S_SAVEI can be used to save data temporarily. S_SAVEI Save Temporarily [page 413]

2.6.9.23 S_SAVEI Save Temporarily

For some planning processes, it may be necessary to save interim planning statuses. However, the standard save routine requires a long runtime for updating the data of production orders and process orders, which means that it takes some time before you can continue working with the data after saving.

The action code 

(S_SAVEI) provides the option of accelerating temporary saving.

You can use settings for the action code to deactivate various update routines for temporary saving if this data is not required for further planning. This helps to save runtime when saving temporarily. S_SAVEI Configuration: Temporary Saving

You can deactivate the following updates for production orders and process orders:

- Check of project budgets
- Costing
- Classification
- Scheduling
- Update of sales documents.
- Changing long texts

Which of these updates are deactivated depends on the planning requirements and must be set individually for each system. LMPC consulting can support you with the settings.

It is not possible to influence the update of planned orders. This is always complete.

This action code cannot replace the standard save routine. Before you exit the planning table, you must execute the standard save to update the orders completely. If you try to exit the planning table without performing the standard save, the system issues a warning.

> ⚠ Caution
>
> If only temporary saving is carried out and the planning table is exited without saving with a complete update, data inconsistencies may occur.

Production orders and process orders that were marked as changed before saving are marked as changed again after the save operation using S_SAVEI. In this way, the planning table receives information about which orders still have to be updated completely.

The locks for the production and process orders are also retained. Data Provider /LMPC/CL_DP_ENQUEUE Order Locks (Icon) [page 474]

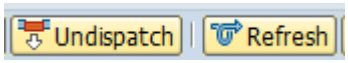
The update cannot be restricted during standard saving. However, there are two standard save functions that have different runtime requirements. S_SAVE Save Planning [page 413]

> → Tip
>
> If the planning table is configured to close when you save, you can use the temporary save function to save intermediate statuses. Temporary saving is then executed as if the default save option were configured (save option 1). Configuration of HJPT Overall Profile

2.6.9.24 S_SEP Separator

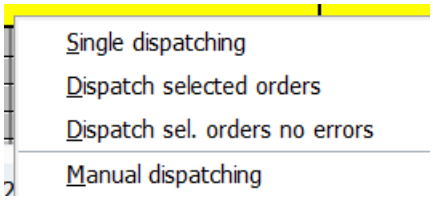
Separator for LMPC HJPT Action Codes

The action code S_SEP is used to group the pushbuttons in the ALV Grid bar. It generates a vertical separator between the ALV Grid pushbuttons.



Example Separator Between Two Pushbuttons

It can also be used to create a horizontal separator in the context profiles or in the dropdown action code pushbuttons on the ALV Grid menu bar.



Example of a Separator in a Context Profile

> ⓘ Note
>
> The name of the action code is predefined. The insertion of separators using the context profile will only work if the name of the action code is S_SEP. Other names are not possible.

> → Tip
>
> If there are more pushbuttons than fit in a row, the ALV Grid inserts a break automatically and displays the pushbuttons in a further row. The break is at the separators. If you use a lot of pushbuttons, it is recommended that you insert a few more separators. This enables more even distribution of the pushbuttons when the screen width changes.

2.6.9.25 S_SORT Reset Sorting of Planning Table and ALV Grid

Initialize Sorting

Use

This function updates the sorting of the graphic and the sorting of the ALV Grid.

If you are working with the three-part graphic and have deactivated the automatic sorting of the graphic in the HJPT overall profile, the processed operations are always placed at the end of the list during dispatch or deallocation. This is done regardless of when the operation is scheduled.

The action code S_SORT can be used to trigger a sorting of the elements of the graphic.

Another use case is sorting the ALV Grid. If you have used drag and drop to put the operations in the ALV Grid in a new order and want to reset the sorting to the sorting set in the layout, you can also call the action code S_SORT.

The sorting of the graphic and the sorting of the ALV Grid are also executed by refreshing the data. Therefore, you can also execute the action code S_REFR instead of the action code S_SORT. S_REFR, S_RELOAD Planning Table Update [page 409]

However, the action code S_REFR also causes a run of the entire data provider. Therefore, S_SORT is an alternative for sorting, which requires less runtime.

→ Tip

If you are looking for an option for sorting the data records in the ALV Grid, you can use the action code S_SETSEL, which can also sort the data records in addition to a selection. S_SETSEL Select and Sort Operations Automatically [page 345]

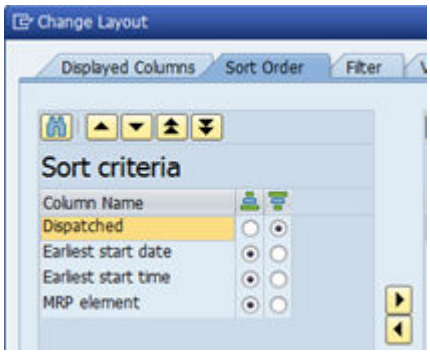
Procedure

Execute the action code 

(S_SORT). It is not necessary to select the data records.

Result: The elements in the graphic were sorted again and the data records in the ALV Grid were sorted in the sequence defined in the layout settings.

Example of LMPC HJPT sort settings in the layout:



Sorting

⚠ Restriction

The ALV Grid is sorted as it is set in the ALV Grid at this point in time. Note that this does not mean that sorting is reset to the sort settings saved for the layout. If you change the sort settings in the layout settings while working in the HJPT planning table, these are the valid settings, regardless of which sort settings are saved for the layout. This action code does not return the sort order to a sort setting that was saved in the layout, but only to the sort order currently set in the layout.

2.6.9.26 S_SVDBF Save Data to Database Tables

Save Data

You can use this action code to save values from the SAP LMPC HJPT detailed scheduling planning board in database tables directly. Currently, this is possible for the tables AFKO, PLAF, and /LMPC/CORDTEXT. Further tables can be reached by an extension option via a BAdI.

For tables AFKO and PLAF, values are stored only in the database buffer. If you exit the LMPC HJPT planning table without saving or reloading, your changes will be lost.

The action code was developed to fill customer fields (Z fields) in standard tables.

⚠ Caution

Theoretically, you can also change the content of all other fields of a database table. It should be noted that standard fields should be changed with caution. When standard SAP fields are changed, the customer is

responsible for the consistency of the data. The HJPT planning table has not installed any checks for data consistency. It should also be noted that check routines for correct value entries may be behind individual standard fields, which prevents saving. This is not an error, it is a defensive mechanism in the standard system that cannot be bypassed.

Related Information

S_SVDBF Configuration: Storing Data in Database Fields

2.6.9.27 S_SVOPDT Save Operation Dates

Use

You can use this action code to write the current start and end times of the operations in separate fields. These fields are saved when you save, and are filled with the saved dates when the data is reloaded.

This function can be used to save operation dates for a later comparison. For example, you want to compare the dates that were specified in planning with the later actual production dates.

> **Note**
>
> When you use this action code, the data provider CL_DP_OP_ADD must be activated. Data Provider / LMPC/CL_DP_OP_ADD Additional Data for Operations [page 486]

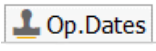
Procedure

Initial situation: Several operations are dispatched. The dispatching dates are to be saved.

To do this, the operations whose dispatching dates are to be saved are selected.

Al.	Lock	Frmd	HJPT firm.	Dispatched	Ord. Nr.	OpAc	Material	Work ctr	Description	Op. Qty	UoM	Sv.St.Date	Sv.St.Time	Sv.E.Date	Sv.E.Time	OpDates sv	Latest start	Lat.st.tme	Latest finish	Lat.finish
		X		X	3350509	0010	LMPC_HALB_12	MA1	LMPC wst 1	24	PC		00:00:00		00:00:00		29.11.2022	13:07:08	30.11.2022	07:37:08
		X		X	3350687	0010	LMPC_HALB_12	MA1	LMPC wst 1	22	PC		00:00:00		00:00:00		30.11.2022	07:37:08	30.11.2022	13:47:08
		X		X	3350697	0010	LMPC_HALB_12	MA1	LMPC wst 1	22	PC		00:00:00		00:00:00		30.11.2022	13:47:08	01.12.2022	07:57:08
					60009169	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	6	PC		00:00:00		00:00:00		01.12.2022	14:30:00	01.12.2022	18:00:00

Selection of Operations

Execute the action code 

(S_SVOPDT).

Result:

Al.	Lock	Frmd	HJPT firm.	Dispatched	Ord. Nr.	OpAc	Material	Work ctr	Description	Op. Qty	UoM	Sv.St.Date	Sv.St.Time	Sv.E.Date	Sv.E.Time	OpDates sv	Latest start	Lat.st.tme	Latest finish	Lat.finish
		X		X	3350509	0010	LMPC_HALB_12	MA1	LMPC wst 1	24	PC	29.11.2022	13:07:08	30.11.2	07:37:08	29.11.202	29.11.2022	13:07:08	30.11.2022	07:37:08
		X		X	3350687	0010	LMPC_HALB_12	MA1	LMPC wst 1	22	PC	30.11.2022	07:37:08	30.11.2	13:47:08	29.11.202	30.11.2022	07:37:08	30.11.2022	13:47:08
		X		X	3350697	0010	LMPC_HALB_12	MA1	LMPC wst 1	22	PC		00:00:00		00:00:00		30.11.2022	13:47:08	01.12.2022	07:57:08
					60009169	0010	LMPC_JOINTPR_1	MA1	LMPC wst 1	6	PC		00:00:00		00:00:00		01.12.2022	14:30:00	01.12.2022	18:00:00

Result

The current operation dates were copied to the fields for saving the operation dates.

The data is processed in simulation mode. The system does not write the values to the database until you save the data. Reloading data without saving may cause the data to be discarded.

The saved data is retained for one year and is then deleted automatically.

> ⓘ Note
>
> The capacity requirements of the operations have dates for the earliest and latest dates. The distribution key specifies whether the earliest or latest date is used. Depending on the setting of the distribution key, the earliest or latest date of the capacity requirements is transferred to the fields.

2.6.9.28 S_WPFLT Work Center Filter

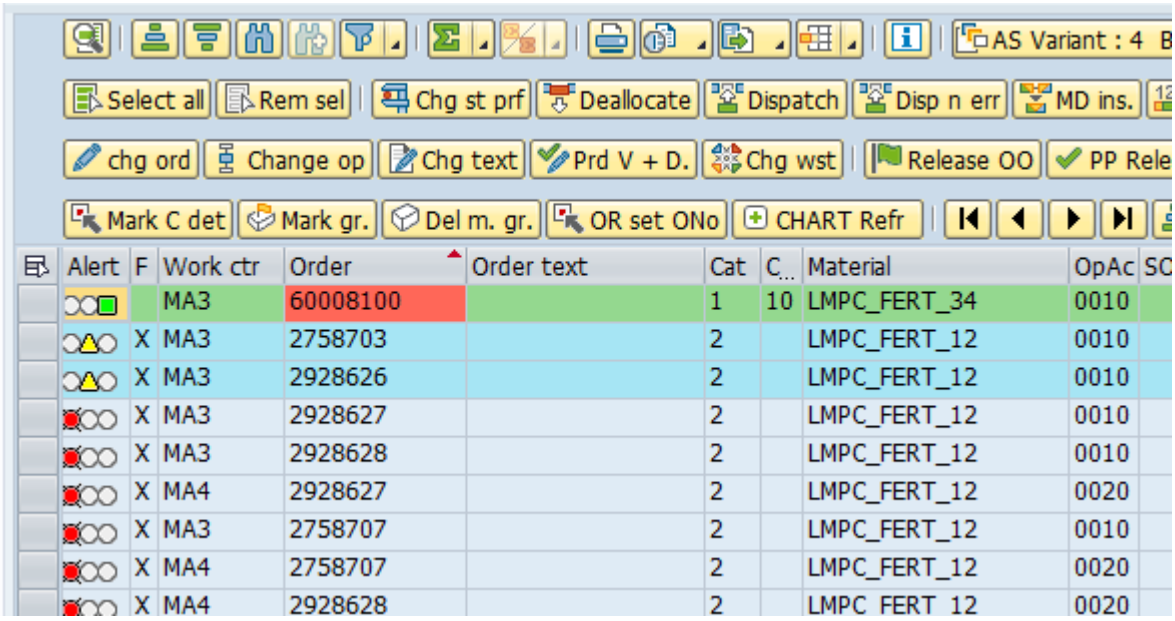
Filtering Data by Work Center

In addition to the generic filter functions of the ALV Grid, there is also action code S_WPFLT for filtering on work centers. You can use this function to filter the data records in the ALV Grid for a single work center. All data records of other work centers are then hidden.

> ⚠ Caution
>
> - The selected work center filter is saved with reference to the used HJPT overall profile and user name, so that this filter is automatically set again when the LMPC planning table is accessed later.
> - The filter only influences the ALV Grid. All order operations are still displayed in the graphic.
> - If a work center filter is set, only the data records for other work centers are removed from the display of the ALV Grid. However, all data records are processed in the background using the data provider. Setting the work center filter does not reduce the runtime.
> - In the LMPC work center filter, the data records are removed from the internal tables for the display in the ALV Grid. However, with the generic filter function of the ALV Grid, the data records are only hidden. They still exist in the internal tables.
> - When using the work center filter, all data records for work centers other than the selected work center are removed from processing for Action Codes. Action Codes can therefore only process the data records that belong to the selected work center.
> - This function should be used with caution. It is only useful for small to medium data volume. This function should not be used to call the HJPT planning table with a plant selection so that you can set a filter for each work center for processing. This is possible, but is not recommended explicitly by LMPC development because an unnecessary volume of data is loaded. If you enter a plant selection in the HJPT planning table, this can result in very long runtimes. Long runtimes for a large data selection are not a performance problem; this is normal runtime behavior.
> - It is recommended that you use the HJPT auto start function Transaction /LMPC/HJPT_AS LMPC HJPT Planning Table Autostart [page 21] instead of the work center filter. Here, you can also switch between different work centers. However, only the amount of data that is actually required is loaded at the time of the auto start.

Example

Data records have been loaded for 4 work centers:

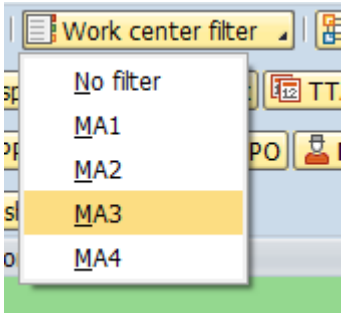


Alert	F	Work ctr	Order	Order text	Cat	C...	Material	OpAc	SC
		MA3	60008100		1	10	LMPC_FERT_34	0010	
	X	MA3	2758703		2		LMPC_FERT_12	0010	
	X	MA3	2928626		2		LMPC_FERT_12	0010	
	X	MA3	2928627		2		LMPC_FERT_12	0010	
	X	MA3	2928628		2		LMPC_FERT_12	0010	
	X	MA4	2928627		2		LMPC_FERT_12	0020	
	X	MA3	2758707		2		LMPC_FERT_12	0010	
	X	MA4	2758707		2		LMPC_FERT_12	0020	
	X	MA4	2928628		2		LMPC_FERT_12	0020	

Example Work Center Filter Initial Situation

The planner wants to work only with the data records for work center MA3.

Selection of Work Center Filter:



Selection of Work Center Filter

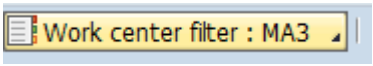
Result:

Alert	F	Work ctr	Order	Order text	Cat	C...	Material	OpAc
		MA3	60008100		1	10	LMPC_FERT_34	0010
	X	MA3	2758703		2		LMPC_FERT_12	0010
	X	MA3	2928626		2		LMPC_FERT_12	0010
	X	MA3	2928627		2		LMPC_FERT_12	0010
	X	MA3	2928628		2		LMPC_FERT_12	0010
	X	MA3	2758707		2		LMPC_FERT_12	0010

Work Center Filter Result

Only order operations for this work center are displayed.

The button for the work center filter displays the work center:



Active Work Center Filter

You can use the settings for the action code to influence the labeling and display of the filter. S_WPFLT Configuration: Work Center Filter

2.6.9.29 S_XBR Create Report Folder

Evaluate LMPC HJPT Data in Excel

Application

With this action code, the data from the ALV Grid of the LMPC HJPT planning table can be loaded into an Excel report folder . Using this report folder the data can then be evaluated.

In the standard delivery, the user chooses the directory on the local computer, to which the report folder is saved. However, the action code can also be configured in such a way that the report folder is stored on a network drive or sent by e-mail in the background. This makes it possible to create and send a report automatically by means of a background job.

Procedure

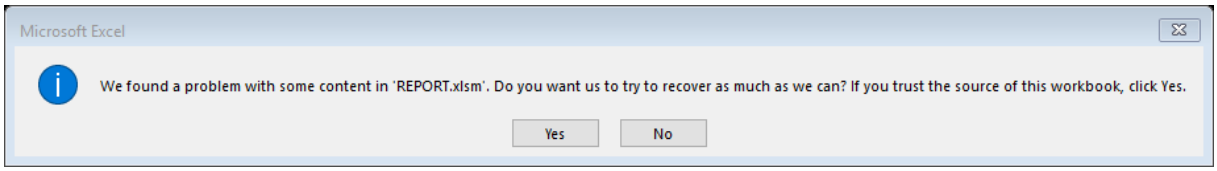
Call the action code 

(S_XBR) using the button in the ALV Grid of the LMPC planning table.

The system displays a dialog box that you can use to specify the storage location for the Excel file created.

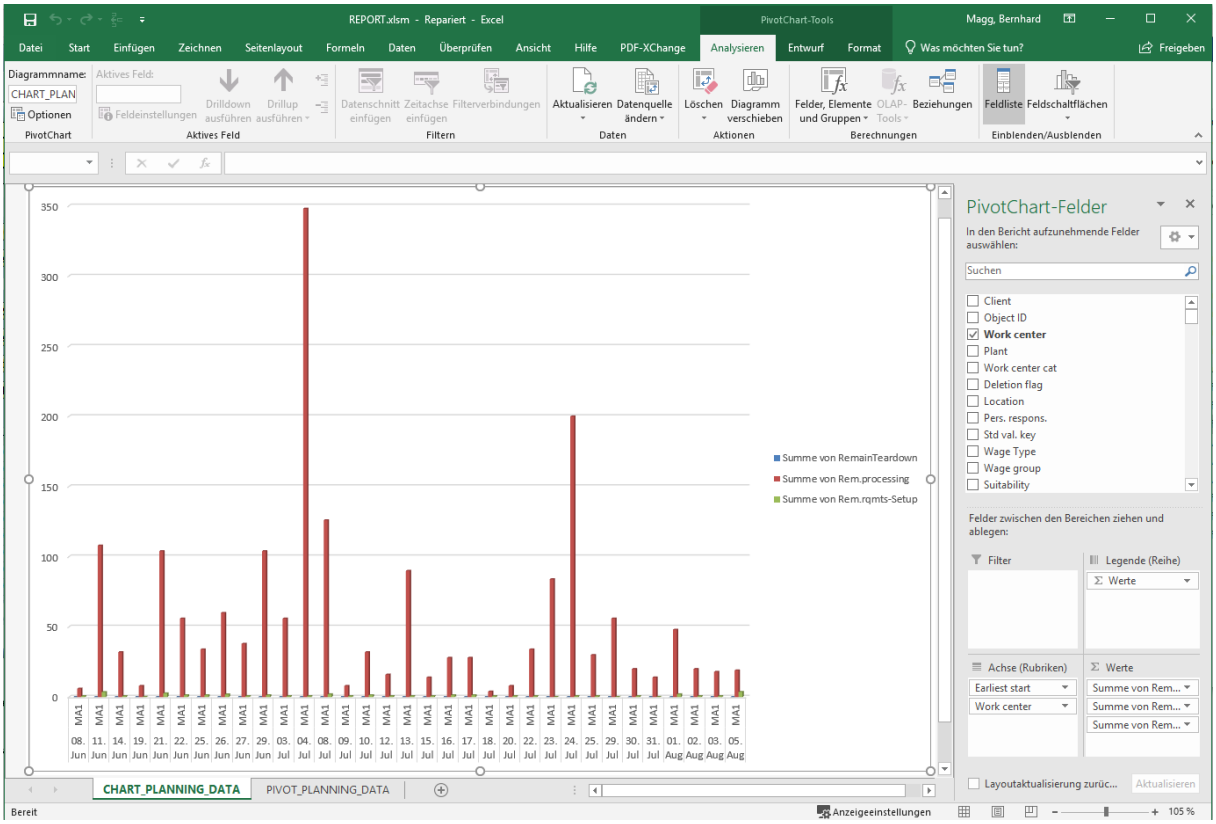
Once you have saved the Excel document, you can access it.

Since the ALV Grid of the LMPC HJPT planning table has more than 612 columns, Excel must still “process” the file internally. Therefore, the following message must be confirmed:



Excel Message

This happens automatically when the message is confirmed. You may have to activate macros if necessary.



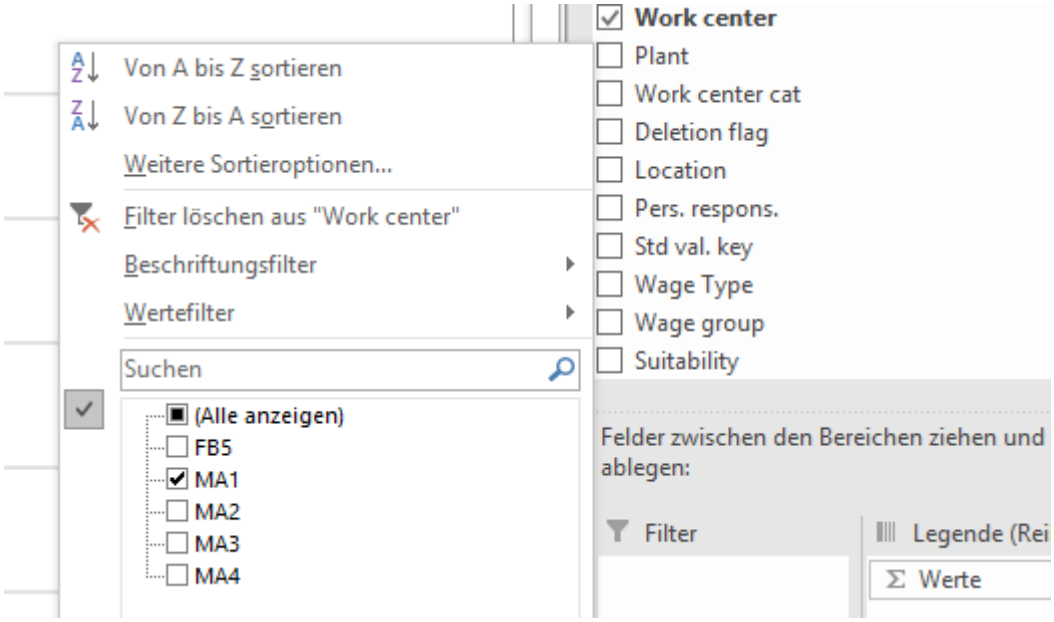
Report Folder View Berichtsmappe = Report Folder

This is the standard book of reportsthat is delivered with the SAP LMPC HJPT detailed scheduling planning board. Additional books of reports can be created in Customizing . Depending on your requirements, you can define a different row and column selection in Customizing.

In the standard system, the book of reports displays the capacity requirement per work center per day. This is an Excel PivotChart

You can use the fields on the right margin to change the values according to which the data is aggregated and displayed.

For example, a filter can be set to only one work center to display the data for only one work center:



Selection of a Filter

Related Information

S_XBR Configuration: Create Report Folder

2.6.10 Concatenating Action Codes

Using Customizing for the LMPC HJPT planning table, it is possible to form chains of action codes. A concatenation of action codes means that several action codes are executed automatically one after the other. To do this, the user only has to trigger the first action.

Most of the action codes in the standard delivery are already concatenated. As a rule, an action code contains the subsequent action code S_REFR for updating the data.

The concatenation of action codes cannot be chosen freely. It must be checked individually for each concatenation whether it is possible.

The action codes are executed one after the other in the configured sequence. Usually, each action code is executed independently of the preceding action code. Each action code receives the selected operations from the ALV Grid. It is like manually executing the action codes individually, one after the other, with the same selection of operations.

Individual action codes differ from this processing. They transfer a selection of operations as a return. For these action codes, the transferred selection becomes the new selection for the subsequent action code.

The following action codes return a selection:

- S_CASORT Sort Upwards [page 338]
- S_CORTXT LMPC HJPT Order Text [page 134]

- S_CRORD Create Simulative Order [page 156]
- S_D&D_MO
- S_L--, S_L-, S_L+, S_L++, Moving Rows within the ALV Grid [page 400]
- S_MALV Selecting Operations in ALV Grid [page 340]
- S_PBLKFG Pool formation with BOM information [page 296]
- S_PCONV Partial Conversion of Planned Orders with Subsequent Dispatching [page 167]
- S_SARBFV Change of Work Center for Operations by Changing the Production Version [page 175]
- S_SETSEL Select and Sort Operations Automatically [page 345]
- S_SVDBF Save Data to Database Tables [page 416]

Although these action codes return a selection, this does not mean that these action codes are suitable for concatenation. If required, this must be checked separately for each use case. These action codes are listed here for information purposes only.

The following describes the concatenations that are released and are therefore also covered by consulting support.

- Concatenation with S_BOMEXP [page 423]
- Concatenation with S_CHSDV [page 424]
- Concatenation with S_CRORD [page 424]
- Concatenation with S_SETSEL [page 426]
- Concatenation with S_REFR [page 425]
- Concatenation with S_RELOAD [page 425]
- Concatenation with S_SAVE [page 426]

> **Note**
>
> If you want to use concatenations that have not been released, you can request a review from LMPC consulting. Concatenations that are not described in the documentation are not covered by consulting support.

Related Information

Configuration of HJPT Action Codes

2.6.10.1 Concatenation with S_BOMEXP

S_BOMEXP as a Subsequent Action Code

If operations in the planning period are rescheduled to a new start time, the BOMs may have changed on the new start date.

However, when you reschedule operations, the BOM of orders is not exploded.

For this reason, an option has been created for a new BOM explosion for planned orders. This BOM explosion is carried out with the action code S_BOMEXP.

To ensure that the BOM explosion is performed automatically when dispatching planned orders, the action code S_BOMEXP can be combined with planning functions.

The combination of S_BOMEXP with the function for manual planning has been examined and released by LMPC development.

Further combinations with other planning functions have not been examined and are therefore not supported.

In general, you can assume that only a combination with planning functions is useful, which does not read any operations. This is because the BOM explosion is executed only for the operations in the selection.

For details combining S_BOMEXP with S_MANP, see the documentation for S_BOMEXP. S_BOMEXP Bill of Material Explosion and Component Quantity Update for Planned Orders [page 123]

2.6.10.2 Concatenation with S_CHSDV

S_CHSFV as Previous and Subsequent Action Code

You can use the action code S_CHSDV to change the standard values of operations.

You can also set the action code in such a way that all operations are reset to the values from the routing in the background.

In this setting, the action code S_CHSDV can be combined with the action S_APSEL for deallocating operations. It is irrelevant whether S_APSEL or S_CHSDV is executed first.

This combination has the effect that when operations are deallocated, they are reset to the original standard values.

S_CHSDV Change Standard Values [page 128]

S_APSEL Deallocate Selected Operations [page 185]

Other possible concatenations:

S_CHSDV can be combined with S_CRCLOR and S_FIX: Concatenation with S_CRORD [page 424]

S_CHSDV can be combined with S_SETSEL. Concatenation with S_SETSEL [page 426]

> **Note**
>
> Combinations of S_CHSDV with other action codes were not examined and are not supported. If you are interested in a combination with other action codes, you can request a feasibility analysis.

2.6.10.3 Concatenation with S_CRORD

S_CRORD in Connection with a Subsequent Action Code.

The action code S_CRORD allows the creation and immediate dispatching of production orders or process orders in the simulation. S_CRORD Create Simulative Order [page 156]

This action code can be linked with the action code for changing standard values.

This means that new orders can be created and the standard values of the operations can be adjusted immediately during creation. S_CHSDV Change Standard Values [page 128]

Further concatenation with the action code for firming orders is also possible. S_FIX, S_FIXE Firm and remove firming of orders [page 395]

This means that orders can be created in one step and firmed immediately to prevent these operations from being rescheduled.

A chain of S_CRORD with S_CHSDV and S_FIX is also possible. For this concatenation, S_FIX must be entered as the last action code. Once the firming indicator has been set, changes to the operations are no longer possible.

2.6.10.4 Concatenation with S_REFR

S_REFR as a Subsequent Action Code

Most action codes have the action code S_REFR as the subsequent action code, to update the data in the ALV Grid after an action.

The action code S_REFR is always used as the last action code in a chain of action codes. S_REFR, S_RELOAD Planning Table Update [page 409]

Exception: You can use a parameter of the action code S_REFR to call the action code S_SETSEL as a subsequent action code. S_REFR Configuration: Refreshing Data

2.6.10.5 Concatenation with S_RELOAD

S_RELOAD as a Subsequent Action Code

Some action codes have a concatenation with the reload of the data (S_RELOAD). If planned orders are converted to production orders or process orders, the data must then be reloaded to load the newly generated orders into the planning table.

The action code S_RELOAD must always be used as the last action code in a chain.

> → Remember
>
> When you reload the data, the unsaved planning statuses are lost. If you want to avoid this, use the action code S_SAVE as an alternative.

Related Information

S_REFR, S_RELOAD Planning Table Update [page 409]

2.6.10.6 Concatenation with S_SAVE

S_SAVE as a Subsequent Action Code.

If you want the result to be saved immediately after an action is executed, you can use the action code S_SAVE as a subsequent action code.

The action code S_SAVE must always be used as the last action code in a chain of action codes. This is because the planning table is restructured when you save.

Related Information

S_SAVE Save Planning [page 413]

2.6.10.7 Concatenation with S_SETSEL

S_SETSEL in Connection with a Subsequent Action Code.

The action code S_SETSEL can be used to sort and select operations automatically. S_SETSEL Select and Sort Operations Automatically [page 345]

This selection can be passed on to the subsequent action code in the case of concatenation.

You can use concatenation to automate functions in dialog processing. The planner no longer has to find the operations that are to be processed. The functions search for the operations themselves and determine the processing sequence themselves.

> → Tip
>
> For LMPC HJPT background processing, this can be used to define which operations are processed and in which sequence. Without concatenation, background processing processes all operations in chronological order. Program /LMPC/HJPT Background Processing [page 26]

However, this is only useful for action codes that do not make their own selection and sorting. Some action codes have their own selection and sort routines.

The action codes that are listed in the allowlist can be combined with the action code S_SETSEL. The action codes that are listed in the blocklist can either not be combined or can only be combined with restrictions. These are action codes that have their own selection or that read operations. All action codes that are not listed have not been checked.

> ⓘ Note
>
> If you want to perform a check for a combination, you can request this from LMPC consulting.

Allowlist

- S_AK02 Change Order [page 116]

- S_APSC Deallocate via Status Change Without Scheduling [page 182]
- S_APSCG Deallocate Selected Operations and Close Gaps [page 183]
- S_APSEL Deallocate Selected Operations [page 185]
- S_ATP ATP Check in Mass Processing [page 349]
- S_ATPPIO ATP Check and Order Conversion [page 351]
- S_AVRR Change Setup Time Manually [page 108]
- S_AVRU Adjust Setup Time Automatically [page 111]
- S_BMATXT Change Material Basic Data Text [page 382]
- S_BOMEXP Bill of Material Explosion and Component Quantity Update for Planned Orders [page 123]
- S_CASORT Sort Upwards [page 338]
- S_CHSDV Change Standard Values [page 128]
- S_CO24 Missing Parts Info System [page 363]
- S_CONVPI Mass Conversion of Planned Orders to Process Orders [page 353]
- S_CONVPP and S_CONVPL Mass Conversion of Planned Orders to Production Orders [page 354]
- S_COOIS Information System for Production Orders [page 355]
- S_COOISP Information System for Process Orders [page 356]
- S_CORTXT LMPC HJPT Order Text [page 134]
- S_COUNT Counting ALV Grid Data Records [page 384]
- S_CPCHCK Check of Requirement Dates for Components of an Order [page 386]
- S_CPV2 Change Production Version and Dispatch [page 135]
- S_CRCLOR Create LMPC Cleaning Orders [page 138]
- S_DELPLA Deleting Planned Orders [page 161]
- S_EPMSQ Dispatching According to Material Master Field [page 198]
- S_EPRSIN Insert Setup Optimum Operation [page 266]
- S_EPRST Dispatching Using Setup Matrix [page 264]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_E_TBSQ Assign Number by Table [page 220]
- S_EPTBSQ Dispatch by Table [page 222]
- S_FILTR, S_FILTRE Set and Remove Filters [page 388]
- S_FIX, S_FIXE Firm and remove firming of orders [page 395]
- S_SARBPL and S_HARBPL Change the Work Center for Operations of Production and Process Orders [page 172]
- S_L--, S_L-, S_L+, S_L++, Moving Rows within the ALV Grid [page 400]
- S_LOCK Temporarily Lock Orders [page 402]
- S_MAGR, S_MAGRD Selecting Orders in the Graphic, Removing the Selection [page 339]
- S_MANP Manual Dispatching [page 233]
- S_MARKER Set and Remove Marking [page 341]

- S_MFREI Mass Release of Orders [page 356]
- S_MVEORD Move Order Operations in the Pool [page 237]
- S_OPL Optimized Dispatching [page 268]
- S_ORDCLM Completing Production Orders Technically in Mass Processing [page 165]
- S_OSC Optimum Adjustment of Setup Times [page 115]
- S_PHCH Change of Duration of a Phase in Process Order [page 169]
- S_PLOSS Enter Production Scrap in Order [page 171]
- S_RBPL Rule-Based Dispatching [page 240]
- S_SARBFV Change of Work Center for Operations by Changing the Production Version [page 175]
- S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]
- S_SHFTPP Shift Production Plan [page 258]
- S_SVDBF Save Data to Database Tables [page 416]
- S_XBR Create Report Folder [page 420]

Blocklist

Action Code / Function	Remark
S_AK05 Displaying an Order [page 119]	Concatenation not possible. Single selection only, no multiple selection.
S_APALL Deallocate All Operations [page 181]	Concatenation not possible. Action code has its own selection.
S_APSELP Deallocate with Pool ID [page 295]	Concatenation is only possible with restrictions. Action code independently reads all operations that have the same pool ID that is already contained in one of the operations of the selection.
S_ATPA Individual Availability Check [page 350]	Concatenation not possible. Single selection only, no multiple selection.
S_AUTEXT Change the Long Text of Production Orders and Process Orders [page 119]	Concatenation not possible. Single selection only, no multiple selection.
S_AV02 Changing Operations of the Production Order or Process Order [page 120]	Concatenation not possible. Single selection only, no multiple selection.
S_AV06 Dispatching Operations Individually [page 187]	Concatenation not possible. Single selection only, no multiple selection.
S_AV07 Deallocating Operations Individually [page 188]	Concatenation not possible. Single selection only, no multiple selection.
S_AV77 Change Network [page 122]	Concatenation not possible. Single selection only, no multiple selection.
S_C203 Display Master Recipe [page 359]	Concatenation not possible. Single selection only, no multiple selection.

Action Code / Function	Remark
S_C223_D Display Production Version [page 360]	Concatenation not possible. Single selection only, no multiple selection.
S_CM01 Overview of Capacity Planning [page 360]	Concatenation not possible. Single selection only, no multiple selection.
S_CO11N Entering Time Tickets [page 361]	Concatenation not possible. Single selection only, no multiple selection.
S_CO15 Enter Production Order Confirmation [page 362]	Concatenation not possible. Single selection only, no multiple selection.
S_CO40 Conversion of Planned Order to Production Order [page 364]	Concatenation not possible. Single selection only, no multiple selection.
S_COR5 Releasing Individual Process Orders [page 365]	Concatenation not possible. Single selection only, no multiple selection.
S_COR7 Creating Process Orders [page 366]	Concatenation not possible. Single selection only, no multiple selection.
S_CR03 and S_CRC3 Display Work Center or Resource [page 367]	Concatenation not possible. Single selection only, no multiple selection.
S_CS03 Display BOM [page 367]	Concatenation not possible. Contradicts the dispatching process.
S_D&D Dispatching Operations with Drag and Drop in the ALV Grid [page 189]	Concatenation not possible. Contradicts the dispatching process.
S_DINFO Detailed Information for Graphical Bars [page 393]	Concatenation not possible. Contradicts the dispatching process.
S_DMOORD Create Planned Orders for Tests [page 161]	Concatenation not possible. No selection.
S_EPALL Dispatch All Operations [page 192]	Concatenation not possible. Action code has its own selection independently of user selection.
S_EPALV Dispatching by Entering Dates in the ALV Grid [page 194]	Concatenation not possible. No selection.
S_EPBKFG Two-Step Dispatching with Pool ID [page 300]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPFX Dispatching Across Firmed Operations [page 328]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPML Multilevel Planning [page 323]	Concatenation is only possible with restrictions. Action code reads operations independently.

Action Code / Function	Remark
S_EPNP Dispatching Operations of Networks [page 202]	Concatenation not possible. Single selection only, no multiple selection.
S_EPPRLL Parallel Planning with Parallel Sequences [page 287]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPPRLP Parallel Dispatching with Pool ID [page 280]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPRQD Dispatch on Requirement Date [page 205]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPSELL Dispatching with Check on Gaps and Pool Orders [page 210]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPSELP Single-Level Dispatching with Pool ID [page 293]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_EPSELX Dispatching Insert in Gaps with and Without Pool Orders [page 212]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_FPL Dispatch by LMPC Timetable [page 223]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_IW31 Creating Maintenance Orders [page 368]	Concatenation not possible. Single selection only, no multiple selection.
S_MALL, S_RMALL Select All Operations in ALV Grid and Remove Selection [page 338]	Concatenation not possible. Action code makes selection itself.
S_MANPL Manual Dispatching List with Gap Check [page 235]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_MANPLX Manual Dispatching with Insert [page 237]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_MB11 Displaying Pegged Requirements [page 163]	Concatenation not possible. Single selection only, no multiple selection.
S_MB51 Material Document List [page 372]	Concatenation not possible. Single selection only, no multiple selection.
S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]	Concatenation not possible. Single selection only, no multiple selection.
S_MD04 Stock/Requirements List [page 373]	Concatenation not possible. Single selection only, no multiple selection.
S_MD4C Order Report [page 374]	Concatenation not possible. Single selection only, no multiple selection.

Action Code / Function	Remark
S_MIGO Goods Movements [page 375]	Concatenation not possible. Single selection only, no multiple selection.
S_MM03 Displaying Material Master Data [page 376]	Concatenation not possible. Single selection only, no multiple selection.
S_MMBE Displaying Material Stock [page 377]	Concatenation not possible. Single selection only, no multiple selection.
S_ORDCL Closing Individual Production Orders or Process Orders Technically [page 164]	Concatenation not possible. Single selection only, no multiple selection.
S_ORDREP LMPC Order Report [page 166]	Concatenation not possible. Single selection only, no multiple selection.
S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_ORSON	Concatenation not possible. Single selection only, no multiple selection.
S_PBLKFG Pool formation with BOM information [page 296]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_PBPRLL Form Order Pool for Parallel Dispatching with Pool ID [page 278]	Concatenation does not make sense from an application perspective.
S_PCONV Partial Conversion of Planned Orders with Subsequent Dispatching [page 167]	Concatenation not possible. Single selection only, no multiple selection.
S_PLVERS HJPT Read/Save Plan Version [page 253]	Concatenation not possible. No selection.
S_POOLA Automatically Create Order Pool [page 291]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_POOLID Create Order Pool Manually [page 290]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_QM01 Create Quality Notification for Material Error [page 379]	Concatenation not possible. Single selection only, no multiple selection.
S_REFR, S_RELOAD Planning Table Update [page 409]	Concatenation is not possible in this direction. No selection. **Note** However, the action code S_SETSEL can be executed automatically after the action code S_REFR. Special settings are required for this. S_REFR Configuration: Refreshing Data

Action Code / Function	Remark
S_RESCD Reschedule All [page 252]	Concatenation is only possible with restrictions. Action code reads operations independently.
S_RESSIZ Open or reset all HJPT dialog boxes [page 410]	Concatenation not possible. No selection.
S_RES_CV Open or Reset HJPT Window for Charts [page 412]	Concatenation not possible. No selection.
S_SAVE Save Planning [page 413]	Concatenation not possible. No selection.
S_SETSTR Change Strategy Profile Settings [page 257]	Concatenation not possible. No selection.
S_SORT Reset Sorting of Planning Table and ALV Grid [page 415]	Concatenation not possible. No selection.
S_SPLIT Distribute Capacity Requirements to Individual Capacities Manually [page 178]	Concatenation not possible. Single selection only, no multiple selection.
S_UMTMSG Display Rescheduling Proposals [page 347]	Concatenation not possible. No selection.
S_VA03 Display Sales Order [page 381]	Concatenation not possible. Single selection only, no multiple selection.

2.7 LMPC HJPT Data Provider

LMPC Classes for Loading Data

The ALV Grid of the LMPC HJPT planning table is based on the structure /LMPC/HJPT_F01. The ALV Grid is filled with data via certain classes, known as data providers.

> ⚠ Restriction
>
> The LMPC planning table has a very large number of fields in the AVL Grid. However, not all fields are filled. This is due to the fact that the underlying structure is formed from standard structures using includes. This means that there are fields that are not filled. Therefore, empty columns in the ALV Grid are not an error, but a result of the architecture.

The following chapters on the data providers describe which fields are filled by data providers. Only the fields that are filled by LMPC data providers are described.

Standard fields of the graphical planning table, which are read and made available by the HJPT planning table, are not described. These fields are standard SAP fields.

The LMPC Configuration Guide contains a list of all data providers and fields that you fill. HJPT Data Provider Catalog

> ⚠ Caution
>
> Provisioning data costs runtime. The less data read, the faster it is to call the HJPT planning table. Saving the data or refreshing the data is also faster the fewer data providers are active, since the data providers are

run for each of these actions. The data providers are written in such a way that they require as little runtime as possible. It is not possible to improve the runtime of data providers.

It does not make sense to activate all available data providers. This can cause runtime problems. Careful consideration should be given to which data is required for the individual use case. Data providers that are not required should be deactivated. Instead of an overall profile that covers all use cases, individual profiles should be created for the specific use cases that contain only the required data providers.

See the section on runtime behavior. Notes on Runtime Behavior [page 17]

If you have questions about the content and use of the fields or the configuration of data providers, please contact your LMPC consultant.

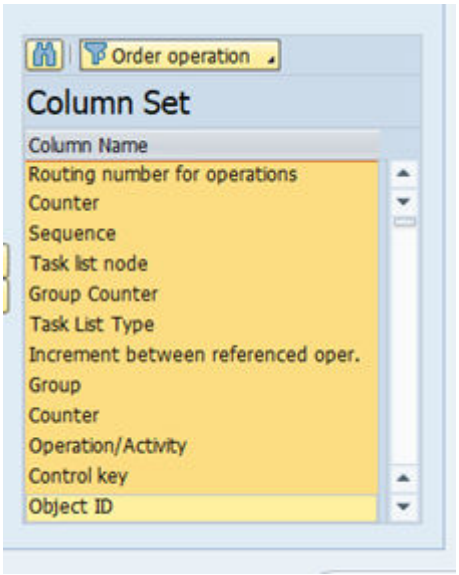
2.7.1 Data Provider /LMPC/CL_DP_AFVG Order Operation Data Planned Order

Operation data for planned orders

The data provider /LMPC/CL_DP_AFVG reads the order operation fields of planned orders.

For production and process orders, the fields are filled using the data provider CL_DP_STD. Data Provider /LMPC/CL_DP_STD Basic Data of the Capacity Planning Table [page 497]

The fields are located in the layout settings, in the group “Order operation”.



Layout Settings

The data provider fills the fields:

Field	Description
PLNTY_AV	Task List Type
PLNNR_AV	Key of Task List Group

Field	Description
PLNKN_AV	Number of Task List Node
ZAEHL_AV	Internal Counter
LOEKZ_AV	Deletion Flag
UVORN_AV	Suboperation
VORNR_AV	Operation Number
STEUS_AV	Control Key
ARBID_AV	Operating Resources Object ID
WERKS_AV	Plant
KTSCH_AV	Standard Text Key
LTXA1_AV	Operation Short Text
LTXA2_AV	Operation Description: 2nd Line of Text
USR00_AV	Operation User Field 1
USR01_AV	Operation User Field 2
USR02_AV	Operation User Field 3
USR03_AV	Operation User Field 4
USR04_AV	Operation User Field 5 Quantity
USE04_AV	Operation User Field 5 Unit
USR05_AV	Operation User Field 6 Quantity
USE05_AV	Operation User Field 6 Unit
USR06_AV	Operation User Field 7 Currency
USE06_AV	Operation User Field 7 Currency Unit
USR07_AV	Operation User Field 8 Currency
USE07_AV	Operation User Field 8 Currency Unit
USR08_AV	Operation User Field 9 Date
USR09_AV	Operation User Field 10 Date
USR10_AV	Operation User Field 11 Indicator
USR11_AV	Operation User Field 12 Indicator

→ Tip

The columns of the user fields have generic labels. In the order operation, the fields can have different labels for the user fields depending on the routing used or even depending on each operation of a production order or process order. The column headers can be changed in LMPC Customizing. C10 Transaction /LMPC/FLD: Rename, Group, and Remove ALV Grid Columns

2.7.2 Data Provider /LMPC/CL_DP_ALERT Alert Processing

The data provider CL_DP_ALERT calculates the alerts for the ALV Grid of the HJPT planning table.

There are two types of alerts:

- Single Alerts [page 435]
- Group Alert [page 436]

The advantage of the single alerts is that new alerts are created and changed using simple settings in Customizing. The alerts in the group alert have the advantage that the overall result of multiple alerts is displayed cumulatively in a group field.

The group alert requires significantly less runtime, but it takes quite a lot of effort to create a new alert for the group alert.

The single alert settings are made in transaction /LMPC/ALERT. C18 Transaction /LMPC/ALERT: Configuration of Single Alerts in HJPT ALV Grid

The group alert settings are made in transaction /LMPC/ALERT2. C19 Transaction /LMPC/ALERT2: Configuration of Group Alert in HJPT ALV Grid

2.7.2.1 Single Alerts

Alerts provide the option of a quick overview of the status of orders.

There are 10 single alerts in the HJPT planning table. A single alert consists of a field for an icon and a field for an alert text.

The icons and texts are freely configurable. Simple rules can be used to perform check routines on the data and to display icons and texts depending on the result of the check. C18 Transaction /LMPC/ALERT: Configuration of Single Alerts in HJPT ALV Grid

Ord. Nr.	Alert 1	Alert Text 1	Alert 2	Alert Text 2	Alert 3	Alert Text 3	Alert 4	Alert Text 4	Alert 5	Alert Text 5
3626135		No requirement date or availability equal to requirement date		No check or only partially confirmed		Production version valid planned order		BOM valid for planned order		Equipment free
3626171		Receipt too late		No check or only partially confirmed		Production version valid planned order		BOM valid for planned order		Equipment free
3626124		Receipt too late		Missing material, no confirmation		Production version valid planned order		BOM valid for planned order		Equipment free
3626121		Receipt too late		Missing material, no confirmation		Production version valid planned order		BOM valid for planned order		Equipment free
3627860		No requirement date or availability equal to requirement date		Material Availability Confirmed		Production version valid planned order		BOM valid for planned order		Equipment free
3403220		No requirement date or availability equal to requirement date		Material Availability Confirmed		Production version valid planned order		BOM valid for planned order		Equipment free
60009859		Receipt too late		Material Availability Confirmed		Production version valid production/process order		BOM valid for production/process order		Equipment free
60009859		Receipt too late		Material Availability Confirmed		Production version valid production/process order		BOM valid for production/process order		Equipment free
60009859		Receipt too late		Material Availability Confirmed		Production version valid production/process order		BOM valid for production/process order		Equipment free
60009858		Sufficient buffer for requirement date		Material Availability Confirmed		Production version valid production/process order		BOM valid for production/process order		Equipment free
60009860		No requirement date or availability equal to requirement date		Missing material, no confirmation		Production version valid production/process order		BOM valid for production/process order		Equipment free
60009745		No requirement date or availability equal to requirement date		Missing material, no confirmation		Production version valid production/process order		BOM valid for production/process order		Equipment free

Example of Alerts in the HJPT Planning Table

You can find the fields for the alerts in the ALV Grid group of help fields.

The headings of the columns are named generically and can be changed using the transaction for changing the column label. C10 Transaction /LMPC/FLD: Rename, Group, and Remove ALV Grid Columns

The following sample configurations for alerts are delivered with the delivery of LMPC:

- Requirement date
- ATP check
- BOM validity

- Production version validity
- Equipment check
- Operation Sequence

The examples perform the same check as the group alert. The details of the individual alert can be found in the group alert chapter. Group Alert [page 436]

> **Note**
>
> The delivered alerts are merely examples. They can be used as a template for individual alerts in the customer system. An LMPC consultant can help you set the alerts.

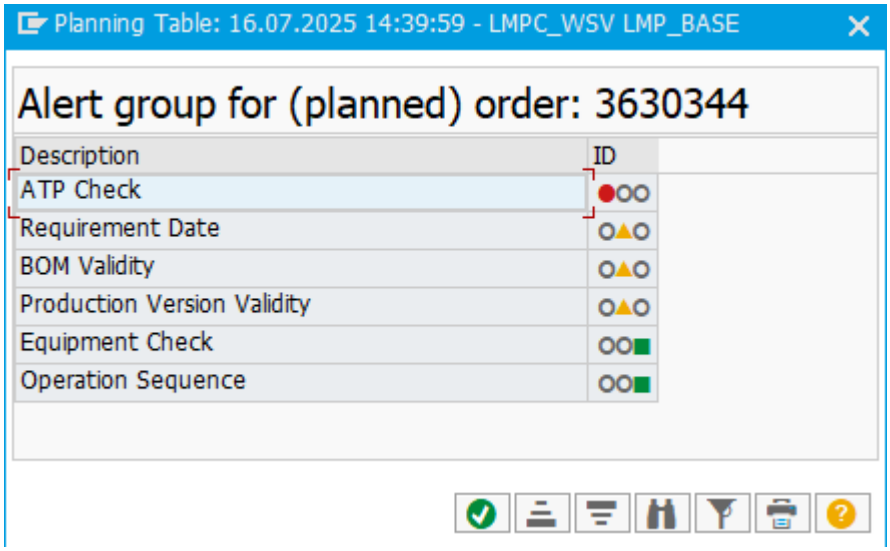
2.7.2.2 Group Alert

You can display alerts in the SAP LMPC HJPT detailed scheduling planning board.

Alerts provide the option of a quick overview of the status of orders. In the group alert, multiple alerts can be grouped together.

Alerts are generated with reference to the operation of an order. All alerts of the group alert are cumulated as a traffic light icon in the field ALERT_ICON_AX (group alert) of the structure /LMPC/HJPT_F01 (structure of the ALV Grid view). The field is in the ALV Grid group of help fields.

Double-clicking on the field lists all alerts for a row.



Group Alert Example

The group alert settings are made in transaction /LMPC/ALERT2.

The standard delivery of the HJPT planning table contains 5 alerts for the group alert field:

- Requirement date
- ATP check
- BOM validity

- Production version validity
- Equipment check
- Operation Sequence

The HJPT test profiles LMPC_T01 to LMPC_T05 contain all alerts in the group alert; the test profiles LMPC_T06 to LMPC_T08 contain only the alert for the ATP check. HJPT Test Profiles [page 29]

Requirement date

The system checks whether the basic end date of the order adheres to the requirement date.

- Green: Basic end date <= requirement date.
- Yellow: There is no requirement date.
- Red: Basic end date >= requirement date.

If the data provider /LMPC/CL_DP_USER_104 is active, the date available for MRP is considered instead of the basic dates. This date is calculated from the order basic end date plus the goods receipt processing time.

This alert refers to the order number and is identical for each operation of an order.

ATP check

The alert of the ATP check displays whether it was possible to confirm the material availability.

For production and process orders:

- Green: Material availability confirmed.
- Yellow: No status (no check).
- Red: Missing parts.

For planned orders:

- Green: The order was confirmed in full.
- Yellow: The order was partially confirmed or the order has not yet been checked.
- Red: The order was not confirmed.

This alert refers to the order number and is identical for each operation of an order.

> **Note**
>
> - This alert evaluates the status information for the orders. This alert does not execute a separate ATP check. For this alert to display results, an ATP check must first be executed. S_ATP ATP Check in Mass Processing [page 349]
> - Rescheduling an operation resets the material availability status for the order. This is because rescheduling changes the operation dates. Therefore, after rescheduling, an ATP check must first be executed before the alert displays a result.
> - The evaluation for the ATP check is based on the content of the “System Status Header” field for production orders (SSKOX_SU) and the content of the “Availability Confirmation” field for planned orders (MDPBV_PA). If production orders have a large number of status information entries, it is possible that the status for the ATP check is not displayed in this field, because the ATP status appears relatively far back and the display is truncated after 40 characters. In this case, you can use the data provider for the variable status fields to display the ATP information in a single status field. With the single alerts, you can then set an alert for this field.
>
> Data Provider /LMPC/CL_DP_USER_STAT Variable Status Fields [page 519]

Single Alerts [page 435]

BOM validity

The system checks whether the basic dates of the orders lie within the limits of the BOM validity.

- Green: The basic start date is either later than or the same as the “valid from” value of the BOM. The basic end date is either earlier than or the same as the “valid to” value of the BOM.
- Yellow: No validity data is available.
- Red: The basic start date is earlier than the “valid from” value of the BOM. The basic end date is later than the “valid to” value of the BOM.

This alert refers to the order number and is identical for each operation of an order.

> ### Note
>
> For the alert for the bill of material to work, the data provider CL_DP_BOM must be set to read BOM data. This is not the case in the standard delivery. Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data [page 451]

Production version validity

- Green: The basic start date is either later than or the same as the “valid from” value of the production version. The basic end date is either earlier than or the same as the “valid to” value of the production version.
- Yellow: No validity data is available.
- Red: The basic start date is earlier than the “valid from” value of the production version. The basic end date is later than the “valid to” value of the production version.

This alert refers to the order number and is identical for each operation of an order.

Equipment Check

The system checks whether one of the conflict fields for equipment displays a conflict.

- Green: There is no conflict.
- Red: There is a conflict.

The yellow alert does not exist.

This alert refers to the individual operation of an order. This alert can be different for each operation.

For details on the check for conflicts, see the description of the equipment check.

Equipment Check [page 94]

Data Provider /LMPC/CL_DP_USER_103 Production Resource/Tool [page 514]

Sequence of Order Operations

Operations of an order can only start in ascending order with their operation number one after the other or at the same time.

If a single operation of an order is dispatched and the other operations of the order remain deallocated, the operations are automatically scheduled in such a way that the operation sequence is correct, if midpoint scheduling is activated. G06 Transaction /LMPC/OPDB: Configuration of Strategy Profiles

Most planning functions of the HJPT planning table do not check the operation sequence of orders when searching for a dispatching date because they assume that only one operation per order is dispatched and the others remain deallocated.

If several operations of an order are dispatched individually, a subsequent operation may be dispatched before the predecessor, because there is not check on the order sequence during dispatching. This creates a conflict with regard to the sequence of operations. The operation sequence alert makes this situation visible.

The system checks whether the field “Operation Sequence Conflict” (OP_CONFLICT_AX) displays a sequence conflict:

- Green: The sequence of operations is correct.
- Red: The operation starts earlier than its direct predecessor.

The yellow alert does not exist.

The field is filled by the data provider CL_DP_ALERT and displays if an operation with a higher operation number starts earlier than its direct predecessor of the same order (Value ‘X’). The field can be found in the ALV Grid field group of the HJPT Auxiliary Fields.

> → Tip
>
> The field “Operation Sequence Conflict” (OP_CONFLICT_AX) can also be used to define a rule for coloring the ALV Grid or the graphic.

2.7.3 Data Provider /LMPC/CL_DP_AUTEXT Order Texts

LMPC order text and SAP standard order texts

This data provider fills fields for order texts. These are the order header text of the production order or process order and the fields for the LMPC order text.

Fields

Technical Field Name	Description
AUTEXT_FA	Order Header Text
CORDTEXT_AX	LMPC Order Text
CRUSER_AX	User who created the text.
CHUSER_AX	User who last changed the text.
CRTMSTMP_AX	Time stamp for when this text was created.
CHTMSTMP_AX	Time stamp for when this text was last changed.

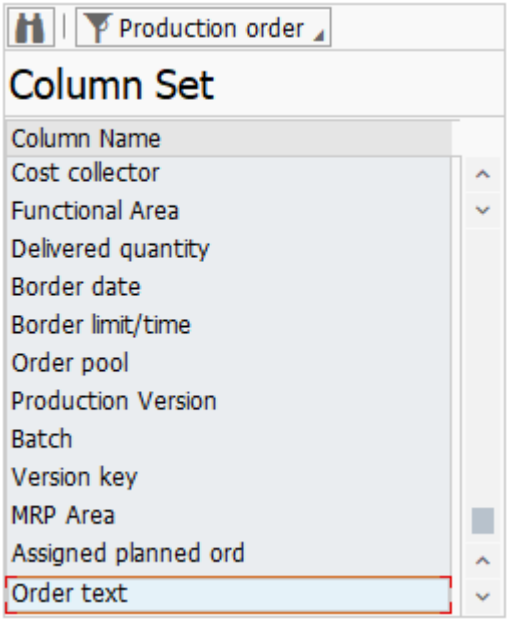
The order header text comes from the long text of production and process orders. The first 79 characters of this text are visible in the field. A side button on the field allows you to expand the text so that the entire text becomes visible. Text is entered into the field by navigating to the change mode of orders (S_AK02 Change

Order [page 116]). The data is maintained in simulation mode. This means that the texts are lost after exiting the HJPT planning board if the planning is not saved.

> → Tip
>
> By default, the field of the order header text is preset in such a way that single-clicking on the field allows you to edit the text. However, if texts with multiple lines are edited, the default function should be switched to a double-click. Otherwise, the full text cannot be expanded because single-clicking means that the function opens the edit screen of the order. S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]

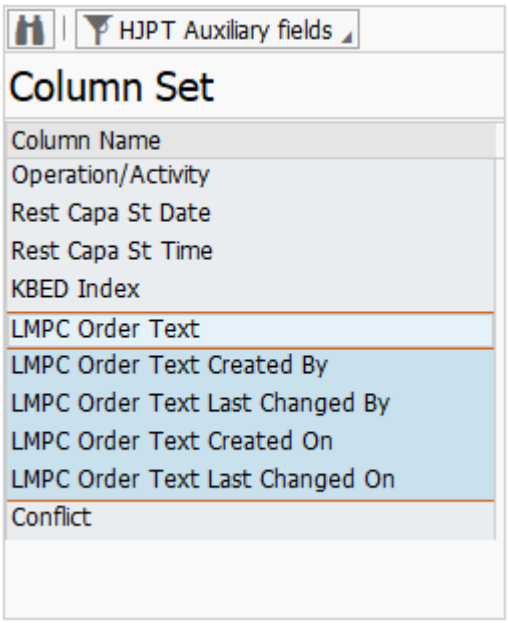
The LMPC order text is a text field with a length of 72 characters, which can be filled via the action code S_CORTXT (S_CORTXT LMPC HJPT Order Text [page 134]). This text is stored in an LMPC table for the order number and kept for six months. Texts that are older than six months will be deleted automatically. The storage of this order text depends only on the order number. Therefore, the texts can be stored for each order type. Data is saved to the database immediately and not in simulation mode. When converting planned orders to production or process orders, the LMPC order text of the planned order is automatically adopted for the newly generated production or process order.

The field for the order header text is in the layout settings in the production order group.

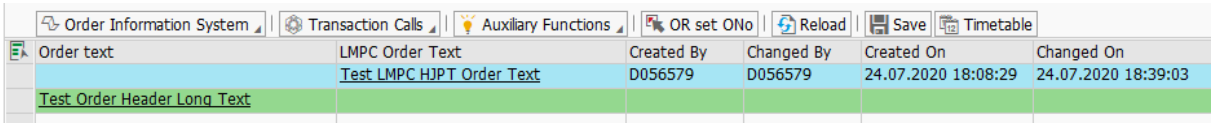


Production Order Layout Group

The fields for the LMPC order text are in the help fields layout group.



Help Fields Layout Group



Fields in the HJPT ALV Grid

2.7.4 Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations

Data provider for requirement date

The data provider for the LMPC requirement date determines the pegged requirements, the requirement date, and the available quantities at the time of the order receipt for the orders that are displayed in the HJPT planning table. The LMPC order relations are also calculated by this data provider. List of Order Relations [page 86]

> → Remember
>
> In the HJPT planning table, a row in the ALV Grid represents an operation of an order. Since the data provider determines the data for each order, the data for the individual operations of an order is always the same.

The requirements/stock list of transaction MD04 is read in the planning period via a standard SAP module. The control parameter settings can be used to extend the read period as required. C16 Transaction /LMPC/STEU LMPC: Control Parameter

Not all data of transaction MD04 is processed. The logic can process the following data:

- The data of the plant segment for make-to-stock production.
- The make-to-order data for standard sales orders.

- The project stock (PS) data.
- The data in the gross requirements planning section.
- Data for the special procurement key Production in another plant, no stock transfer.

Other planning segments of MD04, such as a planning segment, are not processed. Cross-plant planning is not supported either.

The receipts in the form of planned, production, or process orders are calculated against requirements such as planned independent requirements, sales orders, network orders, order reservations, dependent requirements, and so on. The respective order operation that is displayed in the HJPT planning table is assigned the requirement date of the requirement that the order of the operation covers according to the heuristic.

The **requirement date** shows the date on which the materials that are produced with the order are required.

The **net requirements date** shows the date by which production must be completed so that the requirements date can be met. This is the requirement date minus one day because the material must arrive on the day before the requirement date if no further floats are set. If additional floats are set, the goods receipt processing time and the float after production are also subtracted. Depending on the setting in Customizing, the safety time can also be subtracted. You can use the settings to activate the calculation of the net requirements date. The calculation is deactivated in the delivery to save runtime. Data Provider /LMPC/ CL_DP_BED Configuration: Requirement date

The **plant stock** of a material is treated as a receipt. The plant stock is processed at the start of the read period.

The **safety stock** is treated as a pegged requirement. The safety stock always has the current date. It is processed as the first pegged requirement, even if there are other pegged requirements that are before the current date. This corresponds to the display of transaction MD04. A receipt element that covers the safety stock always has the current date as the requirement date. If a receipt covers both the safety stock and another pegged requirement, it always has the date of the safety stock as the requirement date, that is, the current date. Subsequent receipts that cover earlier requirements can receive an earlier requirement date even though they arrive later than the receipt that covers the safety stock.

For anonymous **make-to-stock production** in the plant segment, the logic works according to the first-in-first-out (FIFO) logic. In **make-to-order production**, the sales order specifies the requirement date against which the planned or production orders and process orders that cover the requirements are calculated. In the Project System, the collective order specifies the requirement date.

The calculation takes into account the simulative status of the data in the planning table. This means that the data that is read from transaction MD04 is updated with the receipt dates of the operations from the currently simulated planning data.

This has the advantage that the current, unsaved planning situation is taken into account. If, for example, a planned order is brought forward and dispatched before other planned orders, the logic in the data provider will assign it to an earlier requirement and the requirement date will be adjusted according to the requirements.

Orders created in simulation are also taken into account. S_CRORD Create Simulative Order [page 156]

> ⚠ Caution
>
> Transaction MD04 works to the day. In the display of transaction MD04, orders that have the receipt or requirement on the same day are sorted according to the type of element and order number. On the other hand, the HJPT planning table works to the second based on capacity requirements. During the calculation of the LMPC order relations, the data of transaction MD04 is updated with the simulated data

from planning. When you sort the data, not only the receipt date or the requirement of the respective order is taken into account, but also the times of the capacity requirements. Orders that arrive or start on the same day are thus sorted according to the times of your capacity requirements. This means that the HJPT planning table functions more precisely than transaction MD04. It processes the orders in the sequence in which they are processed on the machines. As a result, the assignment of the orders to the pegged requirements within one day may differ from the display of the sequence in transaction MD04. This topic is only relevant if there is more than one receipt or requirement per day for a material.

If the logic for firming order relations is used, the firmed relations between the orders are also included in the logic for determining the LMPC requirement date and override the FIFO logic. The firmed order relations only make sense for anonymous make-to-stock production, since in make-to-order production the orders are already assigned to the sales orders and are processed accordingly.

The following MRP elements are recognized and processed:

Stocks:

- Plant stock
- Safety stock

Receipt elements:

- Planned orders
- Production orders
- Process orders
- Purchase requisition
- Purchase order schedule line

Requirement elements:

- Planned independent requirements
- Dependent requirement
- Dependent reservation
- Sales order
- Network

> ### Note
>
> It is possible that elements that are not listed here are also processed. However, this cannot be guaranteed. If you want to enhance the logic, you can request an enhancement from SAP.

The following fields are filled:

Field Name	Description
Order Data	
BDTERM_MD	LMPC requirement date of the order (date).
BDTERM_NT_MD	LMPC net requirement date of the order (date).
STODA_MD	MRP availability of the order (date).
DELB0_MD	Short description of the MRP element of the order.

Field Name	Description
DELKZ_MD	MRP element of the order.
EXTRA_MD	Data for the MRP element of the order.
Pegged requirement data:	
DMD_DELNR_MD	Number of the MRP element of the first pegged requirement for this receipt.
DMD_DELB0_MD	Short description of the MRP element of the first pegged requirement for this receipt.
DMD_DELKZ_MD	MRP element of the first pegged requirement for this receipt.
DMD_EXTRA_MD	Data for MRP element pegged requirement
OREL_DMD_MD	Pegged requirement order relations. Dropdown field with all pegged requirements for an order. The standard delivery contains the following information for each line: • Number of MRP element of the pegged requirement • Short description of MRP element of the pegged requirement • Material number of the pegged requirement • Linked quantity • Firming indicator This field outputs the pegged requirements with their original MRP elements. Example: The pegged requirement dependent requirement comes from a planned order. Therefore, the planned order is dsiplayed instead of the dependent requirement. You can use the settings for the data provider to display further information in the field. Data Provider /LMPC/CL_DP_BED Configuration: Requirement date
Material Data	
VRFMGBT_MD	Available quantity on the requirement date (after issue of the requirement).
VRFMG_MD	Available quantity on the receipt date (after receipt of the requirement coverage element).
VRFMGEH_MD	Unit of measure for available quantity for requirement date.
Data for Co-Production:	
VRFMG_STKO01_MD to	Available quantity receipt date/time for co-parts and secondary parts.

Field Name	Description
VRFMG_STKO12_MD	
VRFMGEH_STKO01_MD to VRFMGEH_STKO12_MD	Unit of measure for available quantity for co-parts and secondary parts.
DLT_M_VFMMAB_MD	Material number smallest delta.
DLT_VFMMAB_MD	Delta quantity smallest delta.
DLT_MGEH_MD	Unit of measure for delta quantity
Technical Information:	
MD04BFFR_MD	Read time MD04 Data buffer in the form of a time stamp. Buffer for MD04 Data [page 521]
MD04BFFR_TM_MD	Time at which the MD04 data buffer was read.

The data for co-production is additional data that is only determined if the calculation is activated using the settings. Data Provider /LMPC/ CL_DP_BED Configuration: Requirement date

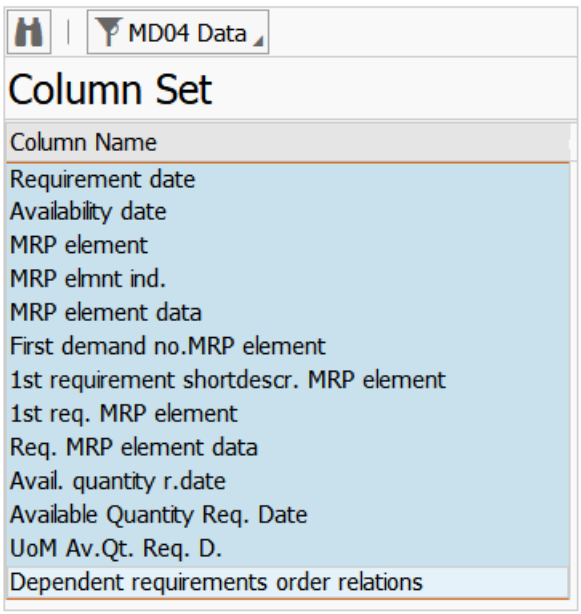
For co-production, the available quantities of the materials of the components of an order are calculated. However, only for secondary parts and co-parts. That is, for BOM components with negative requirement quantities. For components with positive requirement quantities, the available quantity is not calculated.

You can also activate a comparison using the materials in co-production. The comparison is made using the header material and the BOM materials in co-production. During this comparison, the available quantity is subtracted from the respective maximum stock level from the plant data for the material (Data Provider / LMPC/CL_DP_MARC Plant Data for Material [page 480]).

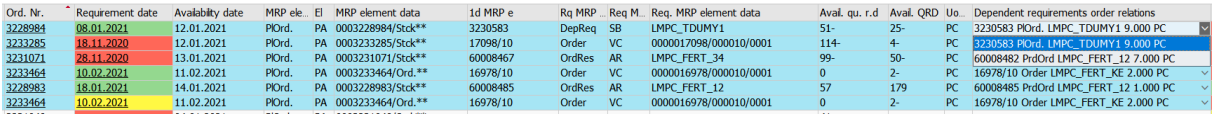
The result is positive if the maximum stock level is greater than the available quantity and negative if the maximum stock level is less than the available quantity. As a result, a negative number indicates that the available quantity exceeds the planned maximum stock level. The material number of the material that has the smallest delta is determined. This is the material that is either closest to the maximum stock level or that exceeds the maximum quantity the most. This material and the delta quantity are output in the delta fields.

> ⚠ Caution
>
> Determining data for co-production requires a long runtime. It should only be activated if the data is needed.

The data provider fields are in the layout group of the MD04 data.



MD04 Data



Ord. Nr.	Requirement date	Availability date	MRP ele...	El	MRP element data	1d MRP e	Rq MRP ...	Req M...	Req. MRP element data	Avail. qu. r.d	Avail. QRD	Uo...	Dependent requirements order relations
3228984	08.01.2021	12.01.2021	PlOrd.	PA	0003228984/Stck**	3230583	DepReq	SB	LMPC_TDUMY1	51-	25-	PC	3230583 PlOrd. LMPC_TDUMY1 9.000 PC
3233285	18.11.2020	12.01.2021	PlOrd.	PA	0003233285/Stck**	17098/10	Order	VC	0000017098/000010/0001	114-	4-	PC	3230583 PlOrd. LMPC_TDUMY1 9.000 PC
3231071	28.11.2020	13.01.2021	PlOrd.	PA	0003231071/Stck**	60008467	OrdRes	AR	LMPC_FERT_34	99-	50-	PC	60008482 PrdOrd LMPC_FERT_12 7.000 PC
3233464	10.02.2021	11.02.2021	PlOrd.	PA	0003233464/Ord.**	16978/10	Order	VC	0000016978/000010/0001	0	2-	PC	16978/10 Order LMPC_FERT_KE 2.000 PC
3228983	18.01.2021	14.01.2021	PlOrd.	PA	0003228983/Stck**	60008485	OrdRes	AR	LMPC_FERT_12	57	179	PC	60008485 PrdOrd LMPC_FERT_12 1.000 PC
3233464	10.02.2021	11.02.2021	PlOrd.	PA	0003233464/Ord.**	16978/10	Order	VC	0000016978/000010/0001	0	2-	PC	16978/10 Order LMPC_FERT_KE 2.000 PC

Fields in the ALV Grid

→ Tip

In the fields of the first pegged requirement, the number of the corresponding sales order is displayed if an assignment to the order could be created. The data provider /LMPC/CL_DP_SD_DATA uses this data to provide additional data for the sales order.

Data Provider /LMPC/CL_DP_SD_DATA Sales Order [page 493]

⚠ Restriction

This logic maps only the simple standard cases described above. Transaction MD04 allows you to display a whole host of MRP elements. The simple logic of the data provider CL_DP_BED can only recognize and process individual MRP elements. The logic does not consider something like requirement elements for co-products or by-products in a co-production scenario.

Therefore, if requirement dates are not determined in your system or are not determined correctly, this is not an error, it is probably due to the fact that certain MRP elements are not processed for your planning situation.

The reasons why no requirement date can be determined for an order are:

- There is no logic for the requirement element, for example, in the case of cross-plant planning with stock transport orders.
- The requirement quantity is already covered and the quantity of the order is not required. This often occurs if the quantities of the orders are increased after the MRP run, orders are created manually, or orders are rescheduled to other dates. Orders that are not required should be deleted so that the

warehouse stock is not increased unnecessarily. The exception messages can indicate unnecessary orders. Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]

- The pegged requirements are outside the read period of the data. Unless configured otherwise, the data of transaction MD04 is read with the read period of the HJPT planning table. If the pegged requirements are outside this range, they are not recognized. This issue can be solved by increasing the read period. C16 Transaction /LMPC/STEU LMPC: Control Parameter

If applicable, check the data provider /LMPC/CL_DP_BED_2. This data provider can process more MRP elements. Data Provider /LMPC/CL_DP_BED_2 Requirement Date According to MD09 Logic [page 448]

ⓘ Note

Comparison Between Requirement Date and Rescheduling Date

This data provider calculates the LMPC requirement date for the orders.

The data provider /LMPC/CL_DP_USER_001 is used to read the rescheduling date from the MD04 data. Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]

The **rescheduling date** is specified by transaction MD04. If an order arrives too late and the available quantity becomes negative, MD04 displays a date on which an order would have to arrive for the requirements to be covered on time. It informs the user that an order must be brought forward. If an order arrives too early, material is produced in stock unnecessarily. Therefore, in MD04, the rescheduling date indicates that this order is to be produced later to avoid storage costs. The rescheduling date is read from the database; simulated data is not taken into account.

The **LMPC requirement date** is a slightly different concept. The LMPC requirement date shows when the quantity of an order is required by the pegged requirement. This means when the quantity must be received at the latest. The advantage of the LMPC requirement date is that the requirement date also works with data in the simulation that has not yet been saved. For each planning operation in the HJPT planning table, the requirement date of the orders involved is recalculated and updated using the simulated planning dates.

→ Tip

- The function dispatching on requirement date can be used to dispatch orders in such a way that they are produced as close to the requirement date as possible. S_EPRQD Dispatch on Requirement Date [page 205]
- If you want to speed up the reading of the data, you can activate the day buffer for the MD04 data. Buffer for MD04 Data [page 521]

Related Information

Connecting Lines for Bars in Bar Chart [page 51]
List of Order Relations [page 86]
Multilevel Planning via Order Relations [page 313]

2.7.5 Data Provider /LMPC/CL_DP_BED_2 Requirement Date According to MD09 Logic

Pegged requirements data based on transaction MD09

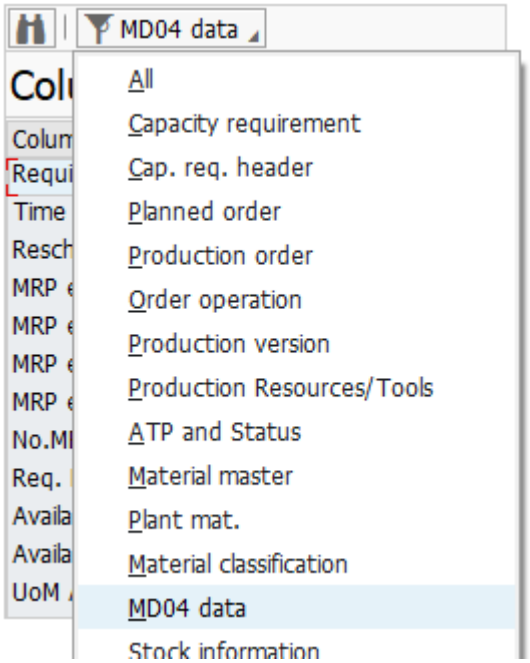
The data provider uses the logic of transaction MD09 to determine data for the requirement date.

> ⚠ Caution
>
> This data provider reads data for the orders from transaction MD09. In contrast to the data provider /LMPC/CL_DP_BED, data changes in the simulation are not taken into account. The data provider /LMPC/CL_DP_BED_2 reads from the database only. The fields that are filled with the data provider /LMPC/CL_DP_BED_2 (logic MD09) cannot be compared with the fields of the data provider /LMPC/CL_DP_BED (first-in-first-out heuristic). These are independent logics that cannot be compared. Also note the information in the configuration guide Data Provider /LMPC/CL_DP_BED_2 Configuration: Requirement Date MD09 and the description of the data provider /LMPC/CL_DP_BED. Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]

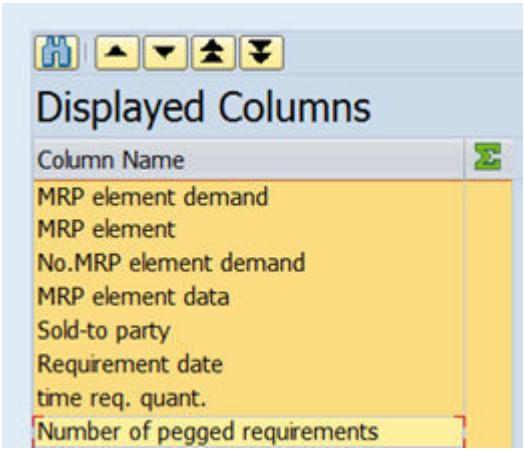
The data provider fills the following fields:

Field Name	Description
BDTERM_MD	Requirement date
BDZEIT_MD	Time req. quant.
DMD_DELKZ_MD	MRP element pegged requirements
DMD_DELB0_MD	Short description of MRP element
DMD_DELNR_MD	No. MRP element demand
DMD_EXTRA_MD	Data for MRP element pegged requirement
DMD_KUNNR_MD	Sold-to party
NUM_PRQM_MD	Number of pegged requirements

The fields can be found in the “User fields” group:



Groups Selection Layout



Fields in the Layout Settings

MRP ele	MRP ele	N MRP elm.	Data	Sold-to pt	Req. date	Time	Num of pegged rqmts
PP	Ind.Req		VSF		21.08.2017	00:00:00	1
VC	Order	0000016898	0000016898/	1234	23.08.2017	00:00:00	1
VC	Order	0000016898	0000016898/	1234	23.08.2017	00:00:00	1

Fields in the ALV Grid of the HJPT Planning Table

To find the requirement element, the list of the order route is read from transaction MD09 from bottom to top until a requirement element is found that does not have the same number as the searching planning or production order. If there is more than one pegged requirement for an order, the first pegged requirement is always selected and the route to the MRP element is determined for this requirement. You can use the parameter `SEL_MODE` (see parameter description) to change the logic so that it selects the last pegged requirement and determines the order route for this.

Special feature Release order for a stock transfer order: If more than one element is found in the order route, the system selects the earliest element.

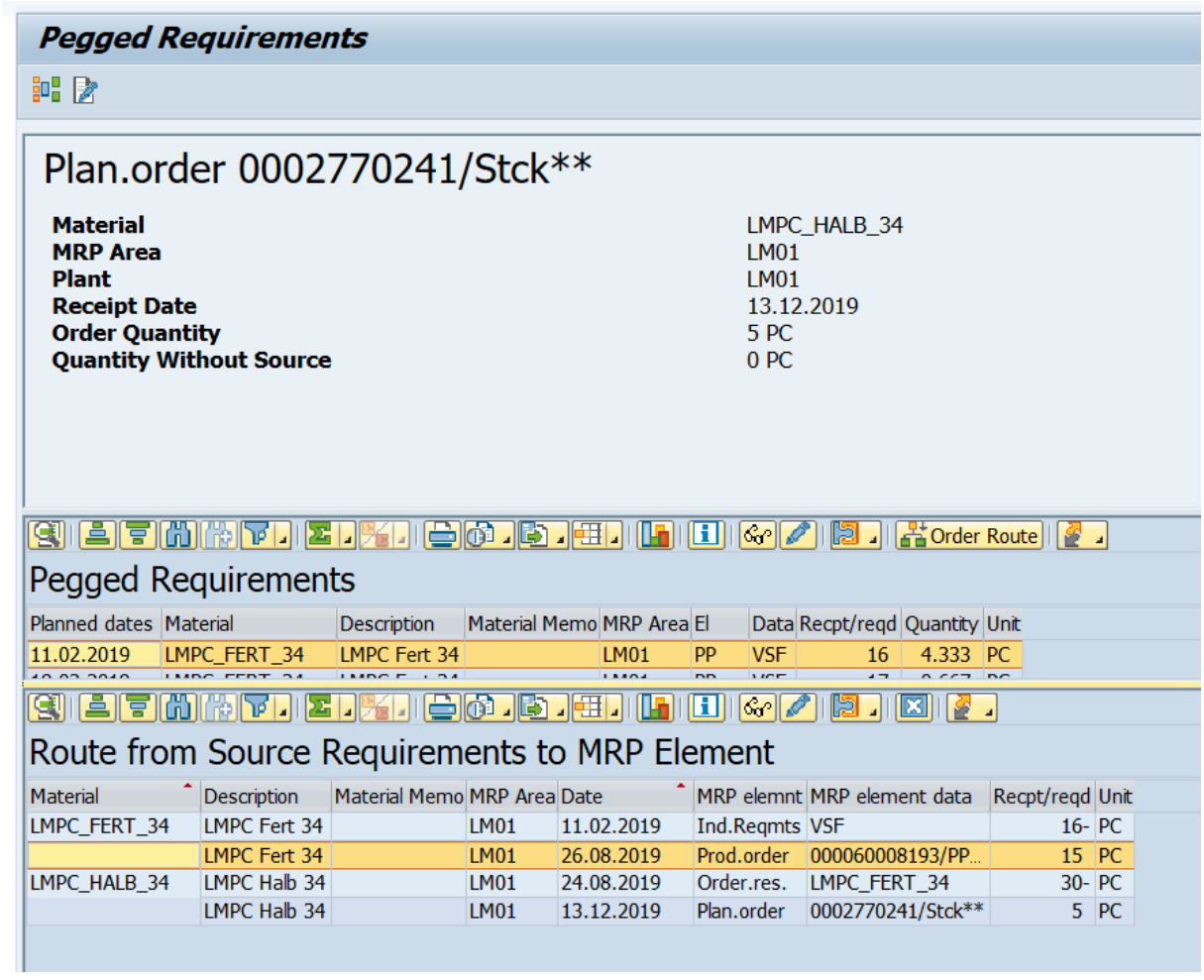
Special feature Order reservation: If an order reservation is found as the result, the logic will continue to search upwards until a production order is found.

Special feature Dependent requirement: If a dependent requirement is found as the result, the logic continues to look up the list until a planned order is found.

Special feature Production order: Data on the released production order is not determined again. Released production orders are skipped (in German and English -> query on the status description). The data for this production order is only read from the database table. You can use the parameter `DRREL_ON` to deactivate this behavior (see parameter settings).

Example MD09:

Here, the pegged requirement from the planned order is the order reservation. Therefore, the system continues to search for the production order.



Example Transaction MD09

> **Note**
>
> For planned and production orders: The planned dates in the order route are the basic end dates for the respective order. However, since we need the scheduled start date, this date is read from the RESB table for planned and production orders.

> **Restriction**
>
> Data determination is not possible for simulative orders. S_CRORD Create Simulative Order [page 156]

Related Information

Data Provider /LMPC/CL_DP_BED_2 Configuration: Requirement Date MD09

2.7.6 Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data

Display data for components of orders

The data provider /LMPC/CL_DP_BOM reads the components of the orders.

The data provider has two versions of read logic:

- Reading the data from the components of the orders.
- Reading the data from the BOMs of the header materials.

The standard setting is to read the data using the components of the orders. Reading the data using the BOMs is an alternative logic and can be activated via a parameter in Customizing. Data Provider /LMPC/CL_DP_BOM Configuration: Component Data or BOM Data

The following data is provided:

A maximum of 12 BOM components with the associated material short texts, requirement quantities, required quantity units, and batch numbers in separate fields.

In addition, the data for the standard description and material group of the relevant BOM material can be read from the material master, while the plant-specific material status can be read from the plant material data.

BOM component 1	BOM mdscr1	Reqm qty 1	BOM component 2	BOM mdscr2
LMPC_HALB_12		62		
LMPC_ROH_3		328	LMPC_ROH_4	
LMPC_HALB_12		4		
LMPC_HALB_12		50		
LMPC_HALB_12		4		
LMPC_HALB_12		14		
LMPC_ROH_3		10	LMPC_ROH_4	
LMPC_FERT_12		2	LMPC_FERT_34	
LMPC_FERT_12		4	LMPC_FERT_24	

Example: BOM Components in the HJPT Planning Table

You can use settings in Customizing to select BOM components and restrict the display to components with certain characteristics. Deactivating the reading of individual data, such as batches, helps to optimize the runtime. Data Provider /LMPC/ CL_DP_BOM Configuration: Component Data or BOM Data

If you do not select the BOM items in Customizing, the data provider displays the first 12 items determined.

In the case of co-production, the indicator for co-production is set for each component that acts as a co-product. In co-production, the requirement quantities of co-products and by-materials are recorded as negative.

In addition to the data in separate fields, there is a field that contains an expandable list of all components read for an order. This field can be useful if a material has more than 12 components. The filter settings from Customizing that restrict the display of the other fields also affect this field.

Differences depending on choice of read logic:

- **Change information for BOM**

Read components	Read BOM
Change information is not read for the BOM. The BOMs are not read, so no changes to the BOM can be determined.	When reading via the BOM, the data provider reads the elements of the BOM for the explosion date of the routing. The changes to the BOM are then taken into account over time. Additional fields: The validity of the BOM, the change number, the change text, and the date of the next planned change for the bill of material.

- **Change of component quantities**

Read components	Read BOM
Change the component quantities when changing the quantity of the order, since the quantities are read directly from the order.	The component quantities are not changed when changing the quantity of the planned order. The quantities are read from the database (table RESB). Therefore, it is not possible to change the component quantities in the simulation. For production and process orders only, this logic can also be updated in the simulation.

Read components	Read BOM
	The data for planned orders is updated as soon as the data is saved.

- Display of batches

Read components	Read BOM
Batch information is read directly from the order.	Batch information is read from the database table RESB. If there was an operation split in batch determination and more than one batch has been assigned to a BOM item, the first batch number is displayed and a "+" is appended to the number. The "+" indicates that there is more than one batch number.

- Display of assemblies

Read components	Read BOM
When the components are read, the components are read directly from the order.	The BOM explosion only takes place for the header material of the order.
The components with exploded dummy assemblies are displayed in the order. You can also use this logic to display the items in dummy assemblies.	Dummy assemblies are not exploded. Therefore, materials in dummy assemblies cannot be displayed.

- Sequence of components

Read components	Read BOM
For data without dummy assemblies: Components are displayed in the sequence of the item numbers. Data with dummy assemblies: The components of the orders are read using standard SAP function modules. These do not return the sequence in the usual display. The sequence is not formatted in the way it is displayed in the dialog display of the components for the order. The sequence of the display for materials with dummy assemblies is determined from the order levels. First, the components are read directly below the material. The components that are contained in dummy assemblies are then read. The material of the dummy item itself is also displayed. However, since a material of a dummy assembly belongs to a lower order level, it is displayed together with the	Only elements of the BOM on the first level in the sequence of item numbers. No explosion of dummy assemblies.

Read components	Read BOM
materials contained in the dummy assemblies. It is not displayed in the row of materials in the level directly below the header material, it is only displayed when the next level of materials of the dummy assemblies is displayed. If a dummy assembly has alternative items, all alternative items are displayed. You can use the SORT parameter in the data provider to change the sorting so that the elements are displayed in the order of their item numbers and material numbers.	

Note

The choice of read logic depends on the requirements in the customer system. No general statement can be made as to which logic is to be used. Reading via the components delivers the data directly from the order and is the standard logic. However, it does not provide any change data for the BOM.

Reading the data with this data provider requires a relatively long runtime. It is not possible to determine which logic requires less runtime. This depends on the data in the system. A test is recommended to determine which logic is used.

Reading via the BOM can be advantageous in terms of runtime if you access a large number of orders with minimal different materials. In this case, only a few BOM explosions have to be carried out instead of reading the data from each order individually.

The disadvantage of reading from the BOMs is the missing update of component quantities when changing the quantity of the header material in the planned order.

Restriction

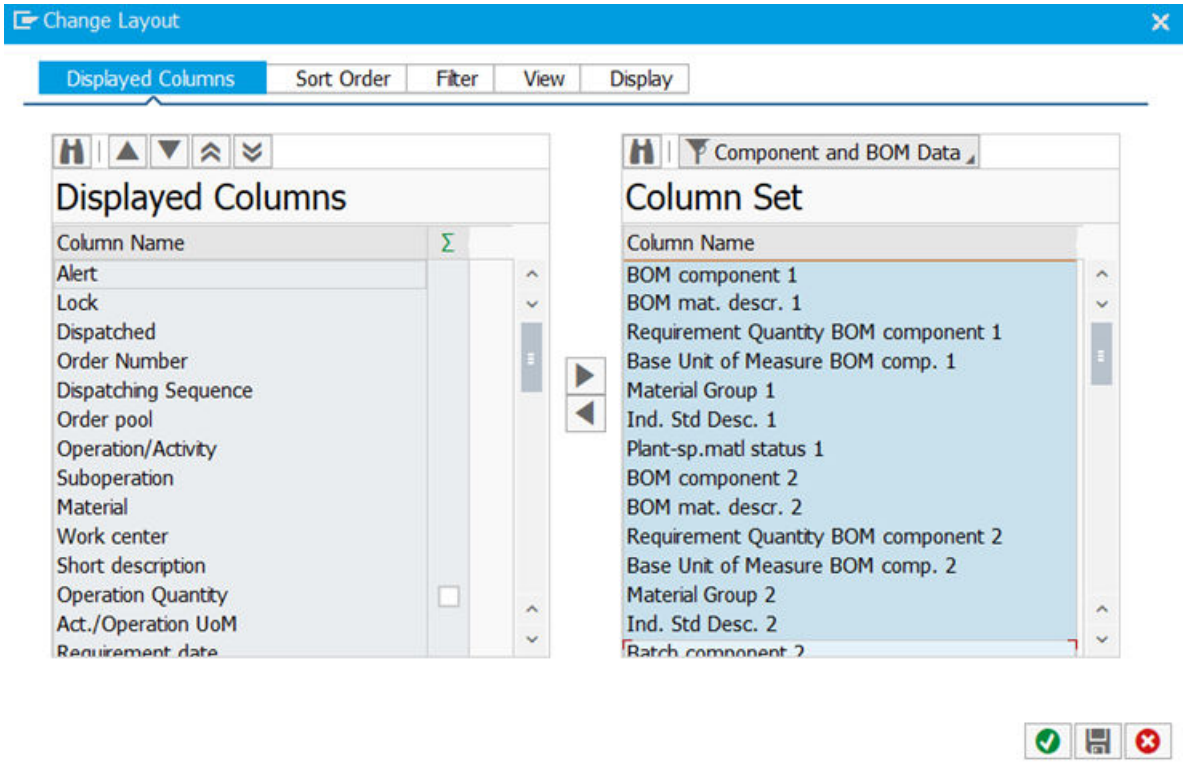
If the alert is to be used for the validity of the BOM, reading via the BOM must be activated. Group Alert [page 436]

The following fields are filled:

Field Name	Description
STKO1_SP	LMPC BOM component 1
MAKT1_SP	LMPC material short text 1
BDMNG1_SP	Required quantity BOM component 1
MEINS1_SP	Base unit of measure BOM component 1
MATKL1_SP	Material group 1
NORMT1_SP	Standard description 1
CHNRKP1_SP	Batch number component 1
MMSTA1_SP	Plant-specific material status 1

Field Name	Description
KZKUP1_SP	Co-product 1 indicator
SORTP1_SP	Sort string 1
to	
STKO12_SP	LMPC BOM component 12
MAKT12_SP	LMPC material short text 12
BDMNG12_SP	Required quantity BOM component 12
MEINS12_SP	Base unit of measure BOM component 12
MATKL12_SP	Material group 12
NORMT12_SP	Standard description 12
CHNRKP12_SP	Batch number component 12
MMSTA12_SP	Plant-specific material status 12
KZKUP12_SP	Co-product 12 indicator
SORTP12_SP	Sort string 12
COMPL_BOM_SP	List of all components
The following additional fields are only filled if reading via the BOM is activated:	
SDATV_SP	BOM valid from
SDATB_SP	BOM valid to
AENNR	Change number of next BOM change
AETXT	Short text next change number
DATUV	Date of next BOM change

You can use the layout settings of the ALV Grid to show the fields. The fields are located in the group of the component and BOM data.



ALV Grid Layout Field Selection

> → Tip
>
> If you want to name the fields differently, you can use the transaction /LMPC/FLD to assign different names.

The data provider CL_DP_BOM is the basis for other elements of the HJPT planning table. The data is required for the following elements:

- Data Provider /LMPC/CL_DP_BOM_BATCH_INFO Batches for BOM Components [page 457]
- Data Provider /LMPC/CL_DP_STOCK Stock Information [page 498]
- Data Provider /LMPC/CL_DP_USER_102 Characteristics and Characteristic Values [page 511]
- Two-Step Planning with Pool ID [page 296]

> ⚠ Restriction
>
> The logic of the data provider was developed based on customer requirements. This logic is not generically valid for all cases that can be configured in an SAP system.

2.7.7 Data Provider /LMPC/CL_DP_BOM_BATCH_INFO Batches for BOM Components

Data for batches of BOM items

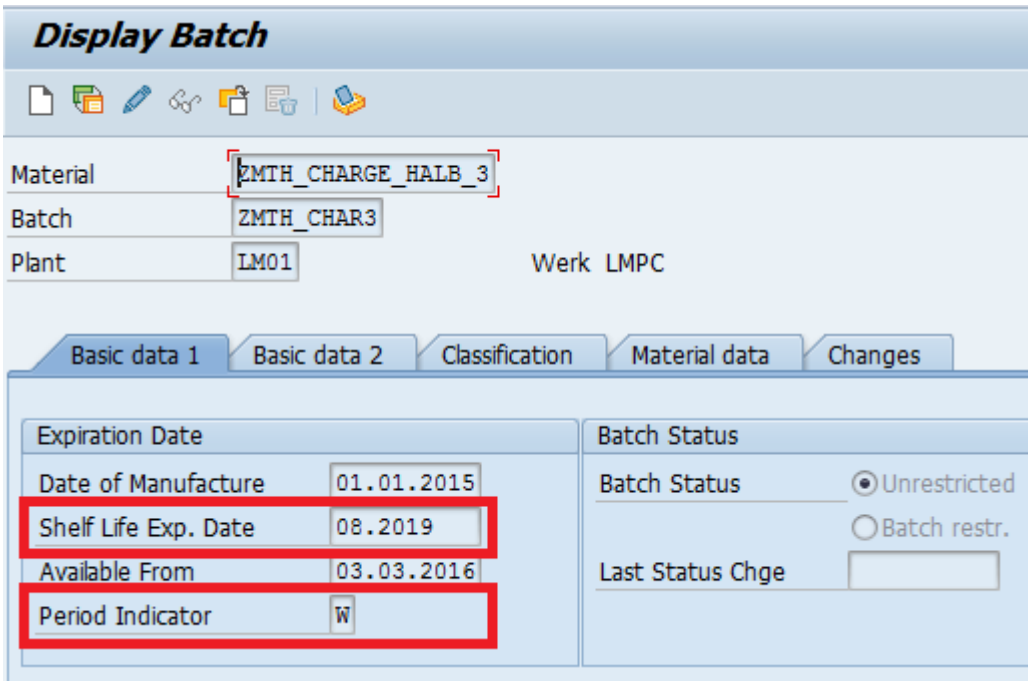
The data provider /LMPC/CL_DP_BOM_BATCH_INFO reads the shelf life expiration date and the period indicator of batches that are assigned to the BOM components of the production order or process order.

The following fields are filled:

Field Name	Description
VFDAT1_SP	Shelf life expiration date (SLED) or expiration date BOM item 1
IPRKZ1_SP	Period indicator for SLED / expiration date BOM item 1
to	
VFDAT12_SP	Shelf life expiration date (SLED) or expiration date BOM item 12
IPRKZ12_SP	Period indicator for SLED / expiration date BOM item 12

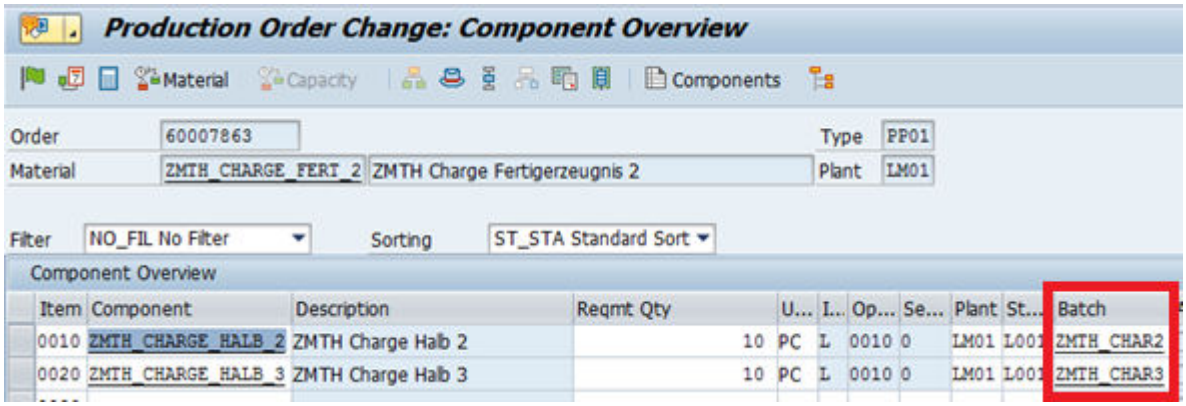
Example

At least one of the BOM materials of an order is identified as “subject to batch management requirement” in the material master. Corresponding batches exist for the materials (transaction MSC1N, MSC2N, MSC3N)



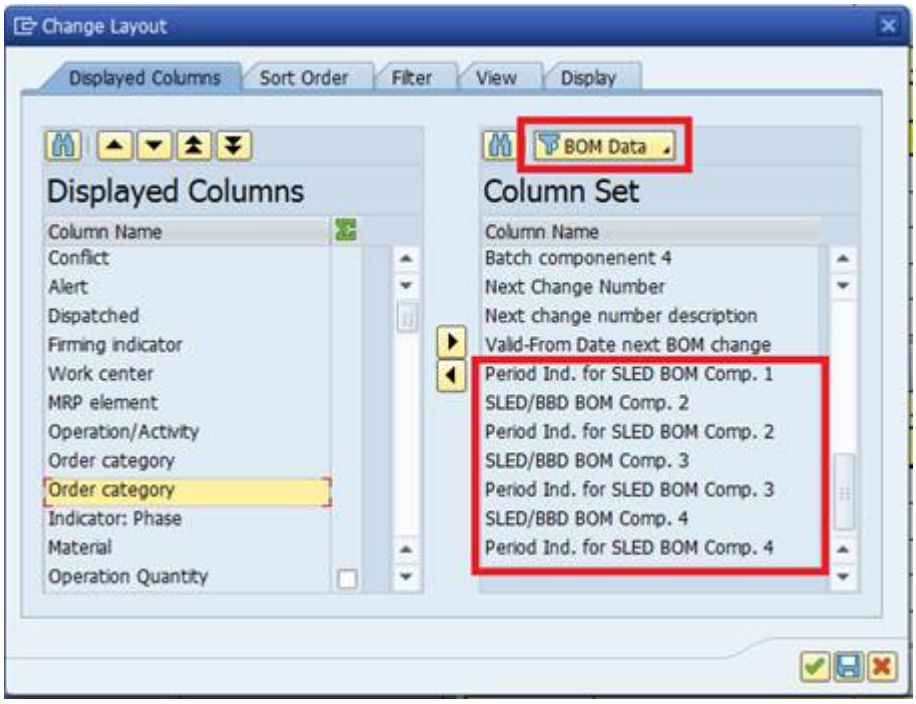
Example Batch

A production order is created for the finished product. The batch is assigned for the materials subject to batch management in the component list of the production order:



Production Order

The data provider /LMPC/CL_DP_BOM_BATCH_INFO LMPC provides the information on the shelf life expiration date/expiration date of the bill of materials in the ALV Grid, where this information can be shown (category: BOM data):



Columns in the Layout Settings

The information is now visible in the ALV Grid of the HJPT planning table:

SLED/BBD 1	Per. Ind.1	SLED/BBD 2	Per. Ind.2	SLED/BBD 3	Per. Ind.3	SLED/BBD 4	Per. Ind.4	Alert	I	F	Work ctr	Or
31.01.2018	D	08.2019	W		D		D		X		ZMTH_M...	60
31.01.2018	D	08.2019	W		D		D		X		ZMTH_M...	60
	D		D		D		D				ZMTH_P...	70

Fields in the ALV Grid

2.7.8 Data Provider /LMPC/CL_DP_CALC Calculations

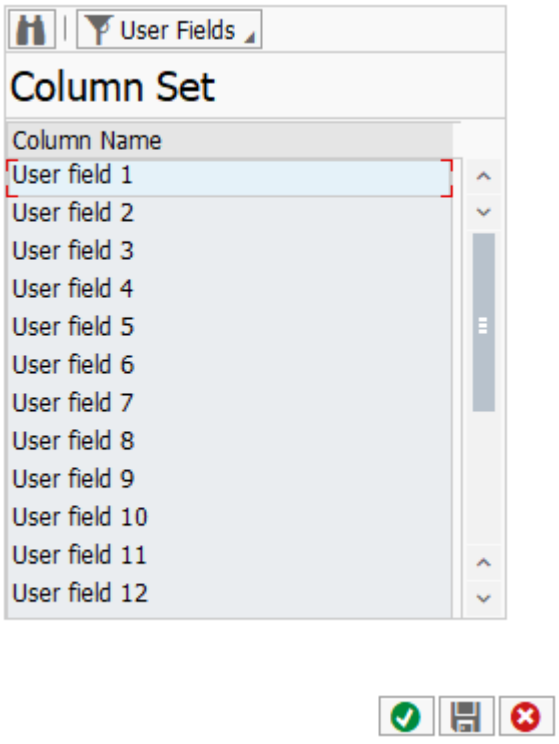
Perform calculations

You can use this data provider to perform simple calculations with the data of the ALV Grid of the LMPC HJPT planning table.

Only the four basic arithmetic operations are possible:

- Addition
- Subtraction
- Multiplication
- Division

You can use two fields of the ALV Grid of the HJPT planning table as operands in an equation. The result of the calculation is output via a user field.



User Fields

For details on configuration, see the LMPC Configuration Guide. There is also an application example.

Related Information

Data Provider /LMPC/CL_DP_CALC Configuration

2.7.9 Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing

Coloring the ALV Grid with simple rules

The HJPT detailed scheduling planning board contains two data providers for coloring the fields and lines of the ALV Grid.

- Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing
- Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]

For instructions on how to color fields and lines, see the LMPC Configuration Guide.



Example of a Colored ALV Grid

This section describes which color settings are delivered with the LMPC Customizing. The coloring is activated in the delivery for the sample profiles.

> ⓘ Note
>
> The settings are only examples and serve as a template on the basis of which the customer system settings can be made.

The color settings are made in transaction /LMPC/CUSTCOL.

Settings for the test profiles LMPC_T01 [page 30], LMPC_T02 [page 32], LMPC_T03 [page 33], LMPC_T05 [page 35]:

Field / Line Colored	Color	Condition
Whole line	Green	Dispatched operation of a planned order.
Whole line	Dark blue	Dispatched operation of a production order or process order.
Whole line	Red	If the work center of the operation is not a leaf node.
Oder number of production order or process order (AUFNR_FA)	Yellow	If the order is a production order/process order.
Order number (/LMPC/DELNR_CY)	Orange	If the order is a production order / process order
Status field 1 (FA_STATUS1_SU)	Red	If the field is filled with one of the following values: FMAT, FMAT NMVP, MSPT, MSPT MANC.
Status field 1 (FA_STATUS1_SU)	Yellow	If the field is filled with one of the following values: NMVP, MANC.

Status field 1 (FA_STATUS1_SU)	Green	If the field is filled with one of the following values: MABS, MACM.
Field dispatched (/LMPC/FLAG_EIGP_CY)	Green	If the order operation is dispatched and does not belong to a planned order
Field dispatched (/LMPC/FLAG_EIGP_CY)	Dark blue	If the order operation is dispatched and does not belong to a production order or process order
Field dispatched (/LMPC/FLAG_EIGP_CY)	Yellow	If the order operation has not been dispatched
Whole line	Orange	If the order of the operation is a service and maintenance order (order category = 30).
Buffer days field (RQDBFF_MD)	Green	If there are still enough buffer days until the requirement date (number of days < 0).
Buffer days field (RQDBFF_MD)	Yellow	If the MRP availability is the same as the requirement date (number of days = 0).
Buffer days field (RQDBFF_MD)	Red	If the MRP availability is after the requirement date (number of days > 0).

Settings for the test profile LMPC_T04 [page 34]:

Field / Line Colored	Color	Condition
Field order number (/LMPC/FLAG_EIGP_CY)	Dark green	The order has the status 'created'.
Field order number (/LMPC/FLAG_EIGP_CY)	Light green	The order has the status 'Released'.
Field order number (/LMPC/FLAG_EIGP_CY)	Orange	The order has the status 'partially confirmed'.
Whole line	Light gray-blue	The order is a planned order
Whole line	Dark gray-blue	The order is a production, process, or maintenance order.

Settings for the test profiles LMPC_T06 [page 36] and LMPC_T07 [page 40]:

Field / Line Colored	Color	Condition
Field Dispatched (/LMPC/FLAG_EIGP_CY)	Yellow	The operation is dispatched.

Field Dispatched (/LMPC/FLAG_EIGP_CY)	Red	There is a conflict in the equipment check.
Order Number field (/LMPC/DELNR_CY)	Yellow (LMPC_T06) Blue (LMPC_T07)	The order is partially confirmed.
Whole line	Green	The order is a maintenance order with order type PM01.
HJPT Firming Indicator field (HJPT_FIRM_AX)	Green	The HJPT firming indicator is set.

Settings for the test profiles LMPC_T08 [page 44] and LMPC_T09 [page 48]:

Field / Line Colored	Color	Condition
Field Dispatched (/LMPC/FLAG_EIGP_CY)	Yellow	The operation is dispatched.

Related Information

C07 and C08 Settings for Color Application in LMPC HJPT ALV Grid

2.7.10 Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas

Color the ALV Grid of the HJPT planning table using formulas

The data provider /LMPC/CL_DP_COLOR only allows you to create simple rules for coloring the ALV Grid.

You can use the data provider /CL_DP_COLOR_FORMULA to define more complex rules. It is possible to perform calculations. For example, a certain number of days can be subtracted from a date.

For instructions on how to color fields and rows, see the LMPC Configuration Guide. C07 and C08 Settings for Color Application in LMPC HJPT ALV Grid

This section describes which color settings are delivered with the LMPC Customizing. The coloring is activated in the delivery for the sample profiles.

> ⓘ Note
>
> The settings are only examples and serve as a template on the basis of which the customer system settings can be made.

> ⚠ Caution
>
> Coloring with formulas requires considerably more runtime than traditional coloring. Therefore, as few formulas as possible should be defined.

The color settings are made in transaction /LMPC/CUSTCOL_FML.

Settings for the test profiles LMPC_T01 [page 30], LMPC_T02 [page 32], LMPC_T03 [page 33], LMPC_T05 [page 35]:

Field / Line Colored	Color	Condition
Latest start / date field (SSTAD_KB)	Dark blue	Condition always fulfilled.
Latest start / date field (SSTAD_KB)	Green	If the date of the latest start is less than 5 days in the future.
Latest start / date field (SSTAD_KB)	Yellow	If the date of the latest start is less than 3 days in the future.
Latest start / date field (SSTAD_KB)	Orange	If the date of the latest start is earlier than the current date.
Latest start / date field (SSTAD_KB)	Red	If the date of the latest start is 2 or more days in the past
Latest end / date field (SENDD_KB)	Orange	If the latest end date is today and the time of the latest end is less than 1 hour in the past.
Latest end / date field (SENDD_KB)	Red	If the latest end date is earlier than the current date
Remaining capacity requirement field (KBREST_SU)	Green	Always fulfilled.
Order Pool field (/LMPC/POOL_GUID_CY)	Orange	If a pool ID exists.
Free capacity in dispatching gap field (LGTHGAP_TM)	Red	If the free capacity is greater than 16 hours
Free capacity in dispatching gap field (LGTHGAP_TM)	Orange	If the free capacity is less than or equal to 16 hours.
Free capacity in dispatching gap field (LGTHGAP_TM)	Yellow	If the free capacity is less than or equal to 8 hours.
Free capacity in dispatching gap field (LGTHGAP_TM)	Green	If the free capacity is less than or equal to 4 hours.

Free capacity in dispatching gap field (LGTHGAP_TM)	Dark blue	If the free capacity is less than or equal to 2 hours
Status field 2 (FA_STATUS2_SU)	Yellow	If status field 2 contains the value "EROF"
Requirement date field (BDTERM_MD)	Light blue	If the requirement date is empty.
Requirement date field (BDTERM_MD)	Red	If the requirement date is before the latest end date of the operation.
Requirement date field (BDTERM_MD)	Red	If the requirement date is before the current date.
Requirement date field (BDTERM_MD)	Yellow	If the requirement date is the same as the latest end date of the order.
Requirement date field (BDTERM_MD)	Green	If the requirement date is after the latest end date of the order.
Operation number field (VORNR_KB)	Red	If the latest start date is before or on yesterday and the status in the status field 3 is not "TRÜC" and the order category is "10".
Order number field (/LMPC/ DELNR_CY)	Red	If the latest start date is in the past, the status is not released, and the order category is a production order.
Field: Date to Completion of Task (FINISHED_UNTIL_ME)	Green	If the completion date is in the future.
Field: Date to Completion of Task (FINISHED_UNTIL_ME)	Yellow	If the completion date is today.
Field: Date to Completion of Task (FINISHED_UNTIL_ME)	Red	If the completion date is in the past.
Resubmission date field (RESUBMISSION_DATE_ME)	Green	If the resubmission date is in the future.
Resubmission date field (RESUBMISSION_DATE_ME)	Yellow	If the resubmission date is today.
Resubmission date field (RESUBMISSION_DATE_ME)	Red	If the resubmission date is in the past.
Field: MRP Availability (STODA_MD)	Orange	If the date of the MRP availability is later than the requirement date.

Settings for the test profile LMPC_T04 [page 34]:

Field / Line Colored	Color	Condition
Requirement Date field (BDTERM_MD)	Red	If the requirement date is earlier than the date of dispositive availability.
Requirement Date field (BDTERM_MD)	Yellow	If the requirement date is the same as the date of dispositive availability.
Latest end / date field (SENDD_KB)	Yellow	If the latest end date of the operation is in the past.

Settings for the test profiles LMPC_T06 [page 36], LMPC_T07 [page 40], and LMPC_T08 [page 44]:

Field / Line Colored	Color	Condition
Requirement Date field (BDTERM_MD)	Red	If the requirement date is earlier than the latest end date of the capacity requirement.

2.7.11 Data Provider /LMPC/CL_DP_COMB_USRFLD - Merge Data

Group data in fields

You can use this data provider to write data from fields of the ALV Grid of the LMPC HJPT planning table to other fields of the ALV Grid.

In the ALV Grid, data for one order type is displayed in different fields than the same data for a different order type. For example, the production version for planned orders is in the field VERID_PA, for production and process orders, it is in the field VERID_FA. You can use the data provider to transfer the data of different fields to one field.

All fields of the HJPT planning table are available as start and target fields for the data provider. However, it must be taken into account that fields in the LMPC HJPT ALV Grid have different data types.

The data provider has been developed to fill the LMPC user fields.

There are three types of user fields:

- User fields 1-20: data type character, length 40 characters
- User fields 21-25: Date data type.
- User fields 26-30: Data type 13-digit number with three decimal places.

The data type of the target field must be taken into account during the transfer.

Only data with dates or numbers can be transferred to the user fields for the date in the numbers.

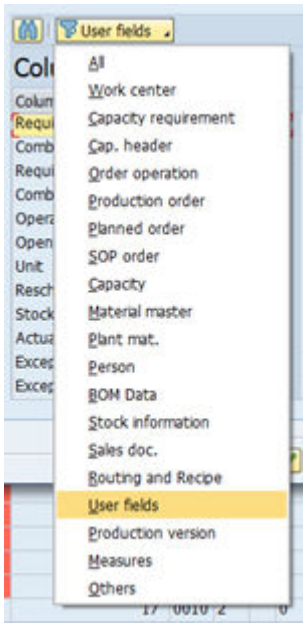
The user fields for date and numbers have been created to allow sorting by number and date.

The user fields 1-20 can include the data of all data types. There is a logic to convert the data from the original fields to character format.

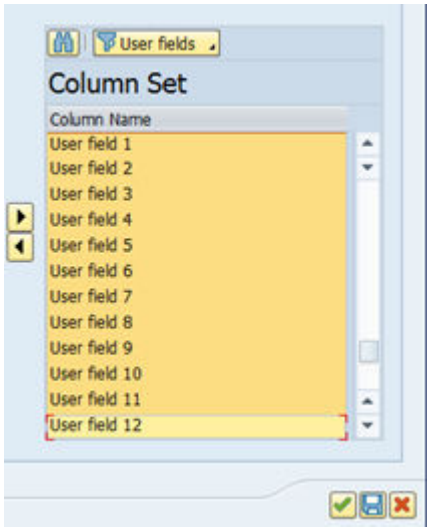
If fields other than the user fields are used as target fields, the data is also converted to character format.

If the data from multiple fields is written to one field, then, depending on the settings, this data is either combined, meaning concatenated, or overwritten. If overwrite is selected, the last value written to the field overrides all other values. A value is written to a field only if the source field is not empty. This prevents the information from being overwritten with an empty value.

The user fields 1-30 can be found in the “User fields” group.



ALV Grid Layout Groups - Selection of User Fields



Fields in the ‘User Fields’ Group

→ Remember

You can use transaction /LMPC/FLD to change the name of the fields in the field catalog, to give the fields different column headings.

Related Information

Data Provider /LMPC/CL_DP_COMB_USRFLD Configuration: Merge data

2.7.12 Data Provider /LMPC/CL_DP_COUNT Count, Calendar Weeks, and Weekdays

Calendar Data and Counting of Orders

This data provider fills counting fields for order numbers and operations in the ALV Grid. It also performs operations calculations for the calendar week of start and end times, and also generates the weekdays for these times.

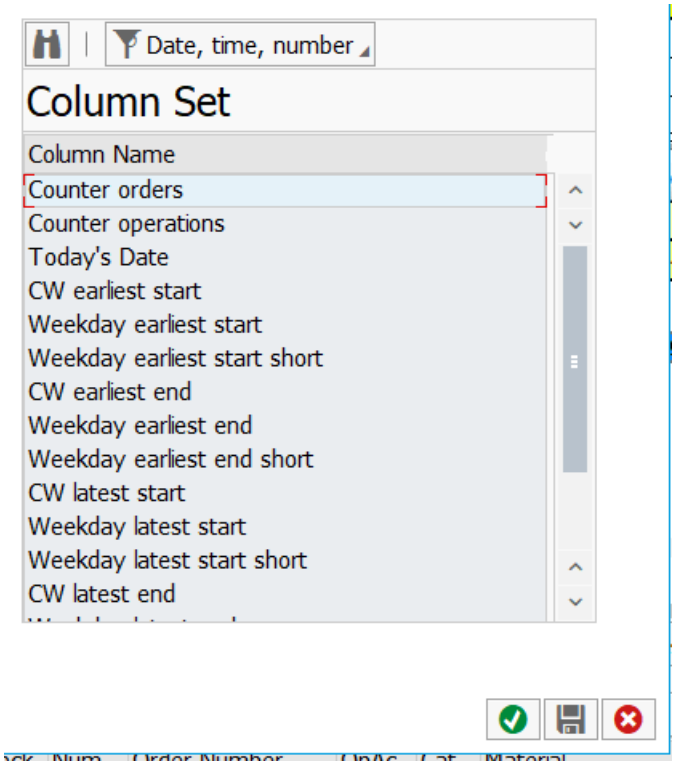
The following fields are filled:

Data Provider Fields

Technical Field Name	Description
COUNT_ORD_TM	Counter for number of orders
COUNT_OP_TM	Counter for number of operations
SYDATLO_TM	Current date
KW_FSTAD_TM	Calendar week earliest start
DAY_FSTAD_TM	Weekday earliest start
DAY_FSTAD_SH_TM	Weekday earliest start short
KW_FENDD_TM	Calendar week earliest end
DAY_FENDD_TM	Weekday earliest end
DAY_FENDD_SH_TM	Weekday earliest end short
KW_SSTAD_TM	Calendar week latest start
DAY_SSTAD_TM	Weekday latest start
DAY_SSTAD_SH_TM	Weekday latest start short
KW_SENDD_TM	Calendar week latest end
DAY_SENDD_TM	Weekday latest end
DAY_SENDD_SH_TM	Weekday latest end short
KW_BTERM_TM	Calendar week requirement date

Technical Field Name	Description
DAY_BTERM_TM	Weekday requirement date
DAY_BTERM_SH_TM	Weekday requirement date short
KW_DATE1_TM	Calendar week date 1
DAY_DATE1_TM	Weekday date 1
DAY_DATE1_SH_TM	Weekday date 1 short
KW_DATE2_TM	Calendar week date 2
DAY_DATE2_TM	Weekday date 2
DAY_DATE2_SH_TM	Weekday date 2 short

The fields are in the layout group for date, time, and number.



Fields in Layout Group

Example fields in the ALV Grid:

Earliest start	Earl.start	Earl. finish /date	Erl.finish time	Today's Date	CW earl.start	Weekday earliest start	W..	CW earliest end	Weekday earliest end	Wd..	CW lat.st.	Weekday lat. start	W..	CW latest end	Weekday latest end	Wd..
12.08.2020	09:00:00	12.08.2020	18:00:00	02.09.2020	CW33	Wednesday	WE	CW33	Wednesday	WE	CW33	Wednesday	WE	CW33	Wednesday	WE
18.08.2020	16:36:00	25.08.2020	18:00:00	02.09.2020	CW34	Tuesday	TU	CW35	Tuesday	TU	CW34	Tuesday	TU	CW35	Tuesday	TU
19.08.2020	12:30:00	27.08.2020	14:54:00	02.09.2020	CW34	Wednesday	WE	CW35	Thursday	TH	CW34	Wednesday	WE	CW35	Thursday	TH
29.08.2020	14:00:00	29.08.2020	18:00:00	02.09.2020	CW35	Saturday	SA	CW35	Saturday	SA	CW35	Saturday	SA	CW35	Saturday	SA
29.08.2020	16:00:00	29.08.2020	18:00:00	02.09.2020	CW35	Saturday	SA	CW35	Saturday	SA	CW35	Saturday	SA	CW35	Saturday	SA
01.09.2020	14:00:00	01.09.2020	18:00:00	02.09.2020	CW36	Tuesday	TU	CW36	Tuesday	TU	CW36	Tuesday	TU	CW36	Tuesday	TU
02.09.2020	13:20:00	02.09.2020	18:00:00	02.09.2020	CW36	Wednesday	WE	CW36	Wednesday	WE	CW36	Wednesday	WE	CW36	Wednesday	WE
02.09.2020	17:00:00	02.09.2020	18:00:00	02.09.2020	CW36	Wednesday	WE	CW36	Wednesday	WE	CW36	Wednesday	WE	CW36	Wednesday	WE
03.09.2020	14:00:00	03.09.2020	18:00:00	02.09.2020	CW36	Thursday	TH	CW36	Thursday	TH	CW36	Thursday	TH	CW36	Thursday	TH
03.09.2020	15:00:00	03.09.2020	18:00:00	02.09.2020	CW36	Thursday	TH	CW36	Thursday	TH	CW36	Thursday	TH	CW36	Thursday	TH
03.09.2020	16:00:00	03.09.2020	18:00:00	02.09.2020	CW36	Thursday	TH	CW36	Thursday	TH	CW36	Thursday	TH	CW36	Thursday	TH

Fields in the ALV Grid

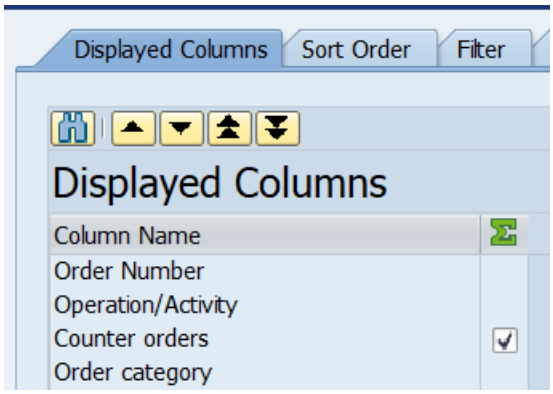
The calculation of the calendar week and the texts of the weekdays is based on the data of the capacity requirements. The earliest and latest start dates, as well as the earliest and latest end dates are used. Furthermore, the calendar week and the weekday are calculated for the requirement date.

There are also six additional fields for which you can use the configuration to define the data with which they are filled. You can use the parameters for the data provider to transfer two field names of any date fields. From this, the data provider calculates the following fields: Calendar Week, Weekday, and Weekday Short Description. For the description of the configuration, see the LMPC Configuration Guide. Data Provider /LMPC/CL_DP_COUNT Configuration: Count Orders, Calendar Weeks, and Weekdays

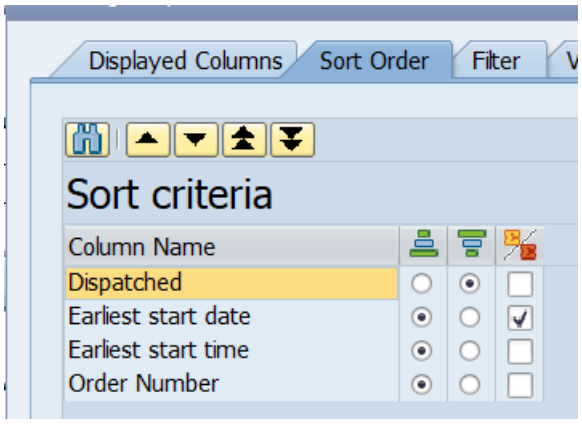
The fields for counting the orders are used to read the number of operations or orders when using totals rows in the ALV Grid.

Example

The system totals using the counter for the orders and sets the subtotals for the earliest start date.



Summation Using the Order Counter



Subtotal Using Earliest Start Date

The following screen then appears:

Alert	D	F...	Order	OpAc	Σ Counter orders	Category	Ph	Material
		X	2925427	0020	1	2		LMPC_HALB_12
		X	2925427	0020	0	2		LMPC_HALB_12
Earliest start date 02.09.2019					**1**			
			60007815	0020	1	1		LMPC_HALB_12
			60007815	0020	0	1		LMPC_HALB_12
		X	2925851	0020	1	2		LMPC_HALB_12
		X	2925851	0020	0	2		LMPC_HALB_12
		X	2929765	0020	1	2		LMPC_HALB_12
		X	2929765	0020	0	2		LMPC_HALB_12
		X	2916131	0020	1	2		LMPC_HALB_12
		X	2916131	0020	0	2		LMPC_HALB_12
Earliest start date 04.09.2019					**4**			
		X	2929767	0020	1	2		LMPC_HALB_12
		X	2929767	0020	0	2		LMPC_HALB_12
Earliest start date 09.09.2019					**1**			
		X	2928642	0020	1	2		LMPC_HALB_12

Subtotals in the ALV Grid Using the Order Number on the Start Date

→ Tip

- You can use the counters to calculate subtotals for orders for each material number, for example, so that you can see the number of orders for each material number at a glance.
- The calendar week field can be used as a sort criterion for dispatching functions. For example, for S_EPSRT. S_EPSRT Sorted Dispatching [page 217]

2.7.13 Data Provider /LMPC/CL_DP_CTC CTC Data

Identification of CTC Planned Orders

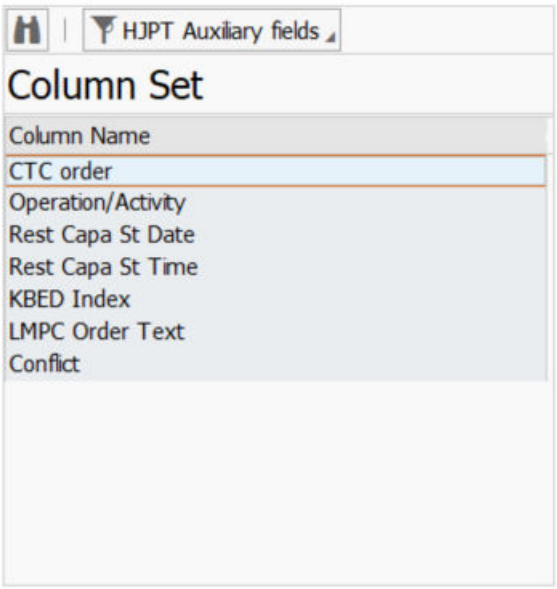
This data provider reads the identification of orders that were created with the consulting solution CTC.

This data provider is useful only in connection with the consulting solution CTC. Capable to Confirm (CTC)

It fills a field of structure /LMPC/HJPT_F01:

- CTC_AX Indicator: Order originates from CS CTC

The field is in the layout settings in the group of HJPT help fields:



CTC Field in the Layout Groups

It can be displayed to identify which planned order was created using the consulting solution CTC.

Alert	Dispatched	F...	CTC	Order pool	Lock	Num...	Order Number	OpAc	Cat	Material
●○○	X	X		888			3127483	0010	001	LMPC_FERT_12
○▲○	X	X		888			3127525	0020	001	LMPC_FERT_34
○▲○	X	X					3127565	0010	001	LMPC_FERT_34
○▲○	X	X					3127566	0010	001	LMPC_FERT_34
●○○	X	X	X				3224591	0010	001	LMPC_HALB_34
●○○	X	X	X				3224591	0020	001	LMPC_HALB_34
●○○	X	X	X				3224591	0030	001	LMPC_HALB_34

CTC Field in ALV Grid

2.7.14 Data Provider /LMPC/CL_DP_CYPP0005 User Exit: CYPP0005

Fields from User Exit

This data provider reads fields that are filled in the user exit of the capacity planning table EXIT_SAPLCYPP02_001 in structure CI_CYUSER, if this user exit is defined.

This data provider can be used to read data from field extensions in the customer namespace. To save runtime, this data provider processes new and changed data records only.

> ⓘ Note
>
> Enhancements in the customer namespace are not subject to LMPC consulting support.

2.7.15 Data Provider /LMPC/CL_DP_DB_FLDS Read Database Fields

Fill user fields

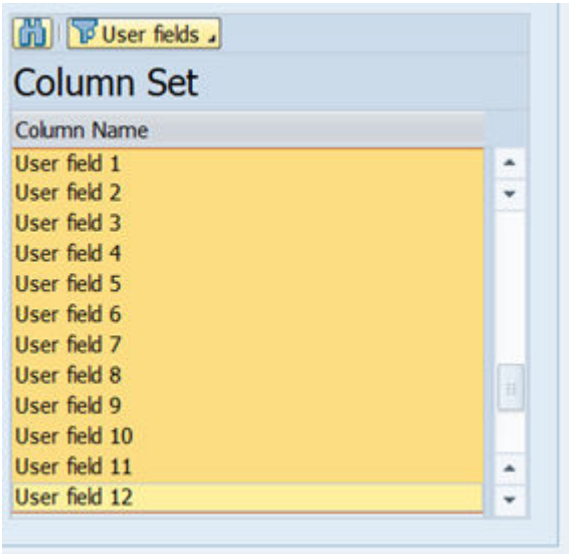
The data provider /LMPC/CL_DP_DB_FLDS is used to read any fields from database tables and to display them in the LMPC HJPT ALV Grid. This data provider enhances the HJPT standard with the option of reading fields that are not supported in the HJPT planning table. For example Z fields of database tables.

There are 30 fields available to be filled:

Field Name	Description	Data Type
/LMPC/USR1_CY to /LMPC/USR20_CY	User field 1- 20	Character-like fields
LMPC/USR21_CY to /LMPC/USR25_CY	User field 21-26	Fields for date
/LMPC/USR26_CY to /LMPC/USR30_CY	User field 26-30	Fields for number with three decimal places

Fields 1-20 can also be used for dates and numbers. However, if you use the fields 21-26 for dates and the fields 26-30 for numbers, the data records in the ALV Grid can be sorted usefully using the standard sort function.

The fields can be found in the “User fields” group.



Layout Settings for ALV Grid User Fields

The column headers of the fields are User field 1 – 30. You can use transaction /LMPC/FLD to personalize these column headers. C10 Transaction /LMPC/FLD: Rename, Group, and Remove ALV Grid Columns

> → Tip
>
> The data provider can be used in conjunction with the action class /LMPC/CL_ACTION_SET_DBFLDS and an action code based on this class, for example, action code S_SVDBF.

This action code allows you to store values in database fields.

The combination of action code and data provider enables you to read and save in fields of any database tables.

S_SVDBF Save Data to Database Tables [page 416]

Related Information

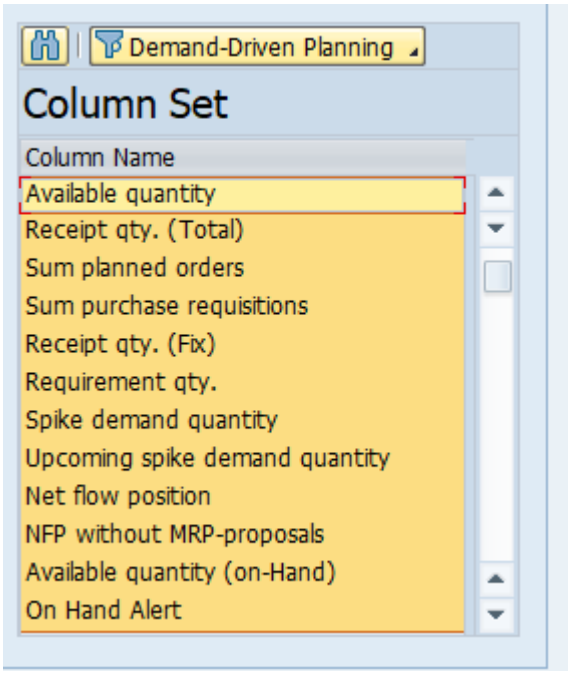
Data Provider /LMPC/CL_DP_DB_FLDS Configuration: Reading Database Fields

2.7.16 Data Provider /LMPC/CL_DP_DDP Demand-Driven Planning

Data Provider for DDP Fields

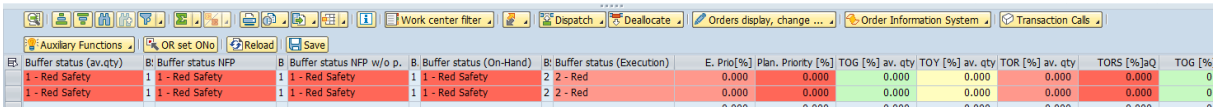
The data provider provides the fields for the demand-driven planning scenario.

The DDP fields can be found in the layout settings of the LMPC ALV Grid in the Demand-Driven Planning group.



Fields for Demand-Driven Planning

You can use the layout settings to show the fields.



Example DDP Fields in ALV Grid of HJPT Planning Table

> → Remember
>
> All values of DDP are calculated at the header material level of the order. Therefore, values for operations for the same material are identical.

The displayed DDP data can be used for planning.

For example, the ALV Grid can be sorted according to key figures. Scheduling can be carried out using the sort sequence in the ALV Grid.

You can also use the action code S_EPSRT to execute scheduling by DDP key figures according to a sort sequence previously defined in Customizing.

For more information about using DDP key figures for planning in the HJPT planning table, contact your LMPC consultant.

The data provider is used to color the fields. If a different coloring is required, you can override the coloring of the fields using the LMPC standard settings for ALV Grid coloring.

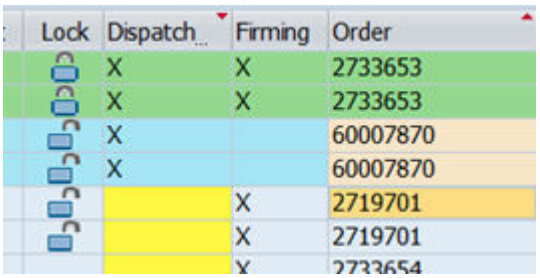
> ⓘ Note
>
> For the fields to be available in the HJPT planning table, a field enhancement must be carried out and the data provider must be activated. For details on this, see the LMPC Configuration Guide. Data Provider / LMPC/CL_DP_DDP Configuration: Demand-Driven Planning

The data in the DDP fields is determined using the SCM consulting solution DDP. This is a different logic than demand-driven planning in SAP S/4HANA. For more information on DDP, see the DDP documentation of the SCM consulting solutions. This is not part of the LMPC documentation.

2.7.17 Data Provider /LMPC/CL_DP_ENQUEUE Order Locks (Icon)

Display locks

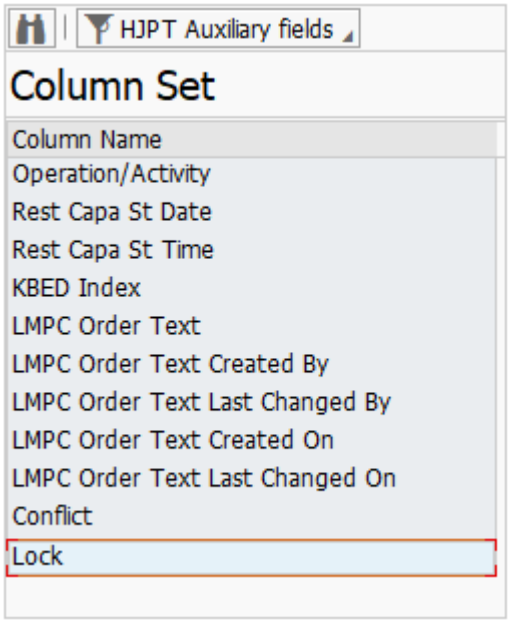
This data provider reads the locks on order operations and displays them in the HJPT planning table.



Example Locks on Operations

Field: ENQUE_ICON_AX

The field is in the group of help fields.



Layout Settings Field Selection User Fields

You can distinguish between two types of locks:

- Self Lock 
- Foreign Lock 

The **self lock**  (symbol: open padlock) indicates that the lock has been set by this program. For example, an order was changed via the HJPT detailed scheduling planning board. In the standard system, this self lock is only set for planning activities (dispatch, deallocation) for production and process orders. The HJPT planning table sets locks for planned orders if this is activated using the settings for the control table. C16 Transaction /LMPC/STEU LMPC: Control Parameter When changes are made to orders via action code S_AK02 (for example, double-click or click the hotspot on the order number), self locks are set for planned, production, and process orders. All orders with a self lock can be dispatched and changed within the HJPT planning table. All orders with a self lock cannot be changed by other transactions while these orders are open within the HJPT planning table.

The **foreign lock**  (symbol: closed padlock) indicates that the order is locked by another transaction. For example, a production order is open in transaction CO02, or the order has been opened and changed in another LMPC HJPT instance. Production and process orders with a foreign lock cannot be changed in the HJPT planning table, neither can they be dispatched. Planned orders with a foreign lock cannot be changed in the HJPT planning table. However, it is possible to plan planned orders with foreign locks if the locks for planned orders have been deactivated in the control table. C16 Transaction /LMPC/STEU LMPC: Control Parameter

Also refer to the notes on the lock mechanism, which is explained in a separate chapter. Locking Mechanism for Changed Data [page 100]

> ⓘ Note
>
> The behavior described here refers to the settings in the standard test profiles for the capacity planning table. It is possible to convert the locking behavior of the capacity planning table. For example, you can convert it so that all production orders and process orders that are opened are locked automatically. Another alternative is that you can set that all orders are blocked in the order pool. For details on this, see the LMPC Configuration Guide. Data Provider /LMPC/CL_DP_ENQUEUE Configuration: Read Locks

> → Tip
>
> Action code S_LOCK allows the user to set manual locks for the orders. S_LOCK Temporarily Lock Orders [page 402]

2.7.18 Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships

This data provider has two different logics that can be activated separately from each other.

- Calculation of dispatching gaps
- Calculation of predecessor-successor relationships

Dispatching Gaps

The data provider /LMPC/CL_DP_GAP calculates the start and the free capacity of a gap in the production plan. All operations that are dispatched are taken into account. The duration is calculated as free capacity in hours, minutes, and seconds. Individual capacities are also taken into account. Each additional individual capacity provides more capacity offer.

The calculation is carried out for each work center for all open work centers. The calculation is performed only for periods from the current point in time into the future and only for dispatched operations.

The gaps are displayed for the operation before which the gap occurs. If a gap is displayed, this is a note for the planner that the respective operation can be dispatched earlier, if necessary.

This data provider can be used in connection with the action codes S_MANPL and S_EPSELL. You can configure the dispatching functions of these action codes so that they check for gaps in the production plan.

S_MANPL Manual Dispatching List with Gap Check [page 235]

S_EPSELL Dispatching with Check on Gaps and Pool Orders [page 210]

Predecessor-Successor Relationships

The data provider has a further logic for calculating predecessor-successor relationships between operations.

The data provider determines the immediate predecessor for each operation, whether it is an operation of the same order or the last operation of an order that is determined using the logic of the requirement date using the order relations (Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]).

Predecessor means linked element in the direction of raw materials, where only orders can be linked. For the predecessor, the latest end date of the capacity requirement is displayed from the predecessor operation.

For each operation, the data provider also displays the immediate successor, whether it is an operation of the same order or the first operation of an order that is connected via the order relations. Successor means linked element in the direction of the pegged requirement. The system displays linked orders and requirements elements, such as planned independent requirements, safety stock, and sales orders. For the successor, the earliest start date of the operation is displayed for the subsequent operation. For pegged requirements such as planned independent requirements that do not have a time, the requirement date is output with the time 0:00.

If no predecessor or successor can be determined for an activity, the corresponding fields remain empty.

For the subsequent elements, the linear time is calculated from the end of the operation to the start of the subsequent element. If the operation is the last capacity-relevant operation for this order, the linear time for the subsequent pegged requirement is calculated.

If the subsequent pegged requirement is an order, the first capacity-relevant operation of this order is determined. The predecessor-successor relationships are then calculated between the latest end of the predecessor operation and the earliest start of the successor operation. In this case, the time shows the period between the two operations and not the period for the requirement date. Queue, float before production, safety time, and goods receipt processing times that can be set for production in the master data are not taken into account. The calculation is performed only with the pure operation dates of the capacity requirements.

If the successor is not an order, for example, for a planned independent requirement, the calculation uses the requirements date of the subsequent MRP element and the time 0:00. In this case, the time shows the period for the requirements date in which there is a capacity offer.

The time for the subsequent element is also calculated and displayed in the list of order relations. List of Order Relations [page 86]

The linear time is calculated based on the periods for which there are capacity offers at the work center of the operation. The calculation uses the work center of the predecessor operation. Only the linear time between the start and end time of an offer is calculated and not the capacity offer itself. The start and end times of the capacity offer are derived from the standard offer, the intervals, and shift schedules. When you define the capacity offer, you can define a break duration within a period. This break duration is not taken into account in the calculation since this break has no fixed start and end dates and only reduces the available capacity offer.

A positive number means that the corresponding operation can be shifted into the future by this time to still be completed in time before the subsequent element starts. Whereas a negative number means that the operation is too late for the subsequent element and should be planned earlier. If there is no time interval between the predecessor and successor, 00:00:00 is output. If there is no successor for an operation, the field remains empty. The calculation is performed for both dispatched and non-dispatched operations over the entire planning period and beyond if the pegged requirements are outside the planning period.

→ Remember

- The calculations differ in two aspects. The **dispatching gap** is calculated as the capacity offer. The calculation is performed only from the current point in time into the future. Whereas the **time to the next element** is calculated as the linear time between two points in time. The calculation is performed in the past as well as in the future.
- In this data provider, the linear time is calculated to the second between the end of the operation and the start of the successor. There is a further calculation of floats in the HJPT planning table. In the data provider CL_DP_USER_104, the time buffer between the planning availability of the order and the

requirement date is calculated to the exact days. Data Provider /LMPC/CL_DP_USER_104 Calculate Buffer Days [page 516]

The calculation of the time for the successor uses a lot of runtime and is deactivated in the standard delivery. You can use the settings to activate or deactivate the calculation for the gaps and the calculation of the time for the successor. Data Provider /LMPC/CL_DP_GAP Configuration: Calculate Dispatching Gaps and Predecessor-Successor Relationships

Fields

Technical Field Name	Description
Fields for Gap Calculation	
STRTGAP_TM	**Start gap** Date and time
LGTHGAP_TM	**Free capacity gap** Maximum 99 hours.
Predecessor-Successor Relationship Fields	
OP_START_TMSTP	**Operation start time stamp**
OP_END_TMSTP	**Operation end time stamp**
PRDCS_DELNR	**Predecessor order number**
PRDCS_VORNR	**Predecessor operation number**
PRDCS_END_DATE	**Predecessor latest end date**
PRDCS_END_TIME	**Predecessor latest end time**
PRDCS_END_TMSTP	**Predecessor latest end time stamp**
SCCS_DELNR	**Successor order number or MRP element (SH = safety stock, VSF= planned independent requirement)**
SCCS_VORNR	**Successor operation number**
SCCS_START_DATE	**Earliest successor start date**
SCCS_START_TIME	**Earliest successor start time**
SCCS_START_TMSTP	**Earliest start time timestamp**
BFFTFL_TM	**Buffer time for the subsequent element.** Display of hours, minutes, and seconds. Maximum 999 hours.

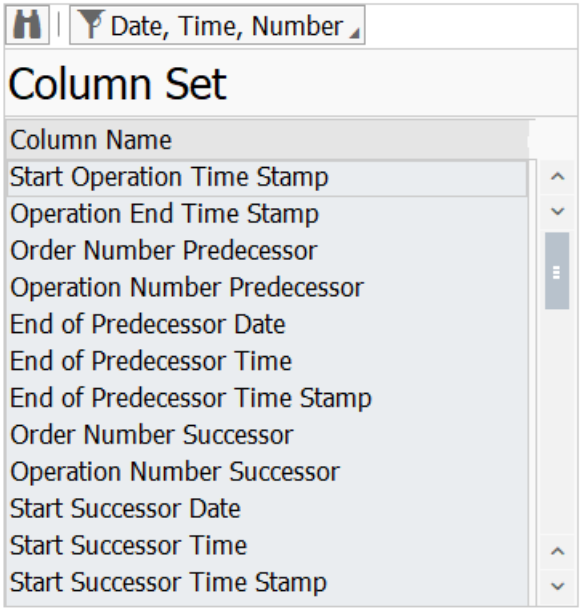
Technical Field Name	Description
BFFTFLS_TM	**Buffer time for subsequent element (short)** Display of hours and minutes. Maximum 999 hours. Rounded down to full minutes.

The timestamp fields can be used for coloring and defining alerts. You can easily make comparisons with these fields.

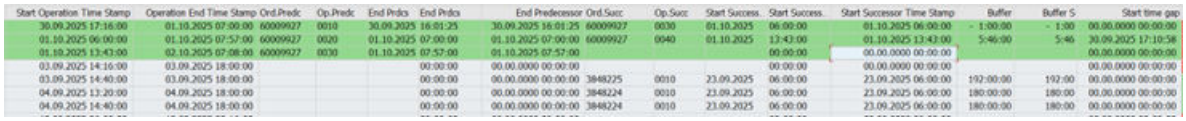
Single Alerts [page 435]

Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]

The fields are in groups Date, Time, and Number.



Layout Settings



Fields in the ALV Grid

> ⓘ Note
>
> The fields for the float for the successor only allow a restricted sorting. If the data is sorted in ascending order according to this field, first the positive data is sorted in ascending order, then the negative data is arranged in ascending order.

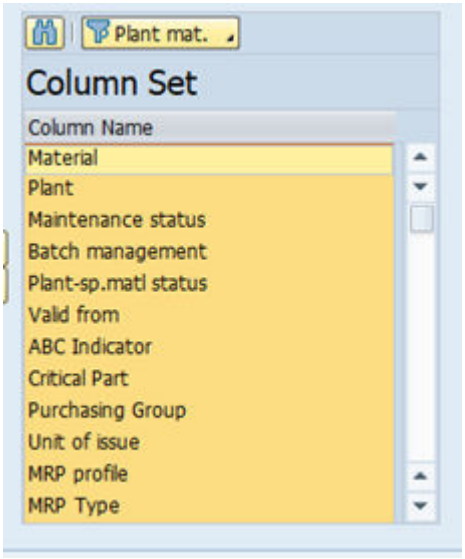
> ⚠ Restriction
>
> The following applies to both logics:
>
> The calculation is only performed for the capacity relevant for scheduling.

The calculation is correct if the operations on the resource are dispatched one after the other without overlapping. Parallel operations, suboperations, and overlaps are not taken into account. The logic assumes that the operation number specifies the sequence of the operations. In the case of parallel sequences, only the data for the standard sequence is displayed.

2.7.19 Data Provider /LMPC/CL_DP_MARC Plant Data for Material

Data from table MARC

The data provider /LMPC/CL_DP_MARC reads the plant data for the material of the respective order. The fields can be found in the layout settings group 'plant material'.



Layout Settings

You can use the settings to activate the reading of the maximum stock level for materials in co-production that are displayed in the BOM fields. Data Provider /LMPC/CL_DP_MARC Configuration: Plant Data for Material

2.7.20 Data Provider /LMPC/CL_DP_MAT_ADD Material Additional Data

Material additional data units of measure

The data provider CL_DP_MAT_ADD reads additional data for materials. An alternative short text, the first line of the material basic data text, and up to 14 alternative quantities can be output.

Alternative Short Text

In the additional data for the material, the short texts for the material can be stored in different languages. For each header material of an order, it is possible to display the short text of a selected language that is not the logon language. Data Provider /LMPC/CL_DP_MAT_ADD Configuration: Additional Material Data

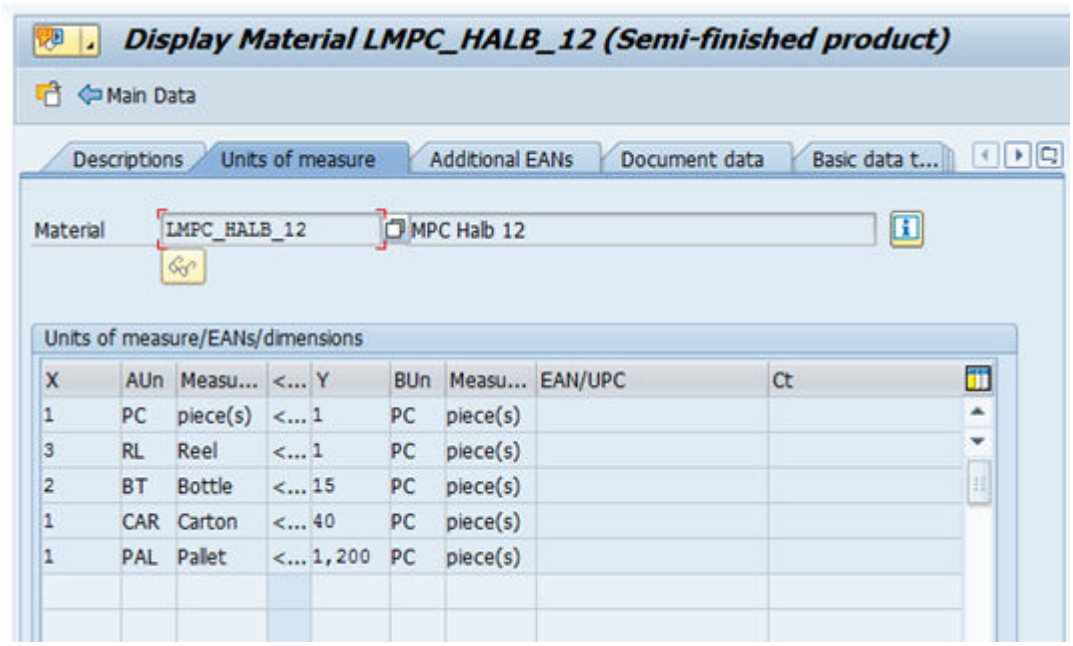
Material Basic Data Text

The first line of the material basic data text for the header material of the order can be output in the ALV Grid. Here you can also set which alternative language it is displayed in. Data Provider /LMPC/CL_DP_MAT_ADD Configuration: Additional Material Data

> → Tip
>
> The material basic data text can be changed using the action code S_BMATXT. S_BMATXT Change Material Basic Data Text [page 382]

Alternative Units of Measure

In the material master, units of measure in addition to the base unit of measure can be stored under the additional data (view Basic Data 1 – Additional Data button).



Maintenance of Additional Units of Measure

This data provider can be used to convert the quantities of materials into alternative units of measure. The alternative quantities can be calculated for both the header material and the BOM items of an order.

A total of 14 items are available for the output of the data. In Customizing, the materials and alternative units of measure are assigned to the items. C09 Transaction /LMPC/MAT_ADD_CUST: Alternative Units of Measure

A conversion factor is calculated for each alternative unit of measure. The order quantity of the planned order, production order, or process order, or the requirement quantity of the BOM item, is multiplied by this conversion factor and an alternative quantity is calculated.

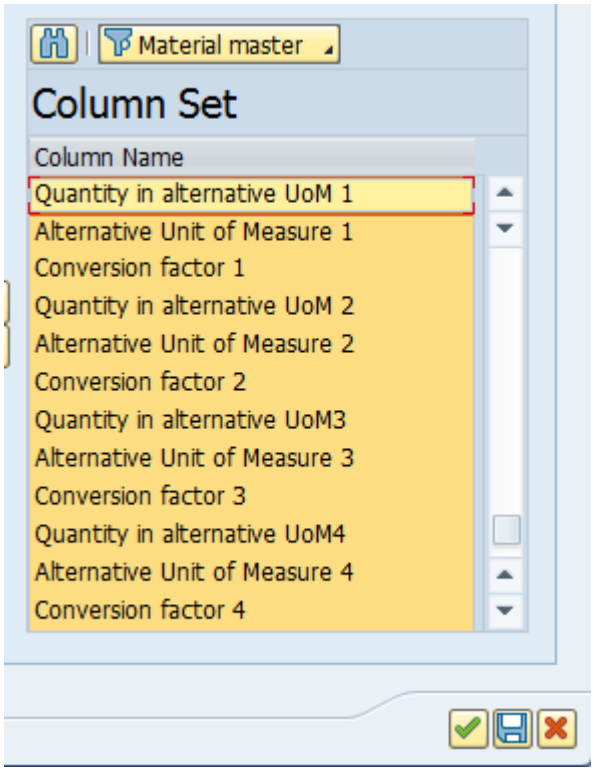
For each item, there is one field for the conversion factor, one field for the alternative unit of measure, and one field for the calculated quantity in an alternative unit of measure.

Fields

Field Name	Description

MAKTX_ADD_MA	Alternative material short text
MBDTEXT_MA	Material Basic Data Text
QAME1_MA	Quantity in alternative unit of measure 1
AMEINH1_MA	Alternative unit of measure 1
UMREN1_MA	Conversion factor 1
to	
QAME14_MA	Quantity in alternative unit of measure 14
AMEINH14_MA	Alternative unit of measure 14
UMREN14_MA	Conversion factor 14

The fields are in the layout settings for the ALV Grid in the "Material master" group:



Fields in the Layout Settings

ALV Grid View:

Qty.alt.1	AU	Conversion factor 1	Qty.alt.2	AU	Conversion factor 2	Qty.alt.3	AU	Conversion factor 3	Qty.alt.4	AU	Conversion factor 4
7.200	BT	0.133	1.350	CAR	0.025	0.045	PAL	0.001	162	RL	3.000
4.533	BT	0.133	0.850	CAR	0.025	0.028	PAL	0.001	102	RL	3.000
1.333	BT	0.133	0.250	CAR	0.025	0.008	PAL	0.001	30	RL	3.000

Example Data for Alternative Units of Measure

→ Remember

When converting quantities to alternative units of measure, each line in the ALV Grid must be processed individually. There are 14 possible items, so up to 14 calculations can be performed per line, depending on the setting. The calculation of alternative units can affect the runtime for the initial call, when saving, and when reloading the planning table. It is recommended that you use the calculation of alternative units of measure sparingly.

2.7.21 Data Provider /LMPC/CL_DP_MEASURES Tasks, Resubmissions, Comments

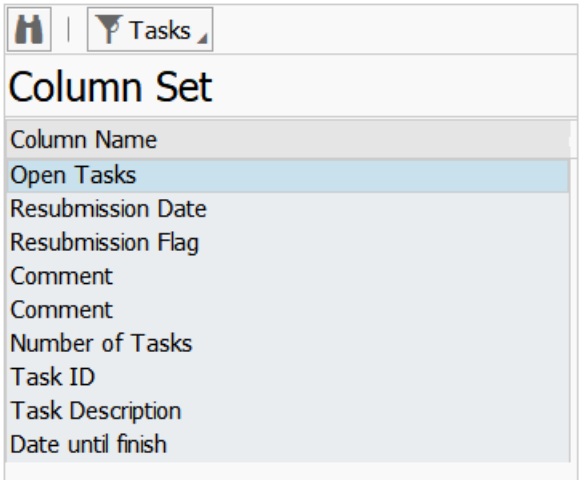
Data for tasks, resubmissions, and comments

The data provider reads the data for tasks, resubmissions, and comments.

The data for the tasks is displayed in 9 fields in the ALV Grid of the LMPC HJPT planning table:

- OPEN_MEASURES_ME Indicator Open Tasks (icon)
- RESUBMISSION_DATE_ME Resubmission Date
- RESUBMISSION_FLG_ME Resubmission Flag
- RESUBMISSION_NOTE_ME Comment on resubmission
- COMMENT_NOTE_ME Comment
- NUM_MEAS_ME Number of Tasks
- MEASURE_ID_ME Task ID
- DESCRIPTION_ME Task Description
- FINISHED_UNTIL_ME Date Until Finish

The fields are in the ALV Grid layout group "Tasks".



Layout Group: Tasks

The data for the tasks is read from the data provider /LMPC/CL_DP_MEASURES.

oTas	Resubmission Date	Resub.Flg.	Comment	Comment	Num. Tasks	Task ID	Task Description	Date until finish
	13.01.2021	X	Wiedervorlage	Kommentar	5	51	LMPC - NOTIFY SUPPLIER	04.01.2021
	13.01.2021	X	Wiedervorlage	Kommentar	5	51	LMPC - NOTIFY SUPPLIER	04.01.2021
	13.01.2021	X	Wiedervorlage	Kommentar	5	51	LMPC - NOTIFY SUPPLIER	04.01.2021
					0	0		

Data in the ALV Grid

This functionality has three action codes with which the data is maintained. S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]

2.7.22 Data Provider /LMPC/CL_DP_MEH MEH Data

Data fields for enhanced material master view (UoM)

This data provider reads the additional material master fields of the consulting solution "enhanced material master view (UoM)".

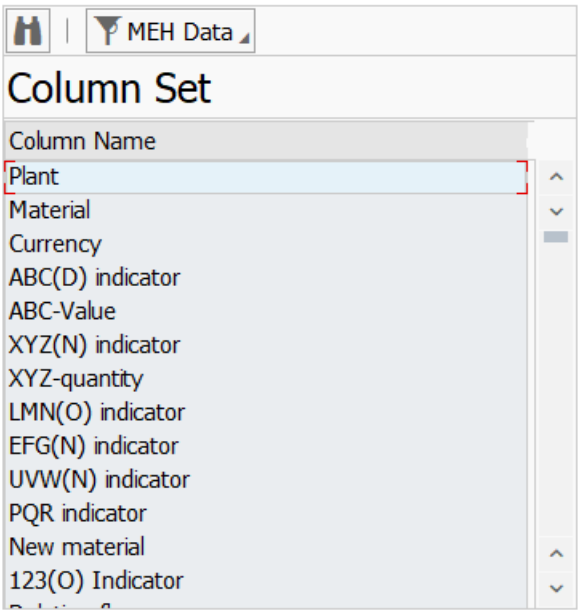
The UoM enhancements are delivered with the core transport of the SCM Consulting Solutions.

For documentation on enhanced material master view (UoM), see the comprehensive functions under the following link: Enhanced Material Master View

This is not part of the LMPC documentation.

> ⓘ Note
>
> For the fields to be available in the HJPT planning table, a field enhancement must be carried out and the data provider must be activated. For details on this, see the LMPC Configuration Guide. Data Provider / LMPC/CL_DP_MEH Configuration: UoM Data

As soon as the necessary enhancements have been made, the fields are located in the layout group of the UoM data.



UoM Data

> **Restriction**
>
> Only the data from table /SAPLOM/MEH_MM01 is read. Data from other tables cannot be determined.

2.7.23 Data Provider /LMPC/CL_DP_MRP MRP Monitor Data

Data Fields for MRP monitor (MRP)

This data provider reads the analysis results of the SCM consulting solution MRP monitor (MRP).

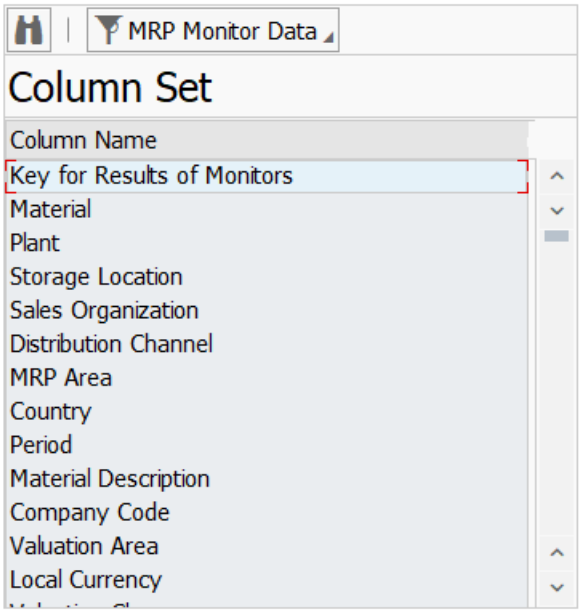
The MRP monitor is a standalone consulting solution and is not delivered with the LMPC HJPT planning table.

For the documentation on the consulting solution MRP monitor (MRP), see the following link: MRP Monitor

This is not part of the LMPC documentation.

> **Note**
>
> For the fields to be available in the HJPT planning table, a field enhancement must be carried out and the data provider must be activated. For details on this, see the LMPC Configuration Guide. Data Provider / LMPC/CL_DP_MRP Configuration: MRP Data

As soon as the necessary enhancements have been made, the fields are located in the layout group of the MRP monitor data.



MRP Monitor Data

> ⚠ Caution
>
> Remember that the MRP monitor consulting solution is a solution that carries out extensive evaluations. The MRP monitor therefore has a large amount of data and also a large number of fields. If you want to load the data of this consulting solution into the fields of the HJPT planning table, this can have a negative impact on the runtime of the HJPT planning table because a large amount of data is to be read. It is recommended that you use this data provider only for small data records or only for profiles that are intended for evaluating data. In a more extensive planning scenario, this data provider is not recommended.

2.7.24 Data Provider /LMPC/CL_DP_OP_ADD Additional Data for Operations

This data provider is used to read additional HJPT data for order operations. This is data that occurs when changing the standard values of operations, during LMPC firming, during two-step planning with a predefined sequence, and when saving the operation dates.

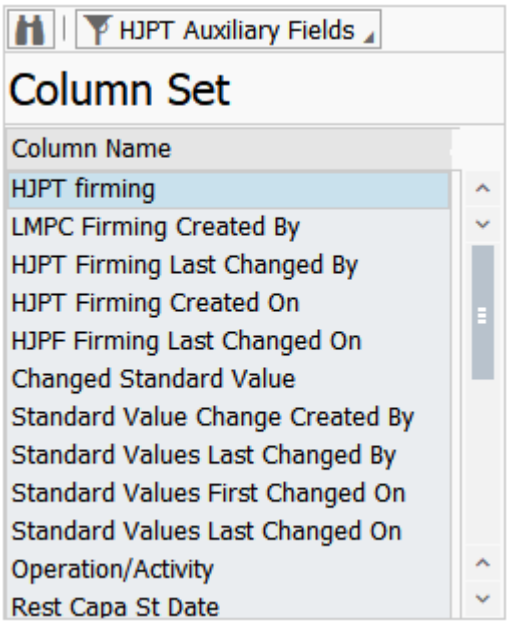
The data provider is required if one of the following action codes is used:

- S_APGRP Deallocate with Group ID [page 313]
- S_CHSDV Change Standard Values [page 128]
- S_COPTXT LMPC HJPT Operation Text [page 132]
- S_EPBKFG Two-Step Dispatching with Pool ID [page 300]
- S_EPGRP Planning with Group ID [page 311]
- S_FIX, S_FIXE Firm and remove firming of orders [page 395]
- S_GRPID Set and Delete Group ID [page 309]
- S_SVOPDT Save Operation Dates [page 417]

The data provider /LMPC/CL_DP_OP_ADD fills the following fields:

Field Name	Description
COPTXT_AX	LMPC HJPT Operation Text
COPTXT_CHUSER_AX	LMPC HJPT Operation Text Last Changed By
COPTXT_CRUSER_AX	LMPC HJPT Operation Text Created By
COPTXT_CHTMSTMP_AX	LMPC HJPT Operation Text Last Changed On
COPTXT_CRTMSTMP_AX	LMPC HJPT Operation Text Created On
HJPT_FIRM_AX	LMPC HJPT Firming Indicator
FCRUSER_AX	LMPC HJPT Firming Created By
FCHUSER_AX	LMPC HJPT Firming Last Changed By
FCRTMSTMP_AX	LMPC HJPT Firming Created On
FCRTMSTMP_AX	LMPC HJPT Firming Last Changed On
PLSEQBFG_AX	LMPC HJPT planning sequence 2-level planning
SDVCH_AX	Indicator: Change Standard Value
SDVC_CRUSER_AX	Standard Value Change Created By
SDVC_CHUSER_AX	Standard Values Last Changed By
SDVC_CRTMSTMP_AX	Standard Values First Changed On
SDVC_CHTMSTMP_AX	Standard Values Last Changed On
SVD_STDATE_AX	LMPC HJPT saved start date
SVD_STTIME_AX	LMPC HJPT saved start time
SVD_ENDATE_AX	LMPC HJPT saved end date
SVD_ENTIME_AX	LMPC HJPT saved end time
SVD_CHUSER_AX	LMPC HJPT operation dates last saved by
SVD_TMSTMP_AX	LMPC HJPT operation dates last saved on
GROUPID_AX	LMPC HJPT Order Operation Group ID
MARKER_AX	Marker for Order Operations

The fields are located in the layout settings of the ALV Grid in the group of HJPT help fields.



HJPT Help Fields

HJPT frm.	F.Created On	F.Changed On	StdV c.	SDV.f.Chndg On	S.Changed On	Sv.St.Date	Sv.St.Time	Sav. End Date	Sv.E.Time	Op.Dates saved
X	27.09.2022 14:28:01	27.09.2022 14:35:46	X	29.11.2022 11:54:21	29.11.2022 11:54:21		00:00:00		00:00:00	
						03.11.2022	11:30:00	03.11.2022	18:00:00	29.11.2022 09:57:58
X	29.11.2022 12:39:44	29.11.2022 12:39:44				03.11.2022	13:40:00	03.11.2022	18:00:00	29.11.2022 09:57:58
						04.11.2022	12:07:00	04.11.2022	14:02:00	29.11.2022 10:28:55

Example Fields in ALV Grid

When you save in the HJPT planning table, the data is written to the database. The data is retained for a period of one year and then deleted automatically.

2.7.25 Data Provider /LMPC/CL_DP_PRODVER Data for Production Version

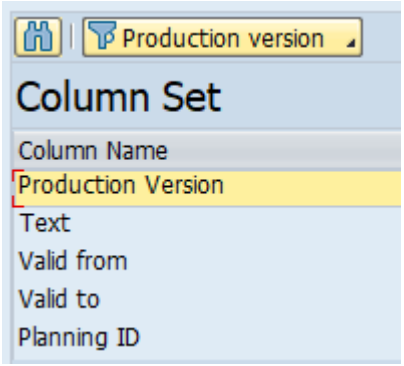
Display of data for the production version

The data for the production version of planned orders, production orders, and process orders is determined.

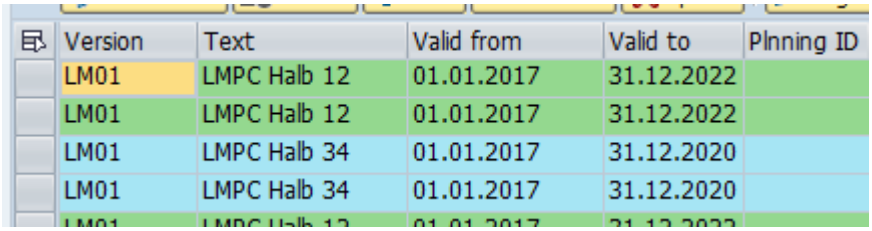
The data provider /LMPC/CL_DP_PRODVER fills the following fields:

Field Label	Description
VERID_PV	Production Version
VERS_TEXT_PV	Short Text for Production Version
ADATU_PV	Validity Start Date of Production Version
BDATU_PV	Validity End Date of Production Version
MDV02_PV	Planning Identification

The fields are located in the layout settings of the ALV Grid in the group “Production version”.



Columns in the Layout Settings



Columns in ALV Grid of HJPT Planning Table

2.7.26 Data Provider /LMPC/CL_DP_PS_AFAB Relationships

Data for Relationships in Networks

The data provider /LMPC/CL_DP_PS_AFAB reads data for relationships of Project System (PS) orders. It is not required for the PP and PP-PI environment.

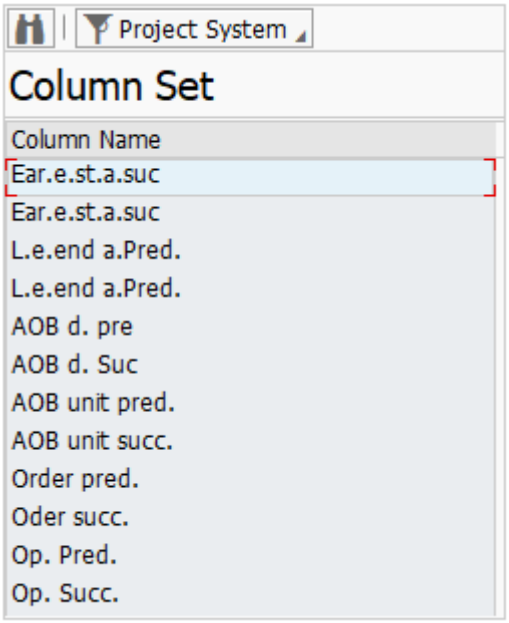
You can use this data to check whether the relationships are adhered to when the operations are dispatched. The data provider also reads the WBS element from the assignment in the production order.

The following fields are filled:

Field Name	Description
VGAUFNR_PS	Order number of latest predecessor
VGVORNR_PS	Operation number of latest predecessor
NFAUFNR_PS	Order number of earliest successor
NFVORNR_PS	Operation number of earliest successor
FFSTAD_PS	Earliest earliest start of all successors
FFSTAU_PS	Earliest earliest start of all successors (time)
SFENDD_PS	Latest earliest end of all predecessors
SFENDU_PS	Latest earliest end of all predecessors (time)
DVG_PS	Relationship duration predecessor
DVGE_PS	Relationship duration unit predecessor
DNF_PS	Relationship duration successor

Field Name	Description
DNFE_PS	Relationship duration unit successor
PROJN_AV	Work breakdown structure element (WBS element)

The fields can be found in the “Project System” group.



Layout Settings Column Set

Order Number	Oper./Act.	Work center	Earliest start	Earl.start	Earliest finish	Erl.finish	Order pred.	Op. Pred.	Oder succ.	Op. Succ.	Ear.e.st.a.suc	Ear.e.st.a.suc	L.e.e.Pred	L.e.e.Pred
904719	0010	MA2	30.12.2020	06:00:00	30.12.2020	14:00:00			904721	0010	30.12.2020	14:00:00		00:00:00
904721	0010	MA3	30.12.2020	14:00:00	31.12.2020	10:00:00	904719	0010	904721	0030	31.12.2020	10:00:00	30.12.2020	14:00:00
904721	0020	MA3	31.12.2020	10:00:00	31.12.2020	16:00:00	904721	0010	904721	0040	31.12.2020	16:00:00	31.12.2020	10:00:00
904721	0030	MA4	31.12.2020	10:00:00	31.12.2020	14:00:00	904721	0010	904721	0040	31.12.2020	16:00:00	31.12.2020	10:00:00
904721	0040	MA3	31.12.2020	16:00:00	02.01.2021	12:00:00	904721	0020	904722	0010	05.01.2021	06:00:00	31.12.2020	16:00:00
904720	0010	MA3	02.01.2021	12:00:00	04.01.2021	08:00:00	904719	0010	904720	0020	04.01.2021	08:00:00	30.12.2020	14:00:00
904720	0020	MA3	04.01.2021	08:00:00	04.01.2021	14:00:00	904720	0010	904720	0030	04.01.2021	14:00:00	04.01.2021	08:00:00
904720	0030	MA3	04.01.2021	14:00:00	04.01.2021	18:00:00	904720	0020	904722	0010	05.01.2021	06:00:00	04.01.2021	14:00:00
904722	0010	MA1	05.01.2021	06:00:00	05.01.2021	16:00:00	904720	0030	904722	0020	05.01.2021	16:00:00	04.01.2021	18:00:00
904722	0020	MA1	05.01.2021	16:00:00	07.01.2021	11:30:00	904722	0010	904719	0020	07.01.2021	11:30:00	05.01.2021	16:00:00
904719	0020	MA2	07.01.2021	11:30:00	07.01.2021	17:30:00	904722	0020				00:00:00	07.01.2021	11:30:00

Example Data

2.7.27 Data Provider /LMPC/CL_DP_RTRC Routing and Recipe

Read standard values

The data provider reads an operation’s standard values, their respective units, the base quantity, the base unit of measure, and the number of employees.

For production orders in discrete production (PP), the data is read directly from the operation of the order.

For planned orders in discrete production (PP), the data is read from the routing of the order. The current date is used as the explosion date of the routing, and not the respective explosion date of the individual order. This can save runtime.

For process orders in process industry (PI), the data is read directly from the order operation. For planned orders in process industry (PI), the data is read from the product recipe.

If an operation has multiple phases, the standard values for all phases of the operation are totaled. However, you can configure the data provider such that it reads only the values for a single phase instead of the total for all phases.

If the standard values of the orders are changed in the simulation, for example, with the action code S_CHSDV, the simulative changes are displayed immediately. For this purpose, the changed standard values are read from the internal tables of the capacity planning table, which can map simulative changes. For planned orders, the changed data then overrides the values from the routing. S_CHSDV Change Standard Values [page 128]

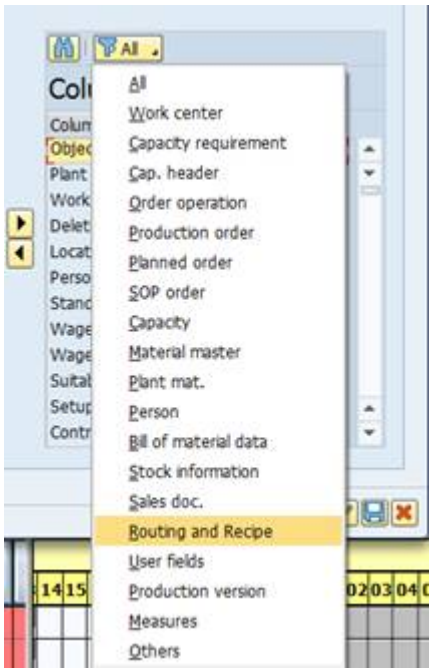
The data provider fills the following fields of the structure /LMPC/RTRC:

Field Name	Description
VGW01_RR	Standard value 1
VGE01_RR	Unit of standard value 1
VGW02_RR	Standard value 2
VGE02_RR	Unit of standard value 2
VGW03_RR	Standard value 3
VGE03_RR	Unit of standard value 3
VGW04_RR	Standard value 4
VGE04_RR	Unit of standard value 4
VGW05_RR	Standard value 5
VGE05_RR	Unit of standard value 5
VGW06_RR	Standard value 6
VGE06_RR	Unit of standard value 6
BMSCH_RR	Base quantity
MEINH_RR	Unit of measure for operation
ANZMA_RR	Number of employees
ZWNOR_RR	Normal queue time
ZEIWN_RR	Unit of the normal queue time
ZWMIN_RR	Minimum queue time
WEIWM_RR	Unit of the minimum queue time
RSTRA_RR	Reduction strategy per operation
RSTUF_RR	Reduction level with which the operation was reduced

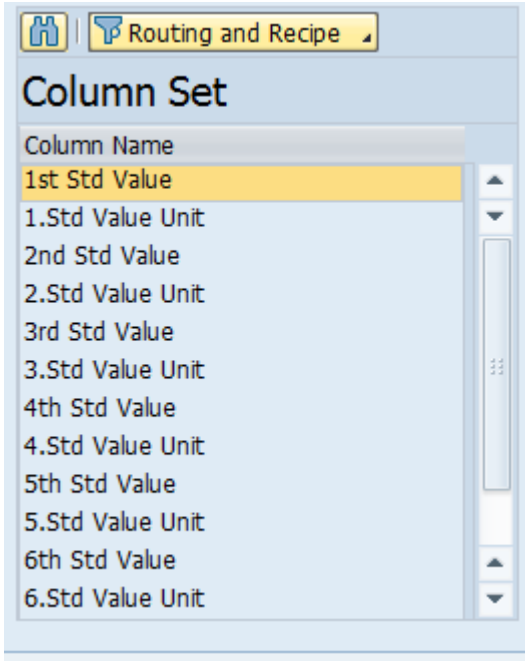
⚠ Restriction

The fields ZWNOR_RR, ZEIWN_RR, ZWMIN_RR, WEIWM_RR, and RSTRA_RR are only filled for orders in PP. For PP-PI planned or process orders, these fields remain empty. The field RSTUF_RR is only filled for PP production orders, not for PP planned orders.

The fields can be displayed using the layout settings. In order to find the fields more easily, a layout group "Routing and Recipe" was created.



Group “Routing and Recipe”



Fields of the Group “Routing and Recipe”

Material	Order Number	OpAc	1st StdVal	1....	2nd StdVal	2....	3rd StdVal	3....	4th StdVal	4....	5th StdVal	5....	6th StdVal	6....	Base Quantity	UoM	NoE...
LMPC_FERT_34	60008467	0010	30	MIN	60	MIN	60	MIN	30	MIN					10	PC	2.00
LMPC_FERT_12	60008482	0010	30	MIN	60	MIN	60	MIN	30	MIN					1	PC	0.00
LMPC_HALB_34	3233285	0010	20	MIN	8	MIN	8	MIN	0	MIN					1	PC	0.00
LMPC_HALB_34	3233286	0010	20	MIN	8	MIN	8	MIN	0	MIN					1	PC	0.00
LMPC_HALB_34	3233285	0020	0	MIN	9	MIN	9	MIN	0	MIN					1	PC	0.00
LMPC_FERT_12	60008482	0020	0	MIN	60	MIN	60	MIN							1	PC	0.00
LMPC_HALB_12	3228984	0010	120	MIN	8	MIN	8	MIN							1	PC	0.00

Fields in the ALV Grid

> **Note**
>
> - If suboperations are used, the data provider /LMPC/CL_DP_AFVG must be activated so that the data for the suboperations can be determined correctly.
> - Reading the data for routings and recipes requires a lot of runtime. The data provider should only be activated if this data is absolutely necessary.

Related Information

Data Provider /LMPC/CL_DP_RTRC Configuration: Routing and Recipe

2.7.28 Data Provider /LMPC/CL_DP_SD_DATA Sales Order

Sales Order Data

The data provider CL_DP_SD_DATA provides data for the sales orders that are related to the planned and production orders.

The basis for reading the data is the sales order number and item.

For make-to-order production, the order number and item of the respective sales order are taken directly from the planned or production order. Since this information is stored there.

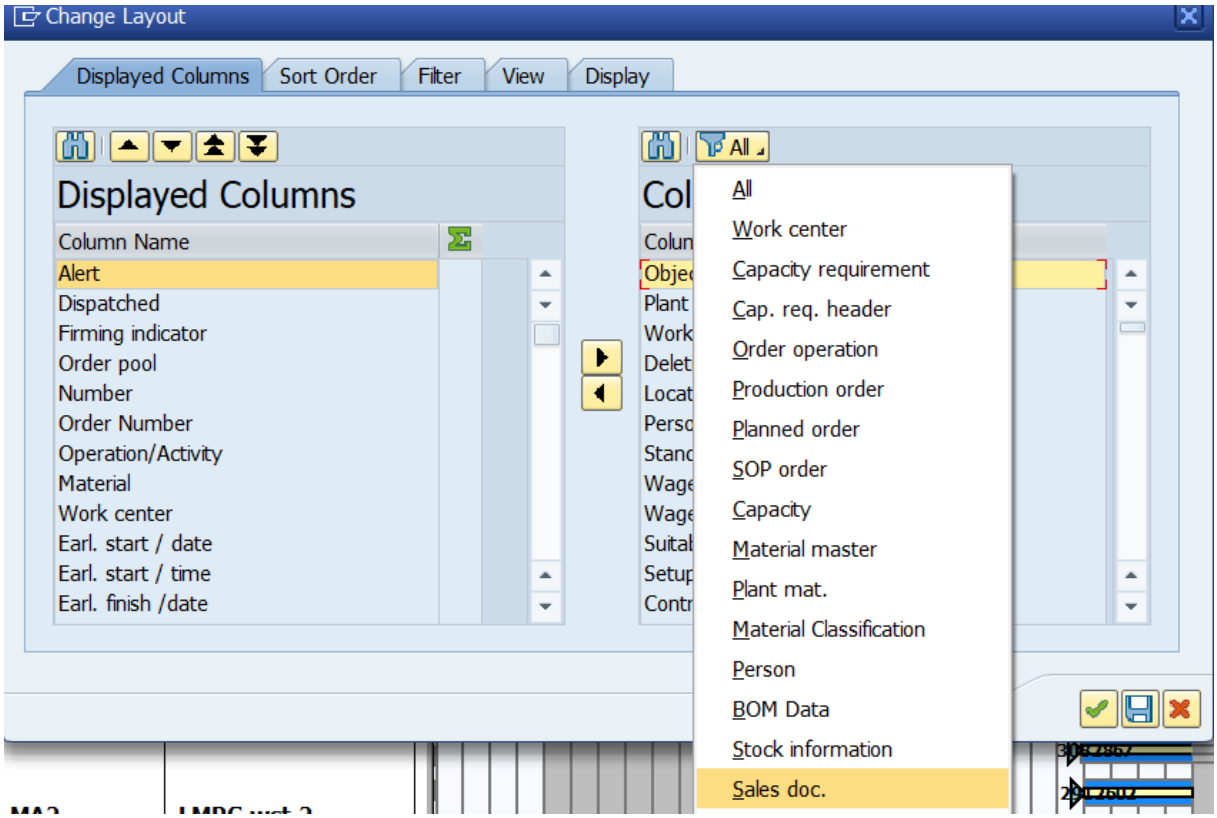
For anonymous make-to-stock production, the result of the data provider for pegged requirements (CL_DP_BED and CL_DP_BED_2) is evaluated. The data providers for the pegged requirements determine the assignment of a planned or production order to a sales order, either using a first-in-first-out relationship (Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]) or using the data from transaction MD09 (Data Provider /LMPC/CL_DP_BED_2 Requirement Date According to MD09 Logic [page 448]). You provide the assignment to the sales order in the fields for the first pegged requirement (fields DMD_DELKZ_MD and DMD_EXTRA_MD). The data provider CL_DP_SD_DATA then determines the order number and item of the sales order from these fields. For details on the fields of the data providers for the pegged requirements, see the corresponding section of the documentation.

The data provider /LMPC/CL_DP_SD_DATA fills the following fields:

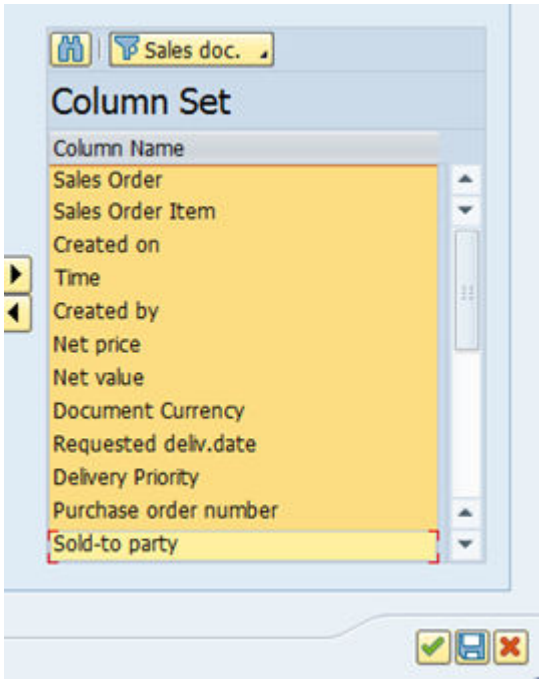
Field Label	Description
KDAUF_SD	Sales order
KDPOS_SD	Sales order item

Field Label	Description
ERDAT_SD	Creation date of the order item
ERZET_SD	Creation time of order item
ERNAM_SD	User who created the order item
NETPR_SD	Net price
NETWR_SD	Net value of order item in document currency
WAERK_SD	Sales document currency
VDATU_SD	Requested delivery date
LPRIO_SD	Supply priority
BSTKD_SD	Purchase order number of customer
KUNNR_SD	Customer number
KNAME1_SD	Customer name
KVGR1_SD – KVGR5_SD	Customer group1 to 5
KVGRBEZ1_SD – KVGRBEZ5_SD	Customer group description 1 to 5
PRDMM_SD	Production note from the item data of the sales order in logon language.

The fields are located in the layout settings of the ALV Grid in the group “Sales document”.



Sales Document Category in the Layout Settings



Columns in the Layout Settings



Columns in the ALV Grid

Related Information

Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
Data Provider /LMPC/CL_DP_BED_2 Requirement Date According to MD09 Logic [page 448]

2.7.29 Data Provider /LMPC/CL_DP_STATUS Status Fields

Data on system status and user status

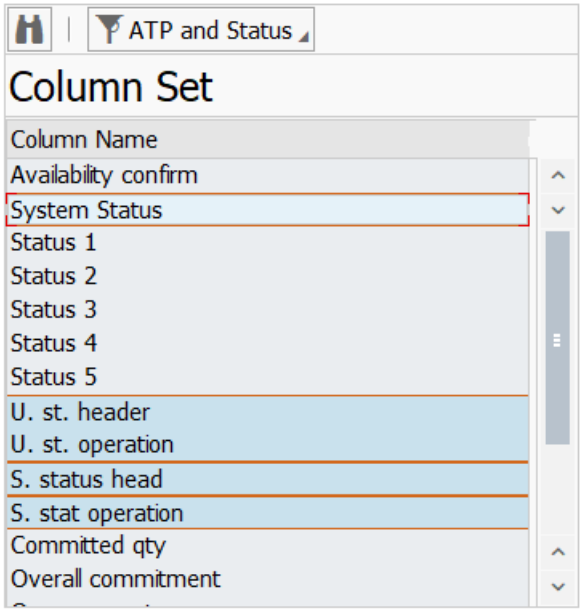
This data provider reads system and user status information from the order header information and the order operations.

The following fields are filled:

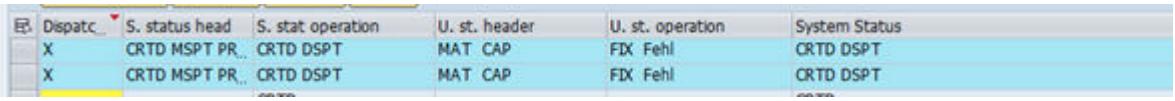
Field Name	Description
/LMPC/FLAG_EIGP_CY	Flag "Dispatched"
SSKOX_SU	System status header (formatted)
SSVOX_SU	System status operation (formatted)
ASKOX_SU	User status header (formatted)

Field Name	Description
ASVOX_SU	User status operation (formatted)
VSTTXT_AV	System status

The fields are located in the layout settings of the ALV Grid in the groups ATP and Status.



Layout Settings



Columns in the ALV Grid

→ Tip

The status information is output in text form in the logon language. If you want to use the technical names of the statuses for color routines, activate the data provider Data Provider /LMPC/CL_DP_USER_STAT Variable Status Fields [page 519].

⚠ Restriction

All status fields have a length of 40 characters. The data is displayed in the same way as the text output in the order header of the production order. If a large number of statuses are included in the respective order, not all status information can be displayed. In this case, please use the data provider for the variable status fields. With this data provider, you can specifically display individual statuses. Data Provider /LMPC/CL_DP_USER_STAT Variable Status Fields [page 519]

2.7.30 Data Provider /LMPC/CL_DP_STD Basic Data of the Capacity Planning Table

Basic data for the ALV Grid

The data provider /LMPC/CL_DP_STD reads the basic data for the ALV Grid of the SAP LMPC HJPT detailed scheduling planning board. The data comes from the selection of the graphical planning table for capacity leveling in the standard SAP system of the component PP-CRP-LVL.

The fields of the following layout groups are filled by this data provider:

- Work Center
- Capacity Requirements
- Capacity Requirements Header
- Order Operation
- Production Order
- Planned Order
- Material Master
- Capacity
- Person

The fields for the order operation are only read for production orders and process orders in this data provider. For planned orders, the fields come from the data provider CL_DP_AFVG. Data Provider /LMPC/CL_DP_AFVG Order Operation Data Planned Order [page 433]

The fields of the capacity requirements are particularly important for planning. They contain the information on the start times and the operation quantities and are therefore the central data for the operations. On the basis of this data, the situation of the operations is determined in the graphic and scheduling is performed.

The fields of these groups that are relevant for capacity planning are shown in the example layout for the ALV Grid that is provided with the LMPC delivery.

> ### ⓘ Note
>
> Since these fields are standard SAP data for capacity planning, this data is not documented in detail here. If you have any questions about the use of the individual fields, please contact your LMPC consultant or an SAP PP consultant.

> ### ⚠ Restriction
>
> Not all of the fields in these groups will be filled. Only those fields for which the capacity planning table provides values. Empty fields are therefore not an error, but are only due to the software architecture of the standard SAP system.

2.7.31 Data Provider /LMPC/CL_DP_STOCK Stock Information

Material Stock

The data provider reads the unrestricted-use stock, the stock in quality inspection, and the total plant stock at the time at which the LMPC HJPT planning table is called, in the form in which it is displayed in transaction MD04. The information can be read for the order material and for the materials in the BOM that are displayed in the HJPT planning table.

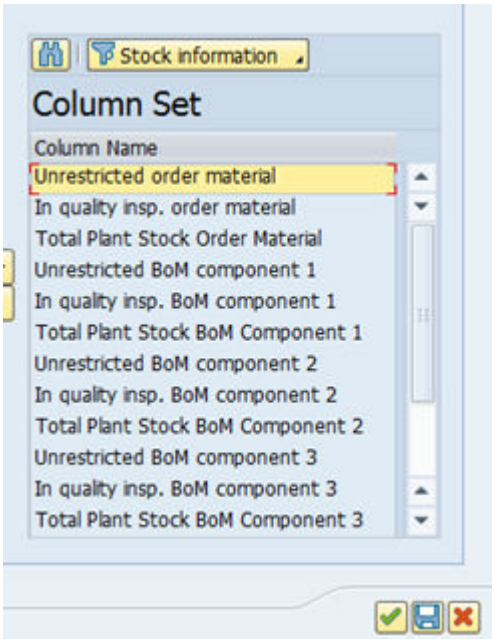
If a batch has been assigned to the respective order or the respective component contains a batch assignment, the fields 'unrestricted-use stock', 'restricted-use stock', and 'stock in quality inspection' are read from the database table for batch stocks (MCHB) instead of from transaction MD04 and thus only for the assigned batch. The plant stock inventory remains unaffected.

> ⓘ Note
>
> Reading the stock information requires a lot of runtime. To save runtime, you should only read the stock information that is absolutely necessary. The determination of batch stocks can be deactivated in Customizing. As can the reading of stocks for the individual BOM items. Data Provider /LMPC/CL_DP_STOCK Configuration: Material Stock

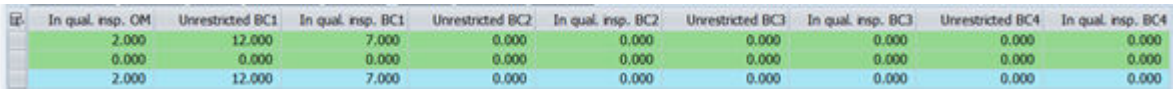
The data provider fills the following fields of the structure /LMPC/STOCK:

Field Name	Description
LABSTAM_ST	Valuated, unrestricted-use stock for order material
INSMEAM_ST	Stock in quality inspection order material
EINMEAM_ST	Restricted-use stock order material
GSBSTAM_ST	Total plant stock order material
LABSTBM1_ST	Valuated unrestricted-use stock for BOM component 1
INSMEBM1_ST	Stock in quality inspection BOM component 1
EINMEBM1_ST	Restricted-use stock component 1
GSBSTBM1_ST	Total plant stock component 1
to	
LABSTBM12_ST	Valuated unrestricted-use stock for BOM component 12
INSMEBM12_ST	Stock in quality inspection BOM component 12
EINMEBM12_ST	Restricted-use stock component 12
GSBSTBM12_ST	Total plant stock component 12

The fields can be displayed using the layout settings. You are in the layout group ‘Stock Information’.



Fields for Stock Information



In qual. insp. OM	Unrestricted BC1	In qual. insp. BC1	Unrestricted BC2	In qual. insp. BC2	Unrestricted BC3	In qual. insp. BC3	Unrestricted BC4	In qual. insp. BC4
2.000	12.000	7.000	0.000	0.000	0.000	0.000	0.000	0.000
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.000	12.000	7.000	0.000	0.000	0.000	0.000	0.000	0.000

Stock Information in the HJPT ALV Grid

→ Tip

The units of measure for the individual items can be displayed using the BOM data or the order material data.

⚠ Restriction

If a special procurement key with the setting production in another plant is used for a material, the stock is read from the planning plant. The stock information for BOM materials for this material, on the other hand, comes from the production plant.

Related Information

Data Provider /LMPC/CL_DP_STOCK Configuration: Material Stock

2.7.32 Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages

Data for rescheduling date, range of coverage, exception messages

The data provider provides the rescheduling date, the ranges of coverage, and exception messages from transaction MD04 for the header material of the order.

Using a setting in Customizing, you can also read the same data for co-materials and by-materials in co-production displayed in the fields for the BOM items. Data Provider /LMPC/CL_DP_USER_001 Configuration: Ranges of Coverage and Exception Messages

The data for the BOM items is determined using the data provider CL_DP_BOM. Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data [page 451]

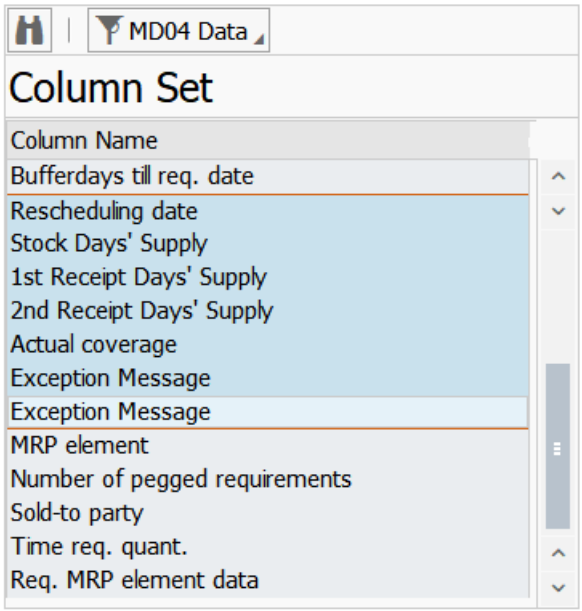
The data has different reference points. Some data refers to the material in the MRP area as a whole, other data is dependent on the respective order or operation.

The data provider fills the following fields in the ALV Grid of the LMPC HJPT planning table:

Technical Field Name	Description
Header material	
AUSKT_MD	Number of exception message for header material (dependent on order)
AUSLT_MD	Text of exception message for header material (dependent on order)
BERW1_MD	Stock days' supply for header material (dependent on the material in the MRP area)
BERW2_MD	1st Receipt days' supply for header material (dependent on the material in the MRP area)
BERW4_MD	2nd Receipt days' supply for header material (dependent on the material in the MRP area)
IREIW_MD	Actual range of coverage for header material (dependent on operation)
IREIW2_MD	Actual range of coverage for header material before production (dependent on operation)
UMDAT_MD	Rescheduling date for header material (dependent on order)
Co-production	
AUSKT1_MD to AUSKT12_MD	Number of exception message for BOM components 1 – 12
AUSLT1_MD to AUSLT12_MD	Text of exception message for BOM components 1 – 12 (dependent on order)
BERW1_BOM1_MD to BERW1_BOM12_MD	Stock days' supply for BOM components 1 – 12
BERW2_ BOM1_MD to BERW2_ BOM12_MD	1. Receipt days' supply for BOM components 1 – 12
BERW4_BOM1_MD to BERW4_BOM12_MD	2. Receipt days' supply for BOM components 1 – 12

Technical Field Name	Description
IREIW_BOM1_MD to IREIW_BOM12_MD	Actual range of coverage for BOM components 1 – 12
IREIW2_BOM1_MD to IREIW2_BOM12_MD	Actual range of coverage before production BOM components 1 – 12
UMDAT_BOM1_MD to UMDAT_BOM12_MD	Rescheduling date for BOM components 1 – 12
UMDATKUP_MD	Earliest rescheduling date based on the header material and all BOM components in co-production.
CMATKUP_MD	Critical material co-production.

The fields are located in the layout settings of the HJPT planning table, in the group of the MD04 data.



Layout Settings

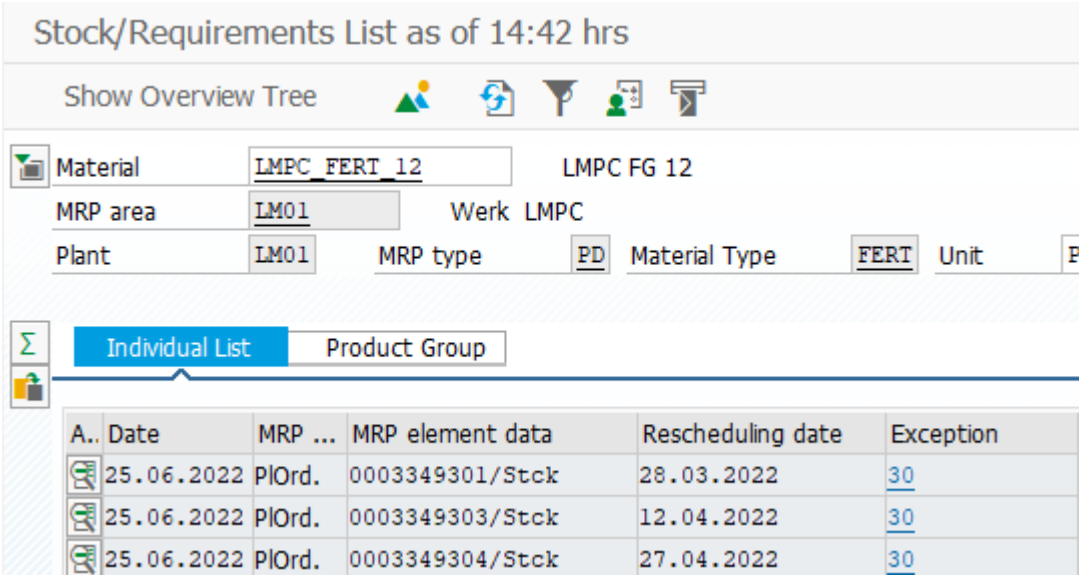
Resch.date	Stock DS	1st R...	2nd ...	Actl cov.	Exception	Exception Message
28.11.2020	45.1-	45.1-	45.1-	25.0-	10	Bring process forward
18.01.2021	45.1-	45.1-	45.1-	25.0-	15	Postpone process
10.02.2021	999.9-	39.0-	39.0-	2.0	15	Postpone process
04.01.2021	1.9-	1.9-	1.9-	6.0-	10	Bring process forward
10.11.2020	54.0-	54.0-	54.0-	57.0-	10	Bring process forward
05.01.2021	1.9-	1.9-	1.9-	1.0-	10	Bring process forward
	33.2-	26.7-	26.7-	999.9-		
28.11.2020	45.1-	45.1-	45.1-	25.0-	10	Bring process forward
28.11.2020	45.1-	45.1-	45.1-	25.0-	10	Bring process forward

Fields in the ALV Grid

Exception Messages and Rescheduling Date

The data for the exception messages (AUSKT, AUSLT) and the rescheduling date (UMDAT) is read from the individual list of transaction MD04 using the order number.

Example of individual list:

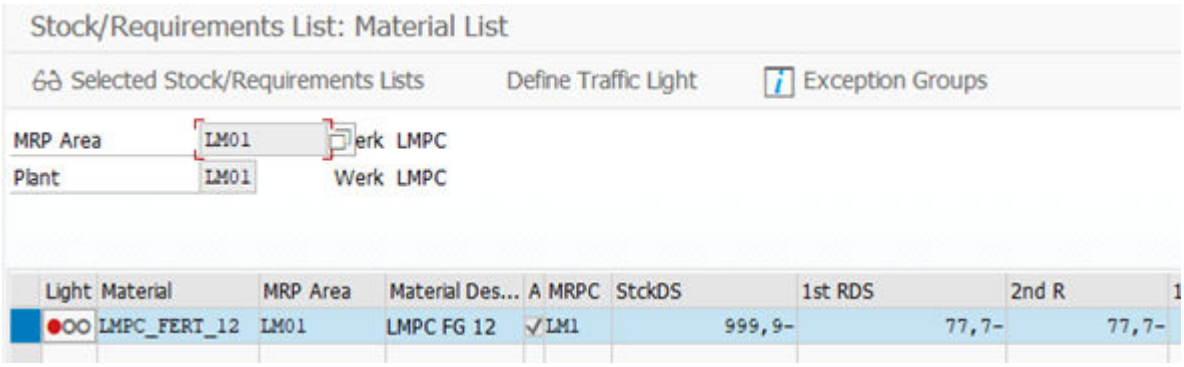


Individual List MD04

Stock Days' Supply and Receipt Days' Supply

The data for the stock days' supply, first and second receipt days' supply (BERW1, BERW2, BER4) is read from the material list of transaction MD04 using the material number of the order.

Example material list:



Material List MD04

Actual Range of Coverage and Actual Range of Coverage Before Production

There are two logics for the actual ranges of coverage: The logic used is selected using a parameter in Customizing.

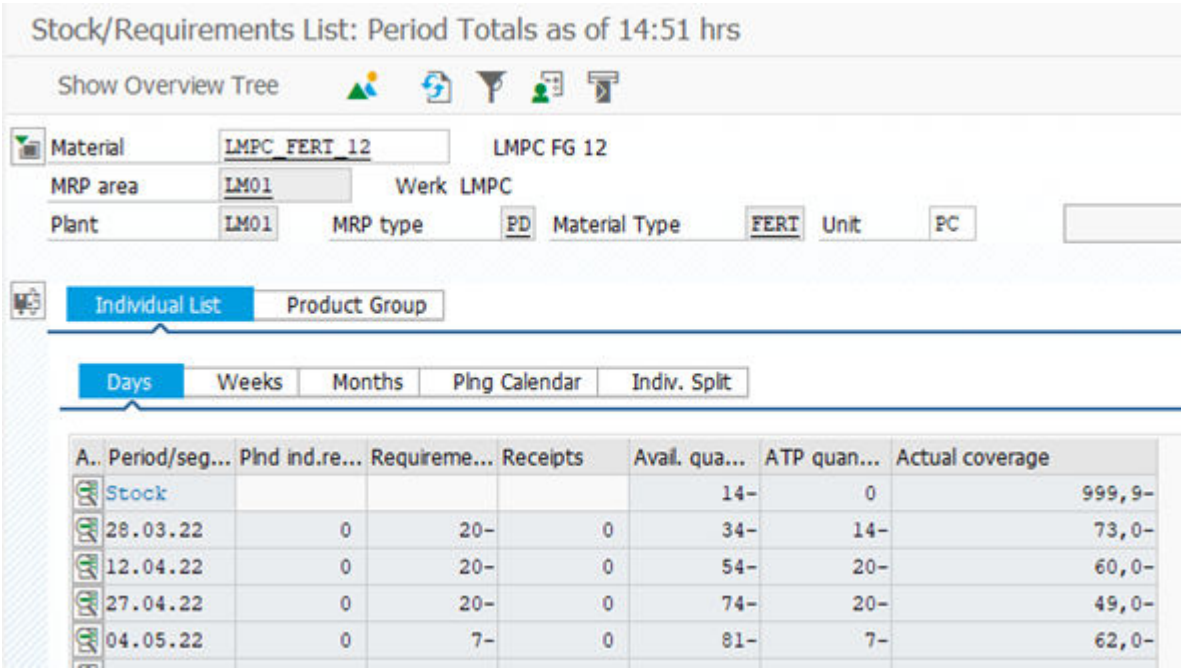
- **Logic 1: Approximate Selection of Actual Range of Coverage**
- **Logic 2: Calculation of Actual Range of Coverage and Actual Range of Coverage Before Production**

Logic 1: Approximate Selection of Actual Range of Coverage

Logic 1 is the standard logic. This logic determines only the actual range of coverage. The fields for the actual range of coverage before production remain empty.

The actual range of coverage (IREIW) is determined by assigning the respective order to a period total by days from the MD04 data for make-to-stock production. The MRP availability is determined from the respective order. The system reads the actual range of coverage of the first period that is earlier than or the same as the MRP availability date. Therefore, the system reads the actual range of coverage that is as close as possible to the MRP availability of the order.

Example of period totals:



A..	Period/seg...	Plnd ind.re...	Requireme...	Receipts	Avail. qua...	ATP quan...	Actual coverage
	Stock				14-	0	999,9-
	28.03.22	0	20-	0	34-	14-	73,0-
	12.04.22	0	20-	0	54-	20-	60,0-
	27.04.22	0	20-	0	74-	20-	49,0-
	04.05.22	0	7-	0	81-	7-	62,0-

Period Totals MD04

⚠ Restriction

This logic is an approximate consideration and not an exact calculation. As soon as the operation dates change in simulative planning, the result is no longer correct since a simulative availability date is compared with the data that was read from the database and is unchanged.

The calculation is performed for make-to-stock production only. No data is calculated for other stages.

Logic 2: Calculation of Actual Range of Coverage and Actual Range of Coverage Before Production

Logic 2 can be activated using a parameter. It calculates the actual range of coverage and the actual range of coverage before production using a calculation logic that is based on the calculation from transaction MD04.

The ranges of coverage are calculated using the available quantity on the day of the receipt. The available quantity is calculated from the warehouse stock, the safety stock, and the receipts and issues of the previous periods. On the day of receipt, the requirements are subtracted from the available quantity before the actual range of coverage is calculated.

For the **actual range of coverage**, the quantity of the order is added to the available quantity for the calculation of range of coverage. The order quantity is taken into account when calculating the range of coverage. For the **actual range of coverage before production**, the quantity of the order is not added for the calculation of range of coverage. The receipt quantity is not taken into account. This is therefore the range of coverage at the time of receipt of the order before the receipt of the order quantity.

The actual range of coverage specifies the number of working days (factory calendar) for which the available quantity is sufficient to cover the requirements that are in the next periods. During the calculation, the requirements of the subsequent periods are calculated against the available quantity until it is consumed. The difference in days between the day of the receipt and the day on which the quantity is consumed is calculated. If the requirement on the last day is greater than the remaining quantity, the last day is calculated proportionally to one decimal place. If the quantity in the periods of the read period cannot be consumed, the range of coverage is 999.9.

If the quantity on the day of receipt is not sufficient to cover the requirements, a negative available quantity is created. The actual range of coverage becomes negative. It specifies how many days you have to wait for the requirement to be covered. For this, the subsequent receipts are calculated against the negative quantity until they are balanced or positive. Receipts of quantities are considered to be available at the start of the day. Therefore, there are no decimal places for the negative range of coverage. If the quantity can no longer be offset by receipts in the read period, the range of coverage is given the value -999.9.

The advantage of the calculation is that it takes into account changes in the data when operations are rescheduled.

→ Remember

The logic in LMPC differs slightly from the logic of MD04:

- If several orders are received on one day, the quantities are not aggregated at day level. They are considered to have been received at the start of the day, but a separate range of coverage is calculated for each order. The sequence that the orders are received in is determined by the latest end date and the latest end time of the capacity requirement. The requirements of a day, on the other hand, are aggregated and considered as one requirement quantity per day.
- When calculating the positive range of coverage, you can define whether the day of the receipt for the range of coverage is to be counted or not. In the basic setting, it is not counted, which corresponds to the logic of transaction MD04. You can use the IRWCAL parameter to add the day.
- For the calculation of negative range of coverage, the period between the determined days is calculated. Example: If the quantity is offset on the next working day, the actual range of coverage displays the value “1.0-” and not “2.0-” as in transaction MD04. Both days are counted in transaction MD04. The day of receipt of the order and the day on which the quantity is offset.

You can use a parameter to define whether the safety stock is taken into account for the calculation of range of coverage. If it is taken into account, it reduces the range of coverage of a material.

⚠ Restriction

- The calculation is performed only for the plant segment of make-to-stock production. There is no calculation for make-to-order production and other segments.
- If the times of an order change, the ranges of coverage for all orders of the same material are updated. This is necessary since shifting the order could change the sequence of the orders. However, the order for a material can also be a pegged requirement for the order of another material. This connection is not taken into account for the calculation. The ranges of coverage of the orders of the other materials for which the changed order is a pegged requirement are not updated.
- Ranges of coverage can also be determined for materials that are planned with a special procurement key for production in another plant. Reading takes place here in the planning plant from the individual list and not from the cross-plant view. Joint production is not supported for production in another

plant. The ranges of coverage of the BOM materials are read only in the production plant, not in the planning plant.

Data for Co-Production

If reading of data for co-production is activated, the UMDATKUP_MD field contains the earliest rescheduling date based on all BOM materials in co-production (negative requirement quantity) and the header material. For each co-product or co-material in co-production, the rescheduling date is read from the data of transaction MD04. The system then compares all values of the co-products and the date of the header material for an order. The earliest date from this comparison is displayed in this field. If reading of data for co-production is switched off, the UMDATKUP_MD field only contains the rescheduling date from the header material. This field is required to calculate the buffer days based on the rescheduling date in the data provider CL_DP_104. Data Provider /LMPC/CL_DP_USER_104 Calculate Buffer Days [page 516]

You can use a parameter in the data provider to specify that if the UMDATKUP_MD field is empty, it is filled with the basic finish date of the planned, production, or process order. This field then shows either the rescheduling date or the basic finish date.

You can use an additional parameter in the data provider to activate the determination of the critical material for co-production. The critical part is the material number of the material with the earliest rescheduling date when comparing the dates for main and by-materials. The detailed logic for determining the critical part is described in the LMPC Configuration Guide.

→ Remember

The data is read from the transaction MD04. In this data provider, for most data the orders are only assigned to the MD04 data. The system does not calculate the rescheduling date or generate exception messages.

The result of the query of the rescheduling date, exception messages, and ranges of coverage depends on the read period used for the MD04 data. The read period can be controlled using settings in Customizing for the HJPT planning table. C16 Transaction /LMPC/STEU LMPC: Control Parameter

For the calculation of the actual range of coverage according to logic 2, the quantities of simulative orders for the header material and the co-products are taken into account. Simulative orders cannot be taken into account for the actual range of coverage according to logic 1. Likewise, the data for exception messages, stock days' supply, receipt days' supply, and rescheduling date cannot be determined for simulative orders since simulative orders do not yet exist in the database. This data is only available when the orders are saved. S_CRORD Create Simulative Order [page 156]

In an SAP ECC system, logic 1 for calculating the actual range of coverage requires less runtime than logic 2. In an SAP S/4HANA system, the exact opposite is true. Logic 2 requires less runtime here.

2.7.33 Data Provider /LMPC/CL_DP_USER_002 Technical Data

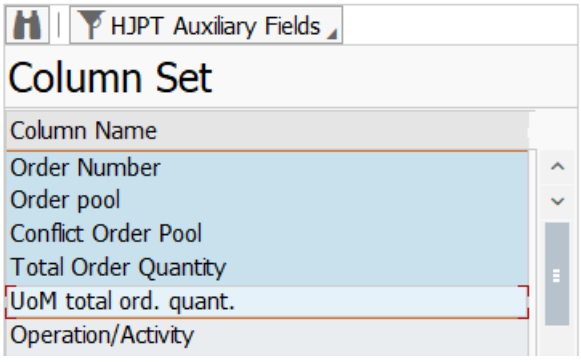
Various Technical Fields of the LMPC Planning Table

The data provider /LMPC/CL_DP_USER_002 fills the following fields in the ALV Grid of the LMPC HJPT detailed scheduling planning board:

Technical Field Name	Description
/LMPC/DELNR_CY	Order number (help field)
/LMPC/VORNR_CY	Operation number (help field)
/LMPC/POOL_GUID_CY	Order pool (help field)
POOL_CONFLICT_AX	Conflict order pool (help field)
GAMNG_AX	Total order quantity (help field)
GAMEIN_AX	Unit of measure for order quantity (help field)
LIDAV_TM	Start date of evaluation period list layout from (time profile)
LIDAB_TM	End date of evaluation period list layout to (time profile)
PLADATV_TM	Start date planning period (time profile)
PLADATB_TM	End date planning period (time profile)
/LMPC/HIER_LEAF_CY	Technical field Work Center is leaf node in hierarchy
GRUPPE_CY	Technical field for identifying the data record
KOMBI_CY	Technical field for identifying the data record
/LMPC/INDEX_CY	Technical field for identifying the data record

Of these fields, the technical fields are not visible.

The visible fields of the help fields are in the layout settings in the group of HJPT help fields:

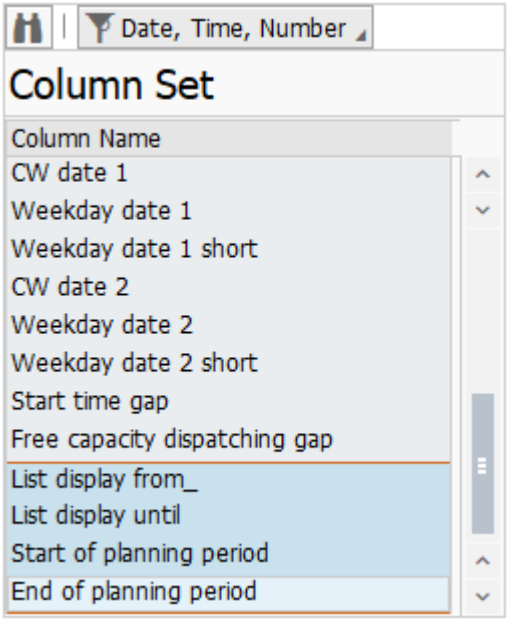


Layout Settings Help Fields

Order Number	OpAc	Order pool	P.Conflict	Total Order Quantity	UoM
3362907	0010	1307		40	PC
3350590	0010	1307		6	PC
3350608	0010	1307		13	PC
3350591	0010			6	PC
3350639	0010			6	PC

Fields in the ALV Grid

The visible fields of the time profile are in the layout settings in the group of HJPT fields for date, time, and number:



Planning Period Fields

List display from_	List display until	Start of planning period	End of planning period
04.06.2022	02.09.2022	04.07.2022	02.09.2022
04.06.2022	02.09.2022	04.07.2022	02.09.2022
04.06.2022	02.09.2022	04.07.2022	02.09.2022
04.06.2022	02.09.2022	04.07.2022	02.09.2022
04.06.2022	02.09.2022	04.07.2022	02.09.2022

Time Profile Fields in the ALV Grid

> **Note**
>
> The planning period can be set in the time profile to start in the past. However, planning in the HJPT planning table can only take place from the current time to the future. Therefore, the field for the start of the planning period displays the current date if the planning period is set to start in the past.

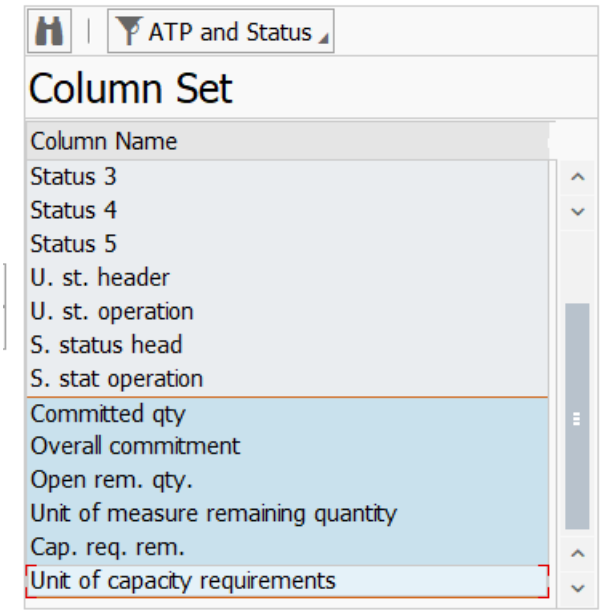
2.7.34 Data Provider /LMPC/CL_DP_USER_003 Quantities

ATP Fields

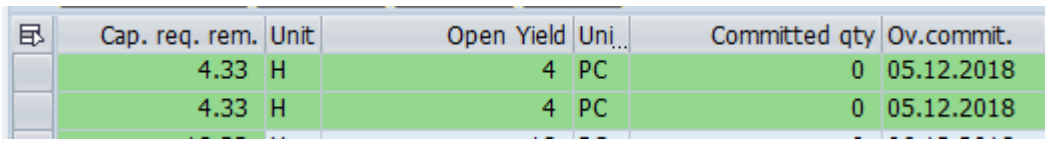
The data provider /LMPC/CL_DP_USER_003 fills the following fields in the ALV Grid of the HJPT planning table:

Technical Field Name	Description
KBREST_SU	Remaining capacity requirement
KEINH_SU	Unit of measure for the output of capacity offer and capacity requirement
OMENG_SU	Remaining quantity (target confirmation quantity)
OMEIN_SU	Unit of measure remaining quantity
VFMNG_SU	Confirmed quantity for order after ATP check components
GSBTR_SU	Total commitment date

The fields are located in the layout settings of the HJPT planning table, in the groups ATP and Status.



Layout Settings

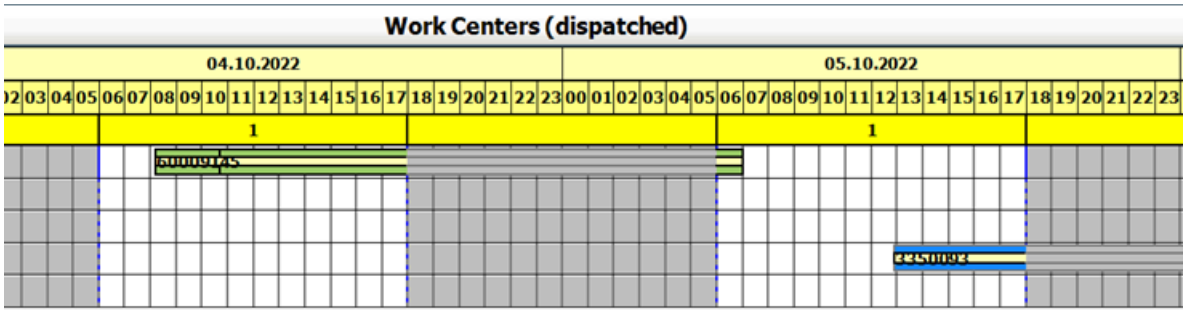


Fields in the ALV Grid

2.7.35 Data Provider /LMPC/CL_DP_USER_101 Remaining Capacity Requirement

Data on Remaining Capacity Requirement

The data provider /LMPC/CL_DP_USER_101 is used to calculate the start date of the remaining capacity bar for the bars of the operations in the graphic.



Example: Partially Confirmed Production Order

When partial quantities are confirmed, the capacity requirements of operations are reduced. If the operations are no longer changed after the confirmation, for example, by rescheduling, the original operation length remains. Using the bars of the remaining capacity requirement, which are now shorter, the graphic shows how much capacity is still required on the machine for the remaining production.

As soon as a partially confirmed operation is changed, the bar length of the operations is updated and adjusts to the current remaining capacity requirement. Afterwards, the bars for the remaining capacity requirement return to the same length as the bars of the operations.

For operations that have not been partially confirmed, the remaining capacity bar has the same length as the respective operation.

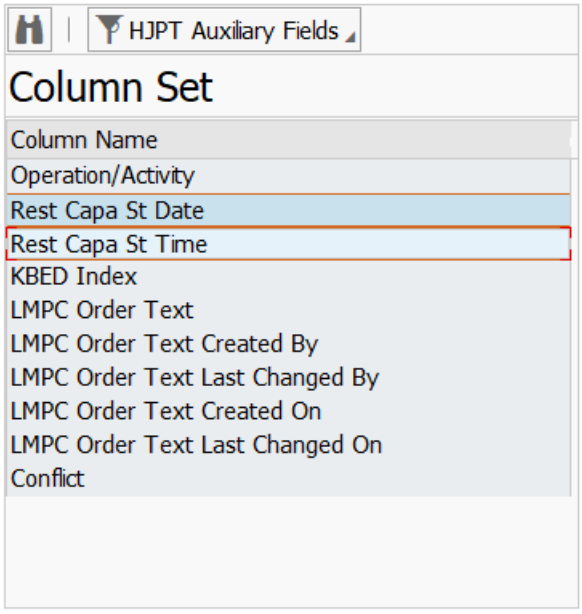
The system always uses the entire remaining capacity, consisting of the remaining capacity requirement for setup, processing, and teardown, to calculate the remaining capacity.

The remaining capacity bars are additional graphic symbols for the graphic in the LMPC HJPT planning table. For the remaining capacity bars to be displayed, the display must be activated in Customizing for the LMPC HJPT planning table. Additional Graphic Elements

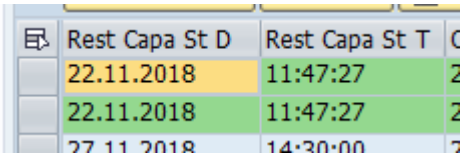
The calculated start (date and time) for the start of the remaining capacity bars can be read in the fields in the ALV Grid of the HJPT planning table:

Technical Field Name	Description
/LMPC/KBRESTD_CY	Start date for remaining capacity requirement bar
/LMPC/KBRESTZ_CY	Start time for remaining capacity requirement bar

The fields are located in the layout settings of the HJPT planning table, in the group of HJPT help fields.



Layout Settings



Fields in the ALV Grid

These fields are the basis for displaying the bars of the remaining capacity in the HJPT planning table graphic.

⚠ Restriction

- The remaining capacity bars are only calculated for the latest dates of the capacity requirements since all bars with the latest dates are displayed in the HJPT planning table.
- The calculation of the bar length is only correct for a certain type of data modeling. The duration of an operation must be dependent on the quantity produced, but not on the number of individual capacities at the work center. Regardless of the available number of individual capacities at the work center, the length of an operation should always be the same. The length of the bars is calculated based on the available operating time on the machine.
- For runtime reasons, the remaining capacity bars are calculated only for operations for which the target capacity requirement differs from the remaining capacity requirement. That is, for operations for which quantities have been partially confirmed. If the target and remaining capacity requirements are the same, no calculation is made and the bars are displayed at the full operation length.
- An operation can be produced on several capacities at the same time. For example, machine and labor. During scheduling, the bar lengths of the operations of the non-scheduling-relevant capacity are adjusted to the bar length of the scheduling-relevant capacity. This means that even if there is less capacity requirement for the non-scheduling-relevant capacity, the bar for the operation of the non-scheduling-relevant capacity still has the same length. This is not the case for the remaining capacity bars. The remaining capacity bars are calculated against the available operating time of the machine. If the capacities for an operation have a different operating time, or if different capacity requirements exist in the operation, the bars for the remaining capacity requirement may have different lengths, even though the bars for the operations are the same length.

- Special case of partial confirmation and adjustment of capacity offer: The dates of the capacity requirements, which the bars of the operations are based on, are saved in the database. The dates of the capacity requirements of the operations are only updated for planning actions. If an order is partially confirmed after saving the last planning, its remaining capacity requirement decreases. If the capacity offer at the work center is also reduced and the operation is not rescheduled again after the change to the capacity offer, the length of the bar for the operation is incorrect. It is displayed shorter than it actually is. Even reaccessing the planning table does not change the bar. Only rescheduling the operation changes the times of the capacity requirements and therefore the length of the bar. However, the dates of the bars for the remaining capacity requirement are calculated in the HJPT planning table at runtime. They are not stored in the database. The described constellation, that after changing the capacity offer, the operations have not been rescheduled, may cause the bar for the remaining capacity to become longer than the bar for the actual operation. The bar for the remaining capacity is recalculated based on the current capacity offer at runtime, the bar for the operation is still based on the old capacity offer before the change. The length of the remaining capacity bars is calculated correctly. Only it does not fit to the length of the bars for the operations since they have not yet been rescheduled. Rescheduling the operations causes the operation length to be updated and the bar lengths to harmonize again.

2.7.36 Data Provider /LMPC/CL_DP_USER_102 Characteristics and Characteristic Values

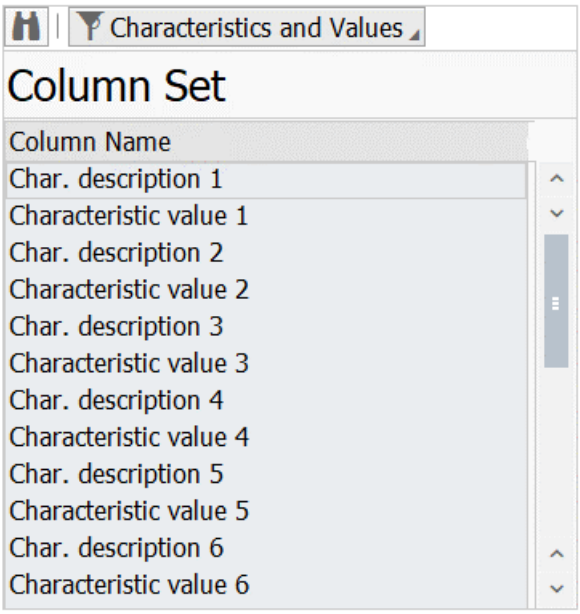
Read Characteristic Values

The data provider /LMPC/CL_DP_USER_102 reads up to 13 characteristic names and characteristic values.

Data for material classification of class type 001 and data for variant configuration of class type 300 can be read.

For class type 001, the data for the respective header material of an order can be read, as can the data for the materials of the BOMs. For class type 300, characteristic names and characteristic values are read for configuration.

The fields are in the layout group "Characteristics and Characteristic Values".

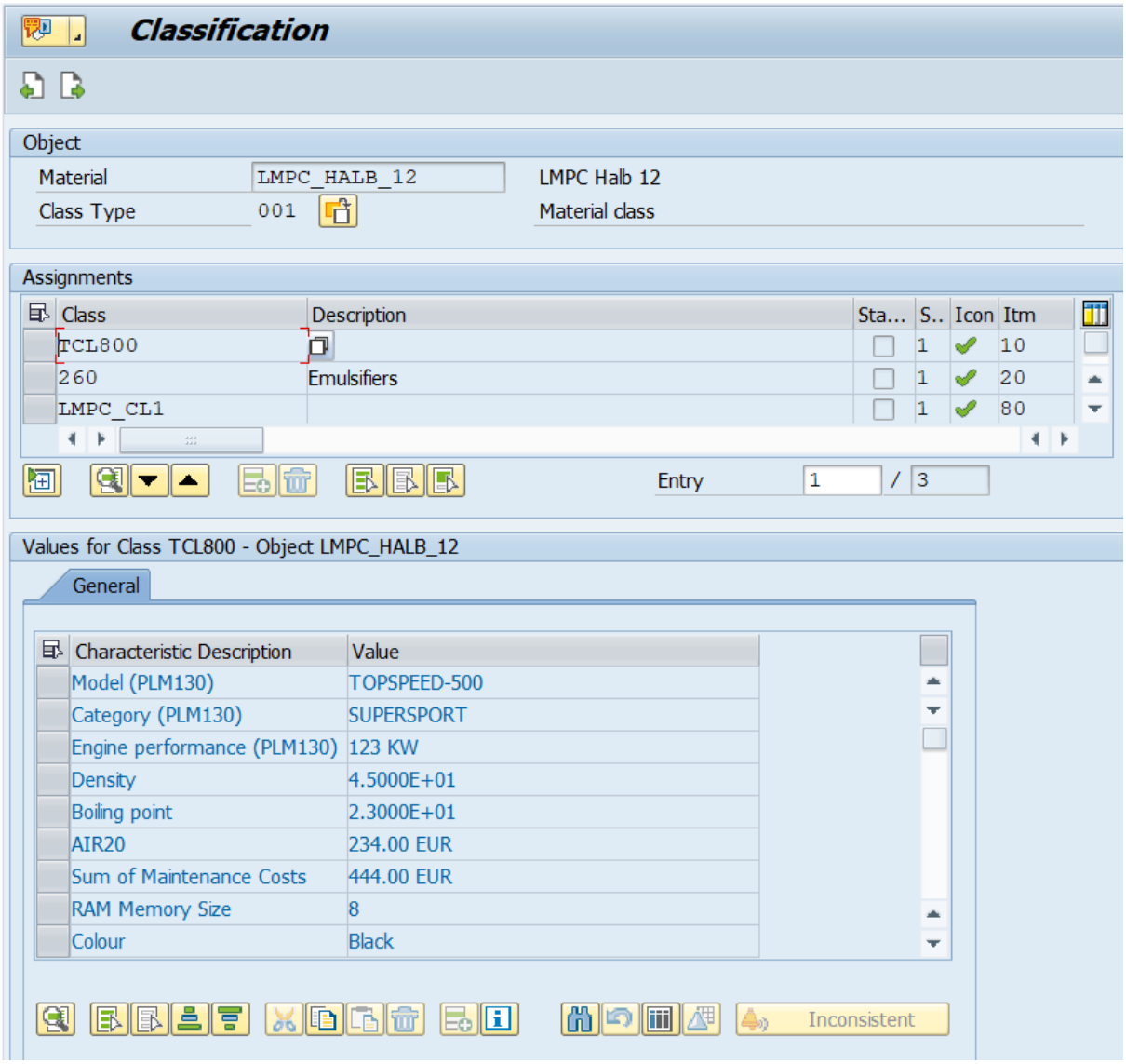


Fields in the Layout Group Characteristics and Characteristic Values

Customizing settings can be used to rename the fields. For details on this, see the LMPC Configuration Guide.
C10 Transaction /LMPC/FLD: Rename, Group, and Remove ALV Grid Columns

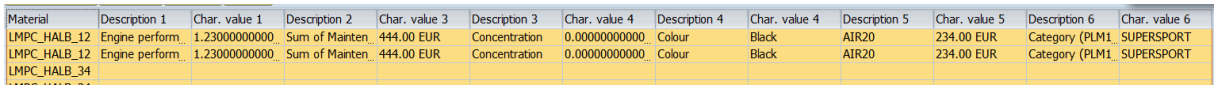
Example

Material Class 001



Example of Material Class 001

In the following example, 6 of these characteristics have been selected to display them in the ALV Grid of the HJPT planning table. For explanations on how to create Customizing, see the LMPC Configuration Guide. Setting HJPT Fields for Characteristics



Material	Description 1	Char. value 1	Description 2	Char. value 3	Description 3	Char. value 4	Description 4	Char. value 4	Description 5	Char. value 5	Description 6	Char. value 6
LMPC_HALB_12	Engine perform...	1.23000000000...	Sum of Mainten...	444.00 EUR	Concentration	0.00000000000...	Colour	Black	AIR20	234.00 EUR	Category (PLM1...	SUPERSPORT
LMPC_HALB_12	Engine perform...	1.23000000000...	Sum of Mainten...	444.00 EUR	Concentration	0.00000000000...	Colour	Black	AIR20	234.00 EUR	Category (PLM1...	SUPERSPORT
LMPC_HALB_34												

Example of Characteristic Value Display in ALV Grid

26 fields are available for display in the ALV Grid of the HJPT planning table.

⚠ Restriction

- The development was done for material class 001 and variant class 300. Characteristics and characteristic values can be read for these classes only.
- The system can only read the classifications for the BOM materials that are displayed in the fields for the BOM data in the HJPT planning table.

- The logic was developed for single-value characteristics. Multiple-value characteristics are not supported.

→ Remember

- Reading the material classification requires a lot of runtime. Therefore, the reading of classification data should be handled sparingly and only those classifications that are absolutely necessary should be read.
- A day buffer is used to save runtime. The data is only determined completely when the data is read for the first time per day. When the data is saved for the first time, the read data is written to the day buffer. From this point on, the application reads the data from the day buffer for the rest of the day. If the classification of the materials, the configuration of the variant materials, or the Customizing for reading the characteristics and characteristic values is changed during the day, these changes are only visible as of the next day.

→ Tip

The data is output in character fields, since characteristics can be maintained in different formats.

If the data in the ALV Grid is to be sorted according to a characteristic value, the sorting is alphanumeric based on the character format, even for characteristics that are numeric.

For example, in case of ascending alphanumeric sorting, the value 1000 is before the value 200. Since 1 is less than 2. In ascending numerical sorting, 200 would be sorted before 1000, since the numbers are regarded as such here. As a workaround to achieve numeric sorting, we recommend that you create the characteristics in character format. The values in character format would then be maintained as 1000 and 0200. In the case of ascending alphanumeric sorting, 0200 is then before 1000.

Related Information

Setting HJPT Fields for Characteristics

2.7.37 Data Provider /LMPC/CL_DP_USER_103 Production Resource/Tool

Data for production resources/tools

The data provider /LMPC/CL_DP_USER_103 reads data for production resources/tools.

The first 10 production resources/tools found for an operation are always displayed.

For each production resource/tool there are the following fields:

- Type of production resource/tool
- Description of production resource/tool
- Equipment number

- Material number
- Document type
- Document number
- Number of other production resource/tool
- Conflict Field for Equipment Check

For planned orders, the production resources/tools are read from the routing of the material for the explosion date of the routing. For production orders, the data from the assignment of production resources or tools to the order operations is determined from the database.

The conflict field shows whether equipment for the respective operation has a time overlap between a maintenance order and the operation dates. It is the same logic as in the equipment check chart. For a detailed description of the logic, see the section on the equipment check chart. Equipment Check [page 94]

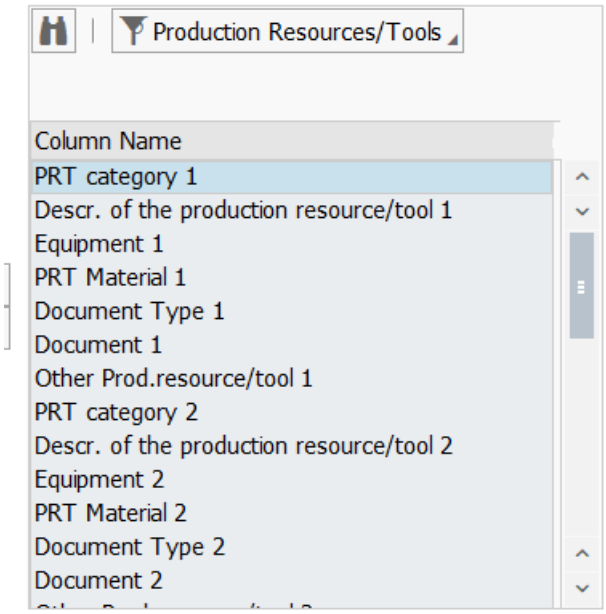
The conflict check must be activated separately in the settings for the data provider. Data Provider /LMPC/CL_DP_USER_103 Configuration: Production Resources/Tools

An LMPC alert exists that considers the conflict fields of the equipment check. Group Alert [page 436]

Settings in Customizing can be used to restrict the display of production resources/tools. For more information, see the relevant section in the LMPC Configuration Guide. C17 Transaction /LMPC/PRT_CUST, M06 Transaction /LMPC/PRT_CUSTS: Filter for Production Resources/Tools

> **Note**
>
> - The data for the production resources/tools is read from the database. Therefore, any changes that are made in the simulation, such as a change to the assignment of production resources or tools to the operations, are not displayed.
> - Only the check for conflicts takes place in the simulation.
> - If simulative production orders are created, no production resources or tools can be read for this data because the data does not yet exist in the database.
> - Production resources/tools with deletion indicator are not displayed for production orders and process orders.

The fields are in the layout group called Production Resources/Tools.



Layout Settings

Order Number	OpAc	Ca	Production tool 1	Ca	Production tool 2	Ca	Production tool 3	Cat	Material
3230221	0010	E	LMPC Equipment 01	E	LMPC Equipment 02	E	LMPC Equipment 03	001	LMPC_FERT_34
3230225	0010	E	LMPC Equipment 01	E	LMPC Equipment 02	E	LMPC Equipment 03	001	LMPC_FERT_34
3230226	0010	E	LMPC Equipment 01	E	LMPC Equipment 02	E	LMPC Equipment 03	001	LMPC_FERT_34
3230227	0010	E	LMPC Equipment 01	E	LMPC Equipment 02	E	LMPC Equipment 03	001	LMPC_FERT_34
3230228	0010	E	LMPC Equipment 01	E	LMPC Equipment 02	E	LMPC Equipment 03	001	LMPC_FERT_34

Example Data for Production Resources/Tools

> → Tip
>
> The conflict fields can be used for coloring the ALV Grid of the HJPT planning table.

2.7.38 Data Provider /LMPC/CL_DP_USER_104 Calculate Buffer Days

Number of Days for Requirement Date or Rescheduling Date

The data provider fills a field in the ALV Grid of the LMPC HJPT planning table.

Technical Field Name	Description
RQDBFF_MD	Time buffer. Time in days between planning availability and requirement date/rescheduling date.

The data provider calculates a time buffer. This time buffer shows whether orders are received on time or are late.

Settings in Customizing can be used to define whether the time buffer is calculated with the requirements date or the rescheduling date. Data Provider /LMPC/CL_DP_USER_104 Configuration: Calculate Buffer Days

For a description of the difference between the terms requirement date and rescheduling date, see the documentation for the data provider for the requirement date. Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]

The time buffer is the number of days between the date of availability for MRP from the warehouse and the requirement date or the rescheduling date.

The date of availability for MRP is calculated from the basic end date of an order to which the processing time for goods receipt in days (WEBAZ) is added. The data for the availability for MRP is also calculated in the data provider for the requirement date.

A negative number indicates that there is still time between the availability date and the requirement date/ rescheduling date.

A positive number indicates that the availability date is the specified number of days after the requirement date/rescheduling date.

In the calculation with the requirement date, zero means that the order is available on the requirement date. If there is no requirement date for an order, the number of buffer days is set to -999.

The calculation with the rescheduling date results in zero if no rescheduling date exists. In this case, it is assumed that the order is scheduled at the correct time and the receipt is on the required date.

Depending on the settings of the data provider CL_DP_USER_001, only the rescheduling date of the header material or the rescheduling date based on the header material and all co-products and by-products in co-production is considered. Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]

Examples: If the day of the MRP availability is the same as the requirement date, the time buffer is zero. If the day of the MRP availability is one day before the requirement date, the time buffer is -1. If the day of the MRP availability is one day after the requirement date, the time buffer is +1.

> **Note**
>
> The calculation of buffer days can be reversed using a parameter in Customizing. A positive number means sufficient buffer time and a negative number means the buffer time is exceeded. Data Provider /LMPC/CL_DP_USER_104 Configuration: Calculate Buffer Days

Due to different customer requirements, there are two logics for calculating the buffer days.

- Logic 1 calculates the number of buffer days over the working days according to the factory calendar for the plant. This is the standard logic in the LMPC delivery.
- Logic 2 calculates the number of buffer days using the available capacity of the scheduling-relevant capacity at the work center of the respective operation.

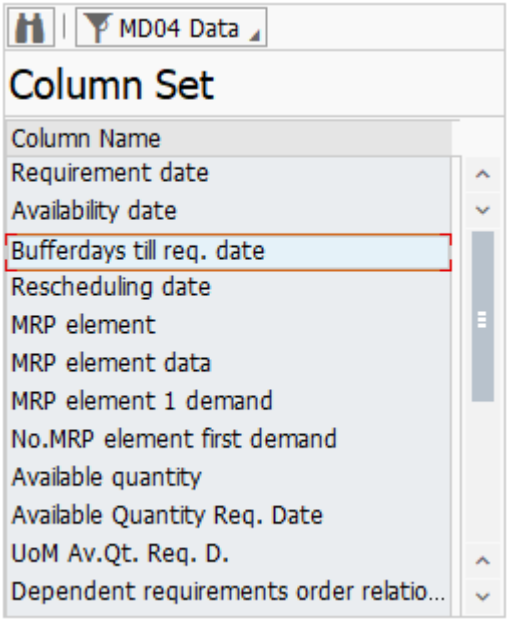
Logic 1 and logic 2 return identical results if a capacity offer is available at the respective work center for each workday of the factory calendar.

> **Note**
>
> Logic 2 is a special logic, with certain uncertainties.
>
> The calculation is performed only for days as of the current date. Days in the past are not taken into account.

In logic 2, each working day on which capacity is available is counted. Shifts are not allocated to the working days. For example, if a night shift starts on a Sunday before midnight and the Sunday has no other capacity, this day is still counted because there is a capacity offer on this day.

The values MRP availability, requirement date, and rescheduling date are the same for all operations of an order. However, since the number of buffer days is calculated depending on the capacity offer at the respective work center, the number of buffer days in an order can be different for each operation. This occurs if operations of an order are produced in different capacities that have a different capacity offer. This uncertainty must be taken into account by the user. Logic 2 can be activated using a parameter in the data provider. Data Provider /LMPC/CL_DP_USER_104 Configuration: Calculate Buffer Days

The field for the buffer days is in the layout settings of the LMPC planning table, in the group of MD04 data.



Layout Settings

→ Tip

Together with the alerts, you can use this data in the HJPT planning table to get a quick overview of whether orders are produced on time or late. You can see whether orders have to be brought forward or whether there is still enough time and an order can be produced later. Data Provider /LMPC/CL_DP_ALERT Alert Processing [page 435]

Alert	Requirement date	Avail.date	Bufferdays	Disp...	F...
	02.06.2020	16.03.2020	51-	X	X
	05.03.2020	20.03.2020	11	X	X
	05.03.2020	20.03.2020	11	X	X
	26.02.2020	20.03.2020	17	X	
	02.06.2020	16.03.2020	51-		X

Overview of Alert, Requirement Date, and Buffer Days

There is another logic for calculating a float that works to the second. This can be activated using the data provider CL_DP_GAP. Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476]

2.7.39 Data Provider /LMPC/CL_DP_USER_STAT Variable Status Fields

Freely definable status fields

In contrast to the data provider /LMPC/CL_DP_STATUS, the data provider /LMPC/ CL_DP_USER_STAT enables the variable filling of 10 status fields.

You can fill the fields with order and user statuses for production/process orders. In addition, status information of the predecessor operation can be read within an order.

You can use Customizing in transaction /LMPC/CUSTADD to define which status information is displayed in which fields. The LMPC delivery provides examples for Customizing.

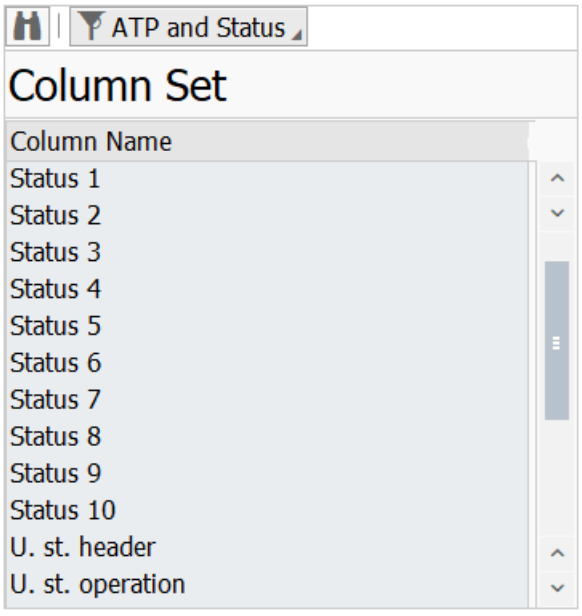
The 5 fields are set as examples as follows:

Field Name	Source	Field Label	System Status	User Status
FA_STATUS1_SU	Order Header	Material Availability	MMAT missing Material availability MACM material committed NMVP material availability not checked.	
FA_STATUS2_SU	Order Header	Order Status	CRTD created REL released PREL partially released	
FA_STATUS3_SU	Operation	Partial confirmation	PCNF partially confirmed	
FA_STATUS4_SU	Order Header	User Status Order Header		LMPC FIX firmed, REL released MISS missing parts, IA in process, RUST set up.

FA_STATUS5_SU	Order Header	Header Status	PREL partially released REL released MSPT material shortage MSPT material shortage CPCK capacity checked MSCP capacity shortage MACM Material committed

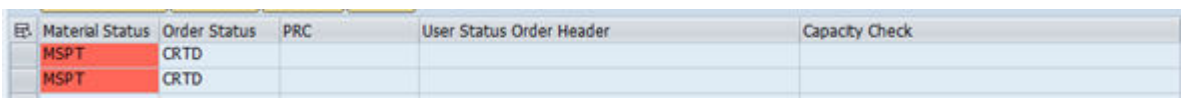
The fields can be found in the ATP and Status groups: They are assigned sequential numbers. The column labels are not determined using transaction /LMPC/FLD as usual, but rather using transaction /LMPC/CUSTADD.

To make the status fields visible in the HJPT planning table, the following columns are selected:



Layout Settings

Example: Fields in the ALV Grid



Fields in the ALV Grid

The data provider also fills fields for the technical identifiers of the statuses in the order:

Technical Fieldname	Description
SKTEC_SU	Technical identifiers of status in the header of the order.
SVTEC_SU	Technical identifiers of status in order operations.
SSTEC_SU	Technical identifiers of split status.
SPTEC_SU	Technical identifiers of status of preceding operation of the same order.

The fields for the technical identifiers have a length of 80 characters. If a large number of statuses are configured, the space may not be sufficient. In this case, the technical information is truncated after 80 characters.

> ⚠ Restriction
>
> The technical identifiers of the statuses for predecessor operations are only filled if the reading of a status for preceding transactions is activated via Customizing.

Related Information

C03 Transaction /LMPC/CUSTADD, M05 Transaction /LMPC/CUSTADDS: Status Fields and Characteristics

2.7.40 Buffer for MD04 Data

The HJPT planning table requires the data of transaction MD04 for various functions.

When the planning table is called, this data is read at runtime with a function module that provides the data as it is displayed in transaction MD04.

The data of transaction MD04 is required for the following data providers and functions:

- Development of the Stocking Situation [page 85]
- List of Order Relations [page 86]
- S_EPML Multilevel Planning [page 323]
- S_ORFIRM, S_ORFREL Firm Order Relations and Undo Firming [page 316]
- Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
- Data Provider /LMPC/CL_DP_DDP Demand-Driven Planning [page 473]
- Data Provider /LMPC/CL_DP_STOCK Stock Information [page 498]
- Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]

Reading the data of transaction MD04 requires a relatively long runtime. If orders for a very large number of different materials are read into the planning table, the call of the planning table may be slow.

For customers who are unsatisfied with the runtime, a day buffer can be activated for the data of transaction MD04.

This is done in the LMPC HJPT overall profile. Configuration of HJPT Overall Profile

Buffering the data only makes sense for customers who work with very large amounts of data, because buffering the data has some disadvantages (see below). As a rule of thumb, it makes sense if there are more than 100 different materials in processing, if there are more than 1000 records per material in transaction MD04, and if the call time of the planning board without buffer is greater than 30 seconds.

If the buffer is active, the data of transaction MD04 is read for the respective materials the first time the planning table is called and then written to internal LMPC database tables.

From this point on, the data for this day is only read from the buffer. Reading the buffered data from LMPC's own tables is significantly faster than creating the data at runtime. During creation of MD04 data, complex calculations are performed and data is read from a large number of different tables.

For customers who want to update the data of MD04 more than once a day, there is the action code S_MD04BF which can be executed using LMPC background processing. This means that reading can take place using an automatic program at regular intervals, for example, hourly. You can use this action code to fill the buffer in a separate program run, regardless of the dialog processing in the planning table. If the program run of the action code takes place before the first call of the planning table on the day, there are also no longer any runtime losses when the planning table is called.

S_MD04BF Update Buffer for MD04 Data [page 408]

Program /LMPC/HJPT Background Processing [page 26]

Reading the MD04 data from the buffer means that the planning table does not use the current MD04 data. Therefore, you must check exactly, whether it makes sense to activate the buffer.

The planning table has its own calculations to update the MD04 data buffer. However, only the dates of the orders that are loaded in the planning table are updated. All data that does not belong to orders loaded in the planning board cannot be updated.

If the buffer is active, two fields are filled in the ALV Grid, which display the time at which the MD04 data was read. A time stamp consisting of date and time and only the time. Since the buffer data is updated at least once a day, it is sufficient to display the time. The fields are in the ALV layout group of the MD04 data..

MD04 data read on	MD04 read at
10.09.2025 09:31:48	09:31:48
10.09.2025 09:31:48	09:31:48
10.09.2025 09:31:48	09:31:48

Fields Buffer MD04 Data Last Updated

The times can differ from material to material, depending on when the data for the respective material was first opened and processed at the respective.

The user can use this field to see how current the MD04 data is. The field is in the ALV layout group of the MD04 data.

The data of the buffer is updated when saving in the HJPT planning table. However, this update only adjusts the dates of the existing data records. The data in the buffer is not rebuilt. The action code S_MD04BF can be used to rebuild the data completely. S_MD04BF Update Buffer for MD04 Data [page 408]

There are two different logics for updating the data when saving:

- With the runtime-saving logic, only the receipt dates of the orders are updated in the relevant data for the header material. This logic is for customers who use the action code S_MD04BF to update the buffer at short intervals on the day.
- In the standard logic for buffering the data, the system performs a more expensive update. The same logic is used as for the runtime-friendly variant. In addition, the requirement dates of the orders are updated in the data of their components. To do this, the components must be read for each order, which costs a lot of runtime. The logic works with a simplification: it is assumed that the components are required for the scheduled start of the order. A more precise calculation does not take place because otherwise a requirement date would have to be calculated for each component individually, which in turn would cost a lot of runtime. The standard logic is required if the action code for updating the MD04 data in the background program is not used or is used only rarely on a day.

For the configuration see: Configuration of HJPT Overall Profile

⚠ Restriction

Activating the buffer has the following effects on the data:

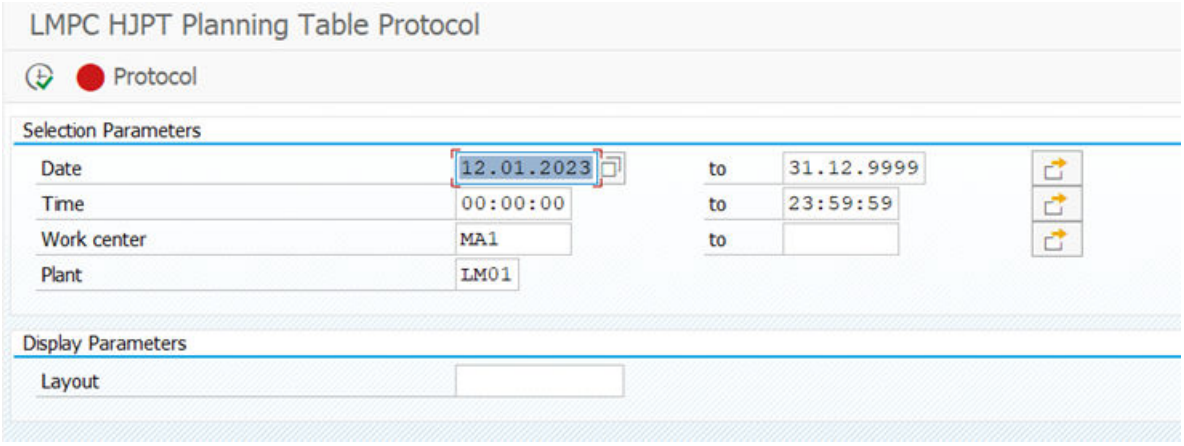
- If new requirements elements have been created since the last update of the buffer, for example, new planned independent requirements or sales orders, these cannot be recognized because the requirement elements that are not themselves orders are read only from the MD04 data. Therefore, MD04 data must always be determined again if new requirement elements are created, otherwise the calculation of the requirement date is incorrect.
- However, if an MRP run takes place and new planned orders are created, the logic recognizes the new planned orders only for the relevant header material. The new planned orders do not exist in the buffer data for the components. Other new receipt elements such as purchase requisitions cannot be recognized. Therefore, the buffer should be rebuilt after an MRP run.
- If orders are deleted or partially or finally confirmed, they remain unchanged in the buffer and lead to an incorrect calculation of the requirement date and the order relations. After deleting orders, the buffer must be rebuilt.
- If the buffer is active, the planning table does not recognize if orders are changed outside LMPC. If, for example, the quantities or dates of orders are changed, they are technically completed or confirmed completely, these changes are not reflected in the buffer.
- If planned orders are converted into production or process orders, the logic of the buffer recognizes the new orders, but only for the respective header material. The old planned orders remain in the buffer data for the components. After converting planned orders, the buffer should therefore be rebuilt.
- The data for all key figures with regard to range of coverage and exception messages is based on the time at which the data of MD04 was read and may be obsolete. However, the exact calculation of the actual range of coverage takes place using the MD04 data from the buffer, but the dates of the orders are updated using the times of the orders in the planning table. Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]
- The data for stock is based on the time at which the data of MD04 was read and may be obsolete. Data Provider /LMPC/CL_DP_STOCK Stock Information [page 498]

2.8 Transaction /LMPC/PLTPR HJPT Planning Table Log

For the LMPC HJPT planning table, it is possible to record changes to the data and view these recordings.

Transaction /LMPC/PLTPR (LMPC HJPT Planning Table Log).

When you call the transaction, the selection screen appears.



Selection Screen /LMPC/PLTPR

The menu bar at the top of the screen contains two buttons for executing functions.

You use the first button to start the data selection.

You use the second button to switch logging on or off. The icon on the button shows the current logging status. A red circle indicates that logging is not running. A green square indicates that logging is active.

Logging is activated for the respective client. It only applies to the HJPT planning table.

> ⓘ Note
>
> Logging the data costs runtime when saving the HJPT planning table. It occupies additional working memory and can generate a large data load on the database. It is therefore recommended to use the protocol only during the testing phase. The log should not be used in productive operation.

When you start the transaction, the selection fields are prefilled. The current day and a notional date in the future are preset for the read period.

The time period from 00:00:00 to 23:59:59 is preset for the time.

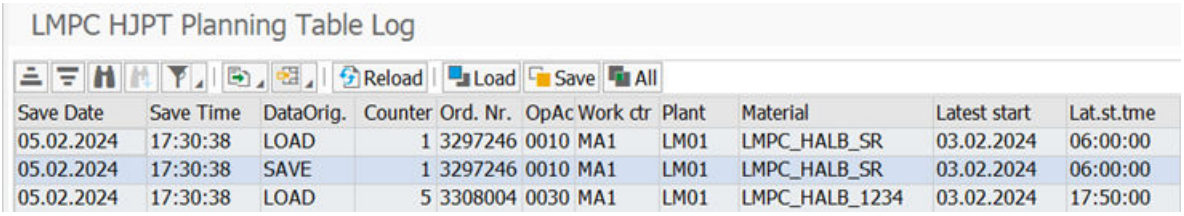
The work center is a required entry field and is prefilled from a memory variable if you have already executed another transaction with a data field for the work center on this day. Only the field From is filled. The same applies to the field for specifying the plant.

You must specify a work center. Specifying the plant is optional.

It is possible to specify a layout for the display. This is also optional. When a layout is transferred, this overrides any layout defined by a user in the ALV Grid.

Data Output

After executing the data selection, the screen for displaying the data appears.



Save Date	Save Time	DataOrig.	Counter	Ord. Nr.	OpAc	Work ctr	Plant	Material	Latest start	Lat.st.tme
05.02.2024	17:30:38	LOAD	1	3297246	0010	MA1	LM01	LMPC_HALB_SR	03.02.2024	06:00:00
05.02.2024	17:30:38	SAVE	1	3297246	0010	MA1	LM01	LMPC_HALB_SR	03.02.2024	06:00:00
05.02.2024	17:30:38	LOAD	5	3308004	0030	MA1	LM01	LMPC_HALB_1234	03.02.2024	17:50:00

Data Output

The following data from the HJPT planning table is saved in the log:

Description	Field name of HJPT planning table or other data source
Origin of data: When loading or when saving.	Generated by Planning Table
User ID	System field
Order number	/LMPC/DELNR_CY
Operation number	VORNR_KB
Counter for operations	Number generated by planning table
Dispatching status	/LMPC/FLAG_EIGP_CY
Order type planned order	PAART_PA
Order type production/process order	AUART_FA
Order category production/process order	AUTYP_FA
Remaining capacity requirement processing	KBEAREST_KB
Remaining capacity requirement setup	KRUEREST_KB
Remaining capacity requirement teardown	KABRREST_KB
Capacity requirement unit	KEINH_KB
Earliest start date for capacity requirement	FSTAD_KB
Earliest start time for capacity requirement	FSTAU_KB
Latest start date for capacity requirement	SSTAD_KB
Latest start time for capacity requirement	SSTAU_KB
Earliest end date for capacity requirement	FENDD_KB
Earliest end time for capacity requirement	FENDU_KB
Latest end date for capacity requirement	SENDD_KB
Latest end time for capacity requirement	SENDU_KB
Work center	ARBPL_CR
Plant	WERKS_CR
Material number	MATNR_MA
Operation quantity	MGVRG_KB
Unit of measure for operation	MEINH_KB
Production version	VERID_PV
System status header production order	SSKOX_SU

Description	Field name of HJPT planning table or other data source
User status header production order	ASKOX_SU
System status operation production order	SSVOX_SU
User status operation production order	ASVOX_SU
LMPC HJPT requirement date	BDTERM_MD
Rescheduling date	UMDAT_MD
Buffer days for requirement date	RQDBFF_MD
LMPC HJPT firming indicator	HJPT_FIRM_AX
Indicator: Change Standard Values	SDVCH_AX
Standard value 1	VGW01_RR
Unit of measurement standard value 1	VGE01_RR
to	
Standard value 6	VGW06_RR
Unit of measurement standard value 6	VGE06_RR
HJPT overall profile	Field of Planning Table
Read date of data	System field
Read time of data	System field
Storage date of data	System field
Save time of data	System field
User field 1	/LMPC/USR1_CY
to	
User field 30	/LMPC/USR30_CY

The data is determined at two points in time. When the data is loaded (LOAD) and when the data is saved (SAVE). The data origin can be read in the field of the same name. By determining at two points in time, you can check how the data of the orders was changed by the planning activities.

The data for the log is determined each time the HJPT planning table is started and each time the planning table is saved.

The data is only saved when you execute the save function. At this point, both data records (LOAD and SAVE) are stored. If a user reloads the data without first saving (S_REFR, S_RELOAD Planning Table Update [page 409]), the data is determined again at the time of the read (LOAD).

If logging is active, the data is determined in the entire client each time it is saved in the HJPT planning table of each user. It is not possible to restrict the selection to individual work centers or users.

Logging takes place both in dialog processing and in background processing using the program /LMPC/HJPT. Program /LMPC/HJPT Background Processing [page 26]

> ⚠ Restriction
>
> In background processing, only the dates of the capacity requirements are updated after the action code has been executed. No other data is changed because the data providers are not run again in background processing.

The data is reduced to one data record for each order number and operation number. Only the data records of the scheduling-relevant capacity are retained. If there are suboperations, the data record of a suboperation is only saved if no data record exists for the main operation.

The data is sorted by order number and operation number before saving. The data records are numbered simply. The counter displays a sequential number for all operations that were open in the HJPT planning table at this time. This number can be used to read the number of data records for a point in time.

The fields for the save date and the save time show the user's local date and local time at the time of saving. These fields are used to select the data on the selection screen.

The fields for the read date and the read time show the local date and local time of the user at the time the data is read. Using the comparison of the events LOAD and SAVE, you can read how much time has elapsed between calling the data and saving the data.

> → Tip
>
> The user fields from the HJPT planning table are saved in the log. If the log requires data for which provisions have not been made, the data can be stored in the user fields.
>
> Data Provider /LMPC/CL_DP_COMB_USRFLD - Merge Data [page 465]
>
> Data Provider /LMPC/CL_DP_DB_FLDS Read Database Fields [page 472]

The column headers of the user fields can be renamed. The descriptions that are maintained in transaction C10 for the user fields of the HJPT planning table are transferred. Since the data of the planning table log is not saved and displayed with reference to the HJPT overall profile, only the descriptions for which an empty field or an (*) is entered as the key for the HJPT overall profile are read from transaction C10. Settings for a specific HJPT profile have no effect. Change ALV Grid Fields of HJPT Planning Table

The data is sorted by save date, save time, order number, operation number, and data origin before output. As a result, the data that belongs to the same save time is displayed together. There are two rows in the table for each operation: One data record for reading and one data record when saving the data. This makes it easier to read the changes to the operations. You can use the layout settings of the ALV Grid to set a different sorting that overrides the presorting of the data.

You can use the layout of the ALV Grid to show and hide fields as required, and you can also change the sequence of the display. User-specific layouts or layouts for all users can be created and filters can be applied.

Functions of the Planning Table Log

The ALV Grid of the log has four additional functions:



Functions

- **Reload:**Reload data with the same selection parameters.
- **Load:** Filter. Only display data records at time of loading of data (LOAD)

- **Save** Filter. Only display data records at time of saving of data (SAVE)
- **All:** Display all data records.

> **Note**
>
> Only the data that is read in the HJPT planning table can be saved. The data providers for the corresponding data must be active so that they can be saved in the log. LMPC HJPT Data Provider [page 432]

The data remains in the system for 28 days and is then deleted automatically. You can use settings in the LMPC control table to change the period for receiving the data. C16 Transaction /LMPC/STEU LMPC: Control Parameter

3 LMPC Order Mass Processing

LMPC Mass Processing of Orders

LMPC order mass processing (/LMPC/MP) is a transaction for processing planned, production, and process orders.

In contrast to the LMPC planning table transaction /LMPC/HJPT, the orders are only processed at header level in LMPC order mass processing. It is not possible to edit data at the level of orders or capacity requirements.

The orders are only processed in the form of a list. There is no graphical representation. There are no planning functions.

The aim of the development was to create a transaction with which certain functions can be executed easily and quickly on a large number of orders.

The orders in the transaction are displayed in table form as a list of the selected orders.

Proce...	Order pool	Order Number	Order type	Material	Material Description	Prod. Version	Total order quantity	Scrap quantity	BUn
X		60007605	PROD	LMPC_HALB_12		LM01	17.000	0.000	PC
X		60007648	PROD	LMPC_FERT_34		LM01	2.000	0.000	PC
X		60007715	PROD	MW_LMPC_FERT_12		MW01	10.000	0.000	PC
X		60007815	PROD	LMPC_HALB_12		LM01	9.000	0.000	PC
X		60007816	PROD	LMPC_HALB_12		LM01	34.000	0.000	PC
X		60007837	PROD	LMPC_FERT_12		LM02	2.000	0.000	PC
X		60007894	PROD	MW_LMPC_FERT_12		MW01	10.000	0.000	PC
X		60007895	PROD	MW_LMPC_FERT_12		MW01	15.000	0.000	PC
X		60007896	PROD	MW_LMPC_FERT_12		MW01	20.000	0.000	PC
X		60007897	PROD	MW_LMPC_FERT_34		MW01	15.000	0.000	PC
X		60007898	PROD	MW_LMPC_FERT_34		MW01	15.000	0.000	PC

Work Screen: Order Mass Processing

The orders can be processed using functions known as action codes.

All changes to the orders are updated immediately when an action code is executed. In contrast to the HJPT planning table, it is therefore not possible to simulate the changes first and then save them collectively.

LMPC order mass processing is characterized by extensive customizing and enhancement options. The columns displayed and the action codes available can be displayed in Customizing.

Enhancement interfaces can be used to enhance the program with customer-specific selection fields, data selections, and action codes.

Related Information

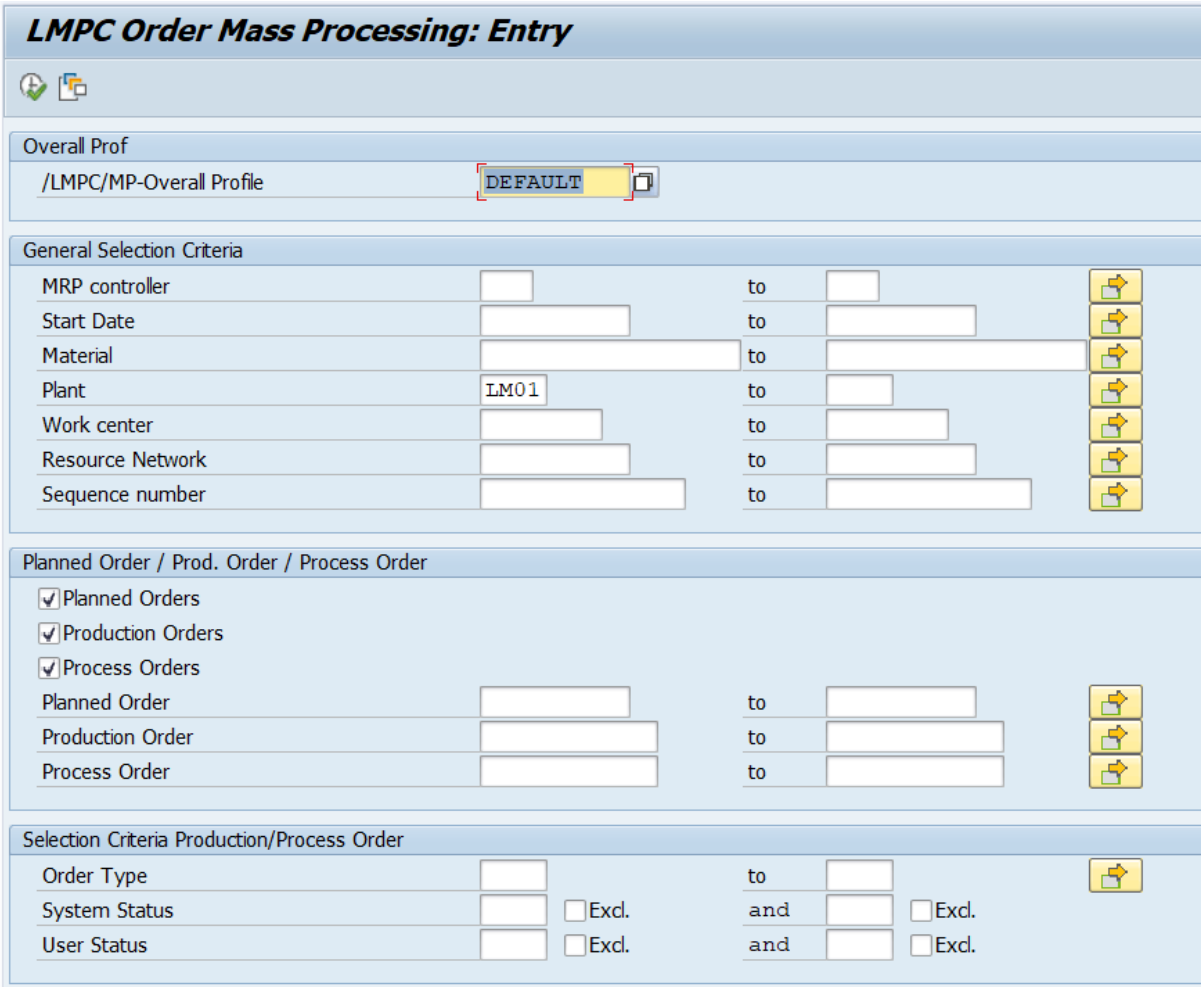
P01 Transaction /LMPC/MP_CUST: LMPC MP Settings

3.1 Transaction /LMPC/MP LMPC Order Mass Processing

Call LMPC Mass Processing of Orders

You access the LMPC order mass processing via **transaction /LMPC/MP**.

The transaction starts with a selection screen. The conditions according to which the orders are selected for processing are entered there.



Selection Screen

Selection according to the following criteria is supported:

- MRP Controller
- Start
- Material
- Plant
- Work Center
- Resource network
- Sequence number

- Type of order
- Order number

The following criteria are available for production and process orders:

- Order type
- System status (max. 2), restricting selection
- User status (max. 2), restricting selection

You must always specify at least one selection criterion from one of the groups "General Selection Criteria" or "Planned Order/Production Order/Process Order" to read orders for the mass processing of orders.

Special feature of selection by work center: During selection by work center, planned orders are only selected if they have undergone lead-time scheduling and have capacity requirements. For all other selection parameters, capacity requirements are not necessary.

In the group of "Selection Criteria for Production/Process Order", only the order type is a selection criterion. The System Status and User Status fields are only restrictive criteria. These two selection criteria cannot be used as the only selection criteria. This means that you have to enter either an order type or a selection criterion from the other two groups for a status.

The types of an order for each checkbox are also not independent selection criteria. A general selection criterion or an order number must also be specified for a category. For example, if the category of planned orders is to be selected (checkbox is set) and no additional selection criterion was specified in the general selection criteria, no orders are read for this order category.

The restrictions to the order number in the section “Planned Order / Production Order / Process Order” are only valid for the selected category of the order. For example, if you want to select planned orders and production orders (checkboxes are set) and you have set a restricting order number for production orders only, then all planned orders are read according to the general selection criteria and, for the production orders, only the orders for which the number has been specified are displayed.

Special feature Start Date selection field: For planned orders and production orders, the selection is made for the basic start date. For process orders, you can use the parameter settings for the data provider /LMPC/CL_MP_DP_STD to switch the selection to the scheduled start date.

The following fields on the selection screen can be preset using user parameters:

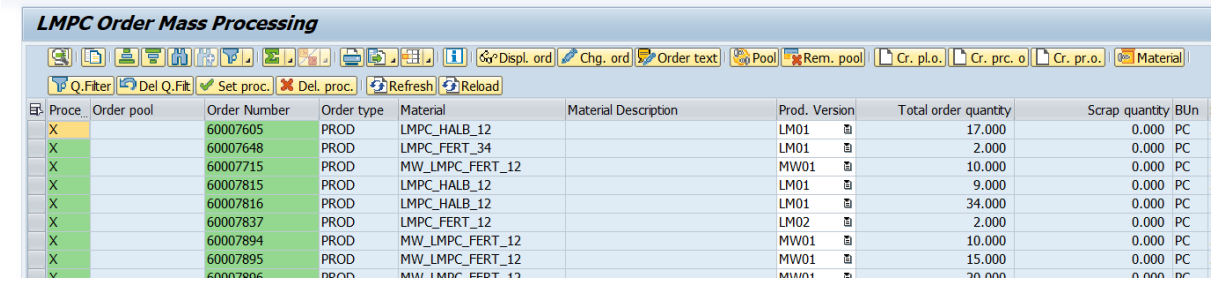
- /LMPC/MP overall profile
- MRP Controller
- Material
- Planning Plant
- Work Center
- Resource network
- Order type

The description of the user parameters are contained in the LMPC Configuration Guide.

3.2 Work Screen

LMPC MP Work Screen

After executing the selection, you branch to the screen for processing the orders. The work screen of LMPC order mass processing shows a tabular list of all selected orders in an ALV Grid.



Proce...	Order pool	Order Number	Order type	Material	Material Description	Prod. Version	Total order quantity	Scrap quantity	BUn
X		60007605	PROD	LMPC_HALB_12		LM01	17.000	0.000	PC
X		60007648	PROD	LMPC_FERT_34		LM01	2.000	0.000	PC
X		60007715	PROD	MW_LMPC_FERT_12		MW01	10.000	0.000	PC
X		60007815	PROD	LMPC_HALB_12		LM01	9.000	0.000	PC
X		60007816	PROD	LMPC_HALB_12		LM01	34.000	0.000	PC
X		60007837	PROD	LMPC_FERT_12		LM02	2.000	0.000	PC
X		60007894	PROD	MW_LMPC_FERT_12		MW01	10.000	0.000	PC
X		60007895	PROD	MW_LMPC_FERT_12		MW01	15.000	0.000	PC

Order Processing Screen

The bar with the executable functions is located above the ALV Grid. ALV Grid standard functions, such as sort, filter, total, print, and so on are available. You then find buttons for the action codes of order mass processing. The relevant Customizing settings determine which of the action codes are available.

In LMPC MP, action codes can be executed in different ways:

- The buttons in the header of the ALV Grid enable you to execute the corresponding action on the selected orders after selecting orders.
- You can double-click on individual ALV Grid fields to call action codes.
- You can use a function key (F-key = hot key) to execute action codes.
- Action codes can be executed using a field that is ready for input in the table display.

> ⚠ Restriction
>
> Not all action codes can be executed with all types of call. This depends on the action code. The description of the individual action codes in the following chapters provides more detailed information about this.
>
> The update of all changes made by the functions takes place immediately in the database. It is neither necessary nor possible to save changes manually. Therefore, the save button in the header bar is also disabled.

3.3 Table Columns

Available Columns in /LMPC/MP

The layout configuration of the ALV Grid enables the user to show or hide the available columns.

The following fields are available:

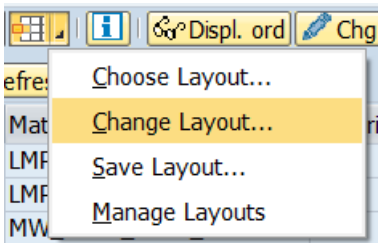
Field	Technical Name
Order Header	
LMPC Order Number	DELNR_OH
Plant	WERKS_OH
Production Version	VERID_OH
Total Order Quantity	GAMNG_OH
Production Scrap Quantity	AVMNG_OH
Base Unit of Measure	GMEIN_OH
Order Date Basic Start Date or Scheduled Start	START_DATE_OH
Order Category	TYPKZ_OH
Sales Order Number	KDAUF_OH
Item Number in Sales Order	KDPOS_OH
MRP Controller for Order	KDPOS_OH
LMPC Combined Order Type	COMB_ORDER_TYPE_OH
Resource Network Name	NNAME_OH
Task List Type	PLNTY_OH
Task List Group	PLNNR_OH
Group Counter	PLNAL_OH
General Material Master	
Material Number	MATNR_MA
Material Group	MATKL_MA
Material Description	MAKTX_MA
Material Master (Plant-Dependent)	
Maximum Storage Period	MAXLZ_MC
LMPC Fields	
Order Pool	POOL_GUID_LM
LMPC Order Text	CORDTEXT_LM
Order Processing Status Yes/No	ORDER_STATE_BOOL_LM
Production- and Process-Order-Specific Fields in / LMPC/MP	
Order Category	AUTYP_FA
User Status Header (Formatted)	ASKOX_FA
System Status Header (Formatted)	SSKOX_FA
Plan/Recipe Header Fields	

Field	Technical Name
Status of Plan/Recipe	STATU_PK
Technical Fields	
Internal Index	MP_INDEX_IT

Special feature Start Date: The basic start date is displayed for planned orders and production orders. For process orders, depending on the parameter settings, the scheduled start date can also be displayed.

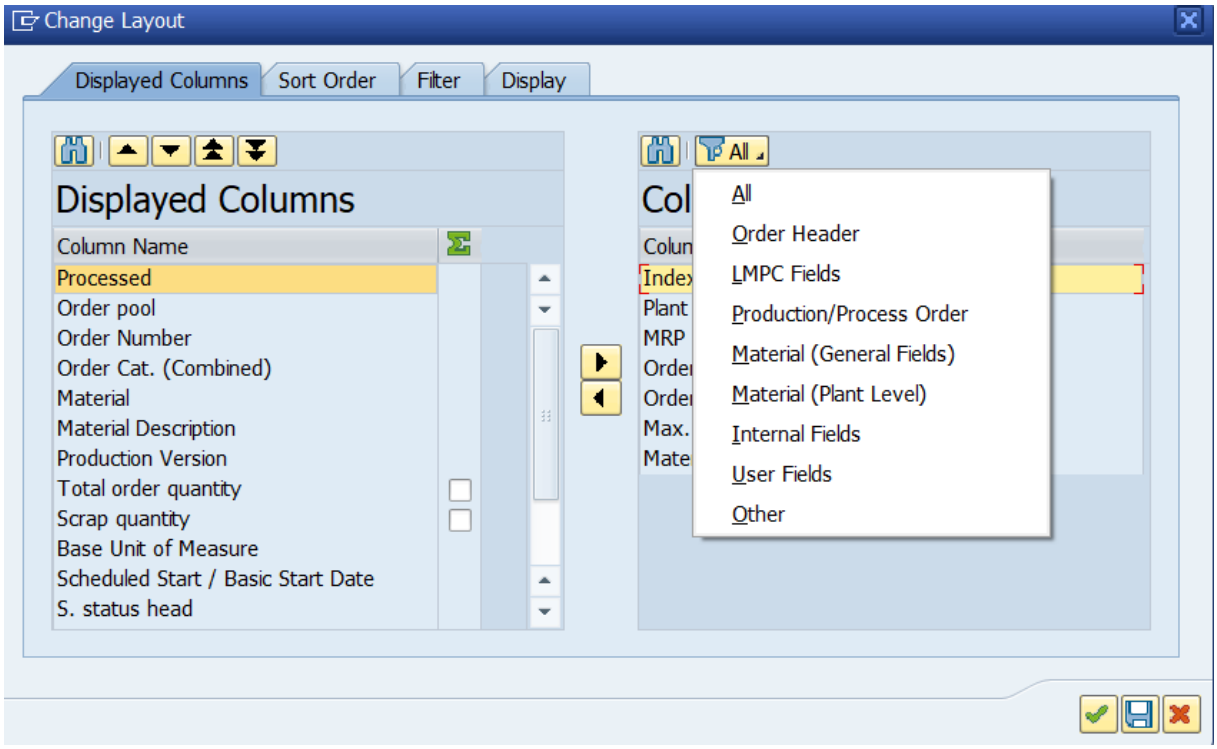
The standard delivery returns a DEFAULT layout, which is a basic setting for the fields. The display can be adapted to the needs of each user.

To change the display, use the button for the layout in the header row of the ALV Grid.



Change Layout

You can use the menu option "Change Layout" to configure the displayed columns.



Column Selection

Columns available for selection are displayed filtered by category. The two buttons with the left arrow and the right arrow button can be used to show or hide the columns.

You can save and load layouts. The layout that is displayed when you start the order mass processing depends on the Customizing of the overall profile. If a layout is entered in the overall profile, this always overrides all user-specific or preset layouts. If no layout has been entered, the system uses the layout that was saved as the default setting.

> **Note**
>
> In contrast to the HJPT planning table, only very few fields are available in /LMPC/MP. For the runtime to be as minimal as possible, only the most important data for the orders is read. If you need more data, please contact LMPC consulting. Additional data can be added as part of an enhancement project.

3.4 /LMPC/MP Action Codes

LMPC MP Action Codes

The following describes the action codes of the order mass processing /LMPC/MP that are contained in the LMPC standard delivery. The name of the action codes in the standard system all start with the letter “M”.

Related Information

MP Action Codes

3.4.1 M_ATP ATP Check

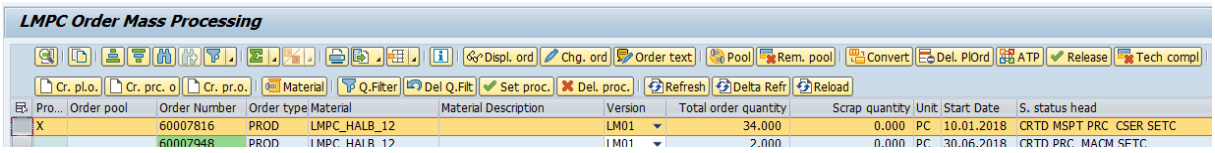
Mass ATP Check

Use

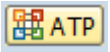
You can use the function M_ATP to execute a mass ATP check for the selected orders.

Procedure

Select an order.



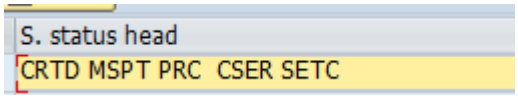
Selection

Execute the action code 

(M_ATP).

Result:

For production orders, you can see the status for the result of the ATP check.



Result of ATP Check

For planned orders, the status can be read via a jump to the relevant order.

Related Information

Parameters for Action Codes of Mass Processing with PPIO_ENTRY

3.4.2 M_CHANGE_ORDER, M_DISPLAY_ORDER Display Order & Change Order

Display and Change Orders

Use

You can use the “Change Order” function (M_CHANGE_ORDER) to switch to the order change transaction of the selected order, depending on the order type:

- MD12 for planned orders
- CO02 for production orders
- COR2 for process orders

After the user leaves the change transaction, the changed data is saved immediately. The changes to the processed order are read and the display is updated in the ALV Grid.

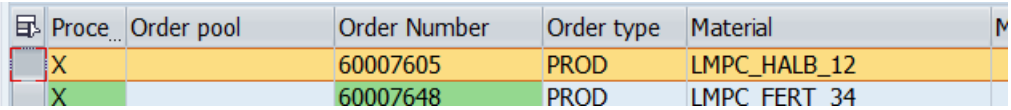
The "Display Order" (M_DISPLAY_ORDER) function works in the same way as "Change Order", however, the relevant display transaction (MD12, CO02, COR2) is called instead of the change transaction. After you leave the transaction, the system does not update the data in this case.

> ⚠ Restriction
>
> Only one order can be processed per function call. In the event of multiple selection, only the first selected order is opened.

> → Tip
>
> In the standard system, Customizing is set such that when you double-click on the order number, the system calls the change transaction.

Procedure

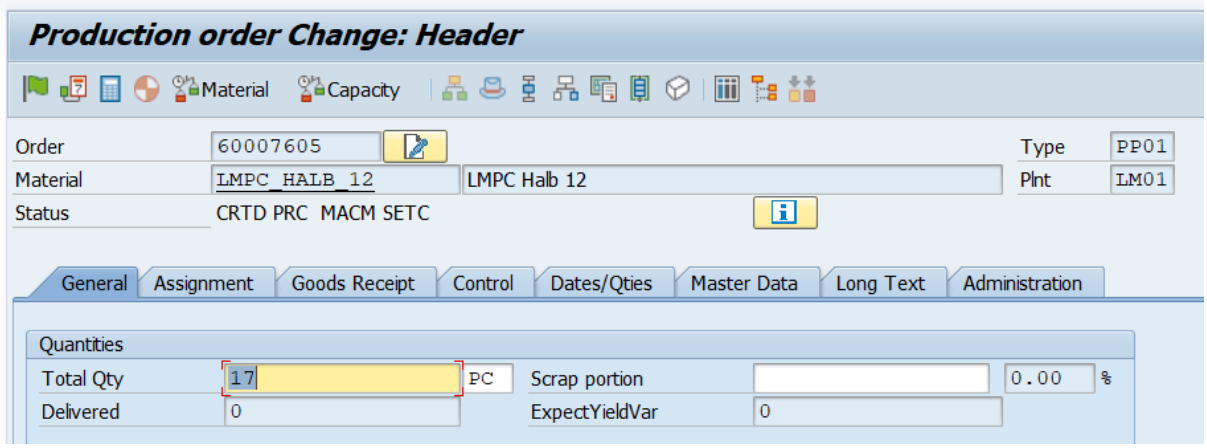
Select an order.



Selection of an Order

Click on the button Chg. ord (M_CHANGE_ORDER).

Result:



Change Screen

Result: The screen for changing the order is displayed.

Related Information

Parameters for Action Code M_DISPLAY_ORDER

3.4.3 M_CONV Order Conversion

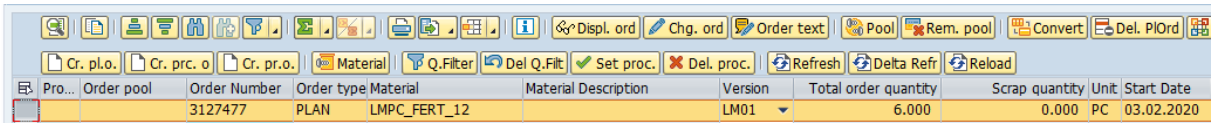
Mass Conversion of Orders

Use

Using LMPC order mass processing, you can convert planned orders to production or process orders.

Procedure

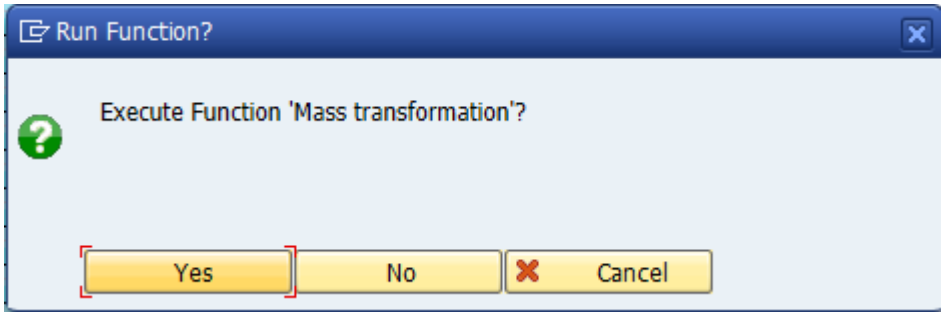
Select an order.



Selection

Execute the action code Convert (M_CONV).

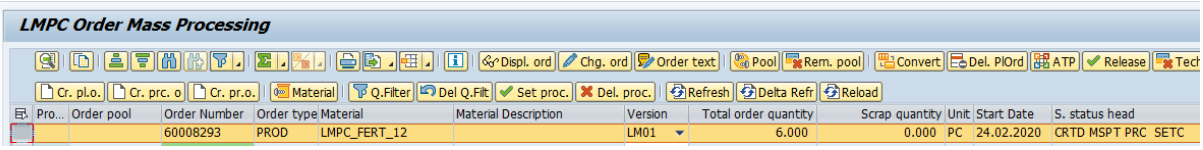
The system asks you whether you really want to execute the action.



Actual Execution Query

Result:

The planned order disappears, a new production order is displayed.



Result of Planned Order Conversion

> ⚠ Restriction
>
> It is not intended to output the conversion log. Do not set the output of the log in the program variants for the program PPIO_ENTRY because this will result in errors.

Related Information

Parameters for Action Codes of Mass Processing with PPIO_ENTRY

3.4.4 M_MD11, M_CO01, M_COR1 Create Planned Order, Create Production Order, Create Process Order

Create Orders

Use

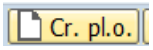
You can use LMPC order mass processing to branch directly to the transactions for creating new orders. A planned order (MD11), a production order (CO01), or a process order (COR1) can be created.

After you exit the transaction, order mass processing checks whether new orders exist that match the selection criteria. If new orders are found, they are added to the table for order mass processing. This means

that a newly created order is immediately available in mass processing without the need to reenter the program.

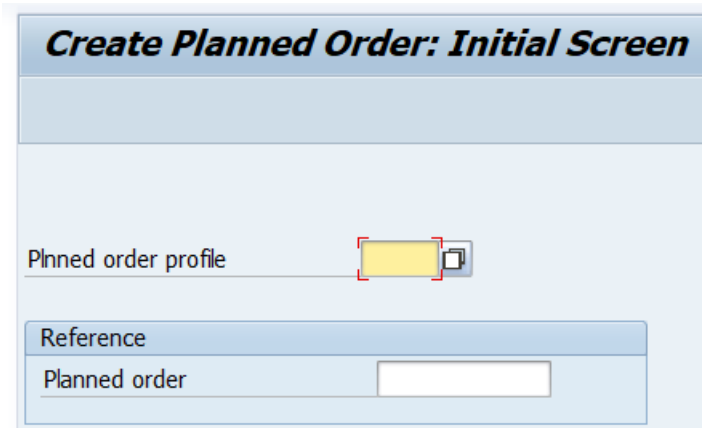
> **⚠ Restriction**
>
> The newly created order must meet the selection criteria.

Procedure

Choose the pushbutton 

(M_MD11) to jump to transaction MD11 for creating a planned order.

Result:



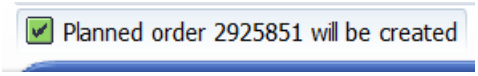
Initial Screen for Planned Order Creation

Enter the data for the planned order.

Save the new planned order.

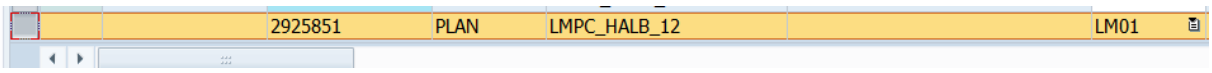
You return to order mass processing automatically.

The system issues a message with the order number in the footer:



Message

The relevant order is contained in the ALV Grid list:



Newly Created Order

A production order or process order is created in the same way.

Related Information

Parameters for Calling Transactions with Class /LMPC/CL_MP_ACTION_CALL_TCODE

3.4.5 M_CORTXT Change LMPC Order Text

LMPC Order Text

Use

This function can be used to change the LMPC order text. The change can be made in two ways.

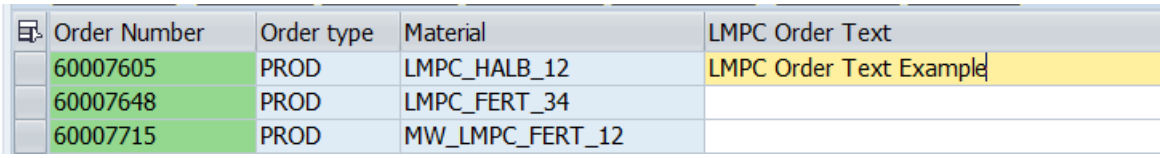
- Direct input in input-enabled field
- Input in a dialog box

LMPC order texts that are older than 6 months are automatically deleted when the function is used to prevent an overflow of the database table.

> → Remember
>
> The LMPC order text does not correspond to the order text in the header of the production order. This is a separate text that can be maintained for each order within LMPC and is available in the LMPC planning table and in LMPC mass processing. This text can also be set for planned orders.

Direct Input Procedure

Enter an LMPC order text directly in the corresponding field in the ALV Grid.

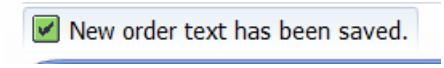


Order Number	Order type	Material	LMPC Order Text
60007605	PROD	LMPC_HALB_12	LMPC Order Text Example
60007648	PROD	LMPC_FERT_34	
60007715	PROD	MW_LMPC_FERT_12	

Input LMPC Order Text

Confirm your entry by choosing *Enter*.

A confirmation message appears.



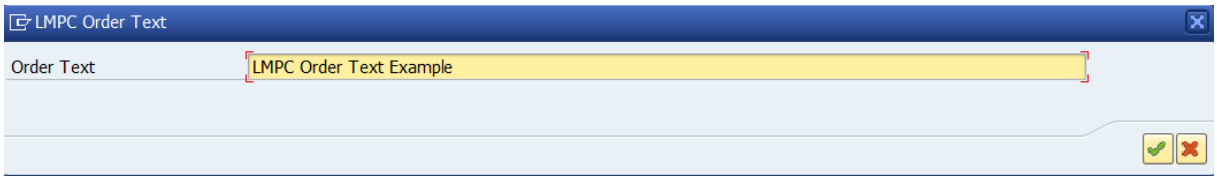
Confirmation Message

Procedure for Input via Dialog Box

Select a row in the ALV Grid.

Execute the action code Order text (M_CORTXT).

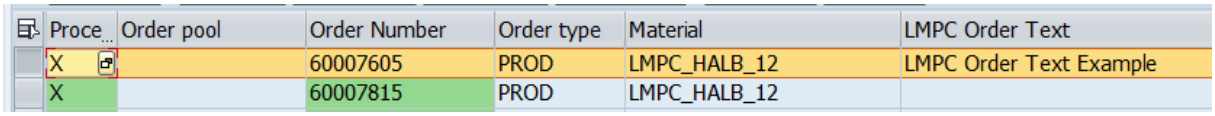
A dialog box opens.



Dialog Box

Enter the order text and confirm.

The order text is displayed in the column in the ALV Grid.



Proce...	Order pool	Order Number	Order type	Material	LMPC Order Text
X		60007605	PROD	LMPC_HALB_12	LMPC Order Text Example
X		60007815	PROD	LMPC_HALB_12	

Result

3.4.6 M_CPV Change Production Version

Change Production Version

Use

You can select and change the production version for each order using a dropdown menu in the relevant row in the ALV Grid. Only production versions that have the following characteristics are available:

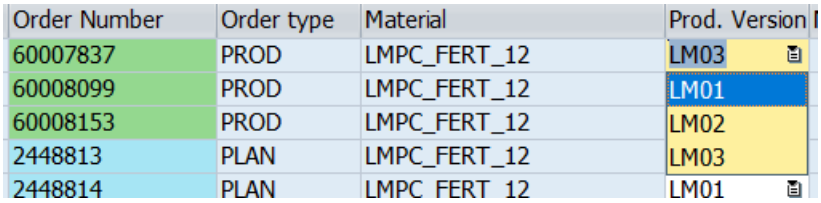
- Valid for the material produced
- Valid for their validity period
- Valid for the lot size of the order
- Not locked in general

The switch takes place after selecting the new production version, either by choosing Enter or by switching to another cell in the ALV Grid.

> **⚠ Restriction**
>
> - Production versions must contain information about the lot size so that they can be processed. Production versions that do not have lot size information are not read and processed.
> - This action code can only be executed using the dropdown menu (Trigger field ready for input). A different trigger is not an option.

Procedure

For an order for which there are several valid production versions, select a production version directly from the dropdown menu of the “Version” column.



Order Number	Order type	Material	Prod. Version
60007837	PROD	LMPC_FERT_12	LM03
60008099	PROD	LMPC_FERT_12	LM01
60008153	PROD	LMPC_FERT_12	LM02
2448813	PLAN	LMPC_FERT_12	LM03
2448814	PLAN	LMPC_FERT_12	LM01

Production Version Selection

Choose *Enter*.

The production version is changed immediately.

3.4.7 M_DEL_PLAF Delete Planned Order

Delete Planned Orders In Bulk

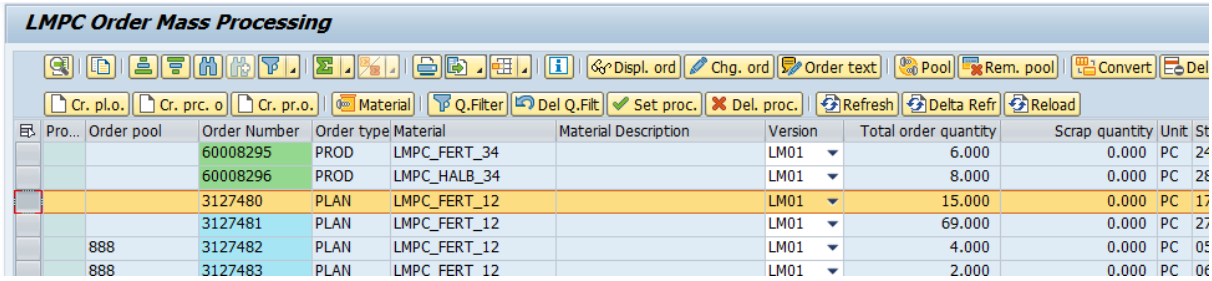
Use

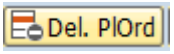
You can use this function to delete planned orders.

Procedure

Select a planned order.

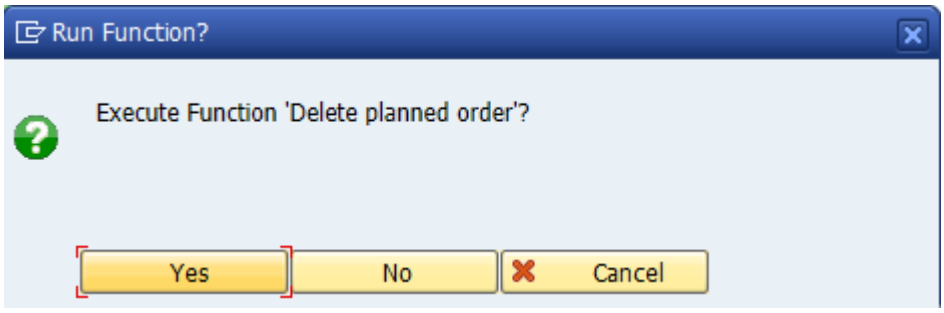
Selection



Execute the action code 

(M_DEL_PLAF).

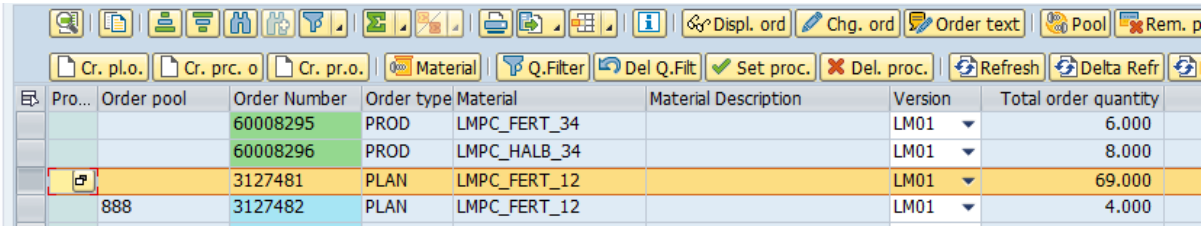
The system asks you whether you really want to execute the function.



Query Actual Execution

Result:

The planned order has disappeared.



Result

Related Information

Parameters for Action Codes of Mass Processing with PPIO_ENTRY

3.4.8 M_MFREI Release Orders

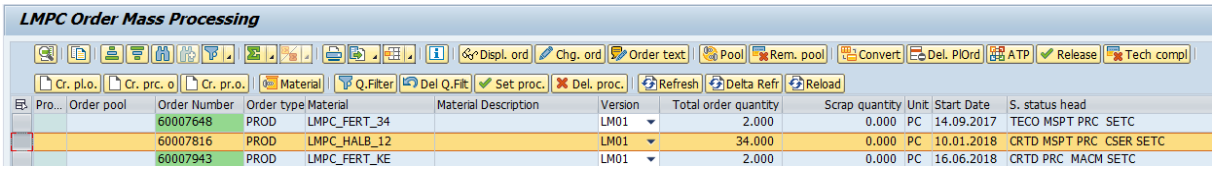
Mass Release of Orders

Use

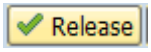
You can use this function to release production orders and process orders.

Procedure

Select a production order.

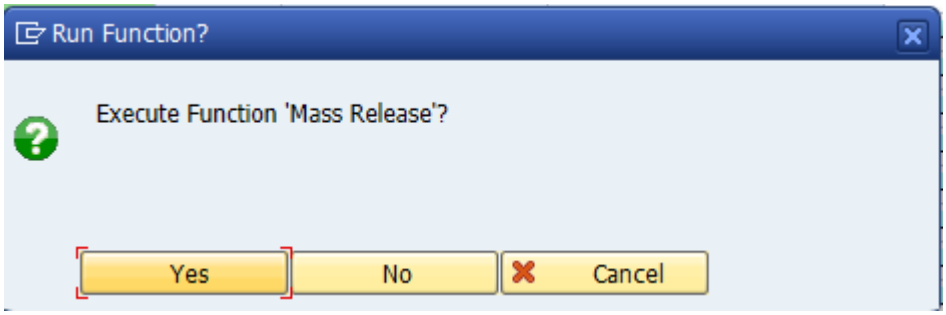


Selection

Execute the action code 

(M_MFREI).

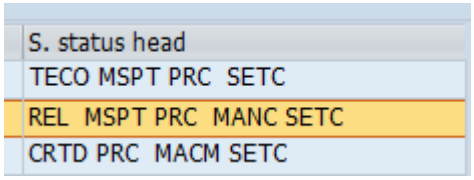
The system asks you whether you really want to execute the function.



Query Actual Execution

Result:

The status field for the system status of the order header changes. The status of the order is set to released.



Result

> **⚠ Restriction**
>
> It is not intended to output the log. Do not set the output of the log in the program variants for the program PPIO_ENTRY because this will result in errors.

Related Information

Parameters for Action Codes of Mass Processing with PPIO_ENTRY

3.4.9 M_MM03 Display Material

Go To Material Master

Use

You can use this function to switch to the material master display for the material of the selected order.

Procedure

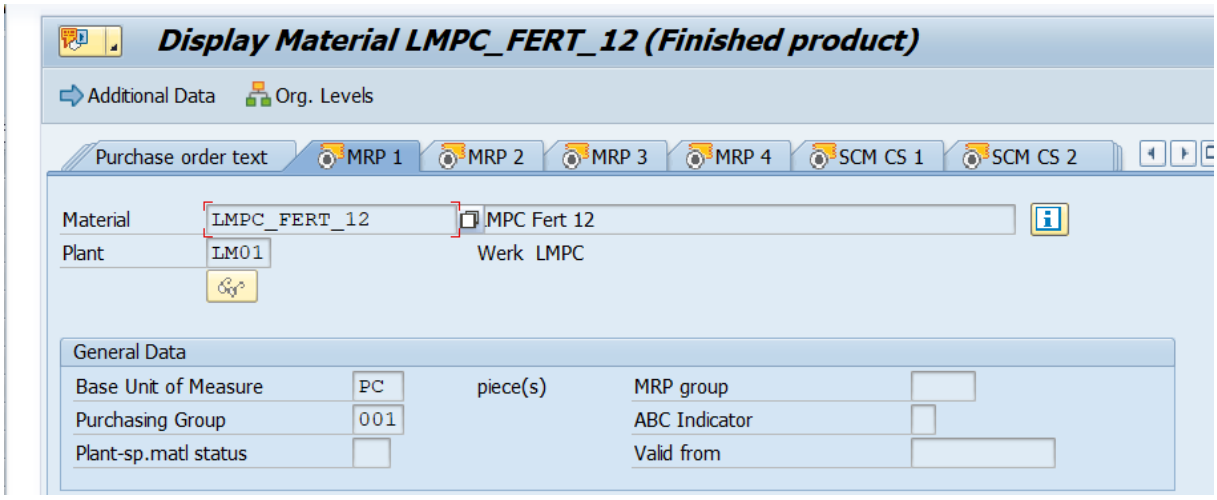
Select an order.

Proce...	Order pool	Order Number	Order type	Material
		60007837	PROD	LMPC_FERT_12
		60008099	PROD	LMPC_FERT_12
		60008153	PROD	LMPC_FERT_12

Selection of an Order

Execute the action code Material (M_MM03).

The transaction MM03 opens to display the produced material of the order.



MM03 Screen

In the standard system, the action code is set in such a way that the display of the material is opened in a new session.

Related Information

Parameters for Calling Transactions with Class /LMPC/CL_MP_ACTION_CALL_TCODE

3.4.10 M_ORDCL Technically Complete Orders

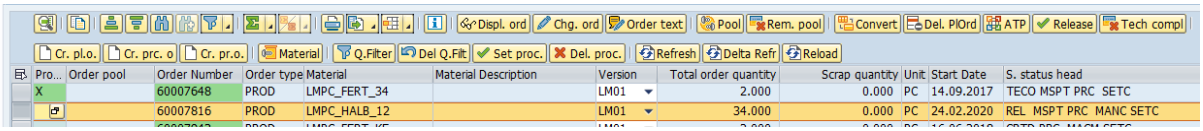
Mass Processing Technically Complete Orders

Use

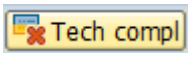
You can use this function to technically complete production or process orders.

Procedure

Select a production order.

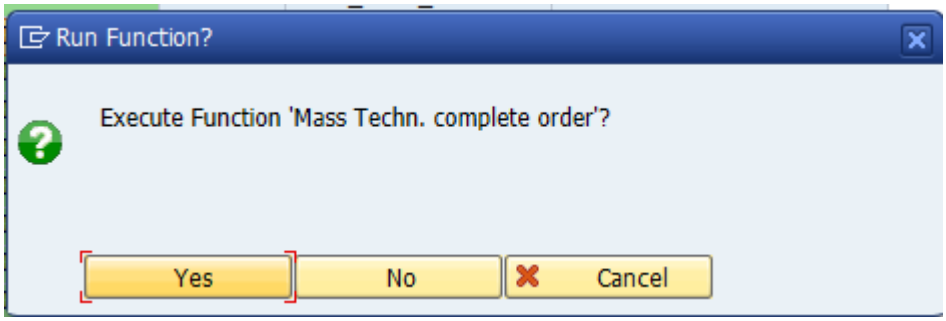


Selection

Execute the action code 

(M_ORDCL).

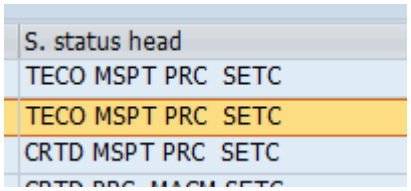
The system asks you whether you really want to execute the function.



Query Actual Execution

Result:

The status in the system status field of the order header changes. The order now has the status “technically completed”.



Result

> ⚠ Restriction
>
> It is not intended to output the log. Do not set the output of the log in the program variants for the program PPIO_ENTRY because this will result in errors.

Related Information

Parameters for Action Codes of Mass Processing with PPIO_ENTRY

3.4.11 M_POOL Pool Formation

Create LMPC Order Pools

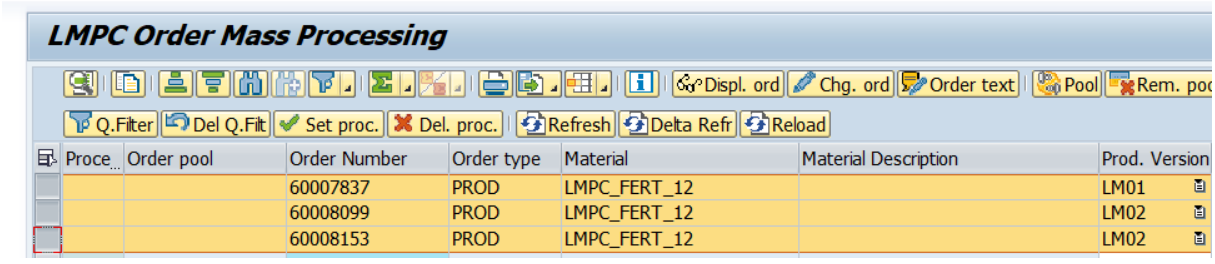
Use

The pool formation combines orders into groups. A group is identified by means of the pool ID. The pool function is a function of the LMPC HJPT planning table and is also made available in LMPC order mass processing. Pool IDs created in order mass processing are also available in the LMPC HJPT planning table and vice versa.

The "Order Pool" column shows the current pool allocation of an order.

Procedure

Select the orders that you want to combine as an order pool.



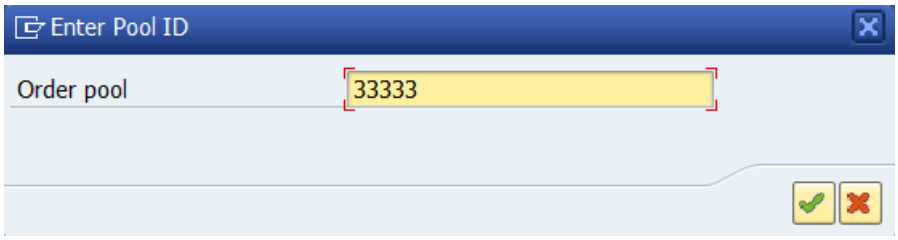
Selection of Orders

Execute the action code 

(M_POOL).

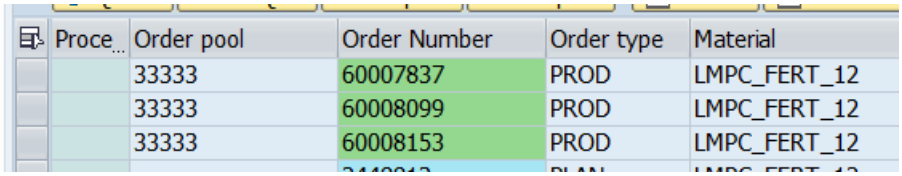
Depending on the configuration, you may need to assign the pool number (pool ID) manually. However, it is also possible that a number from a number range or a unique newly generated GUID is assigned automatically.

Manual assignment of the number:



Dialog Box

The orders have been merged into one pool and have a pool ID:



Proce...	Order pool	Order Number	Order type	Material
	33333	60007837	PROD	LMPC_FERT_12
	33333	60008099	PROD	LMPC_FERT_12
	33333	60008153	PROD	LMPC_FERT_12

Result

Pool IDs can only be assigned to production orders and process orders if they are not locked. If there is a lock for at least one of the selected orders, the function terminates with an error message.

If you want to add one or more orders to an existing pool, you must select at least one existing pool order as well as the new orders to be added in the table. If you then execute the "Pool" function, the orders without a pool ID are added to the existing pool. However, this is only possible if the addition is switched on in the configuration for the action code.

The behavior of the pool function can be adjusted further using parameter settings. The parameters are described in the configuration guide for the action code.

> ⚠ Restriction
>
> The trigger for fields that are ready for input is not supported for this action code.

Related Information

Parameter Action Code M_POOL, M_POOL_REMOVE

3.4.12 M_POOL_REMOVE Remove Order Pool

Remove Pool Assignment

This function removes the pool assignment for all selected orders.

→ Remember

A separate action code was created in /LMPC/MP for the removal of the pool ID. In the LMPC HJPT planning table, however, the removal can be performed with the same action code as the one for setting the pool ID.

⚠ Restriction

The trigger for fields that are ready for input is not supported for this action code.

Related Information

Parameter Action Code M_POOL, M_POOL_REMOVE

3.4.13 M_QUICKFILTER, M_QUICKFILTER_REM, Quick Filter

Filters

Use

The quick filter function action code M_QUICKFILTER is used to filter the ALV Grid for a single value of a field.

The action code can be called using a button in the header of the ALV Grid or by double-clicking on a field defined in Customizing.

When the action code is executed, the current sorting and the current filter of the ALV Grid are saved. The previous filter is removed and a new filter is set up with the value of the quick filter. Sorting is not affected by this.

The quick filter is removed using the action code M_QUICKFILTER_REM. This is connected to the *Back* button in the menu bar in the standard delivery. However, the action code can also be executed using an action code button in the header of the ALV Grid. This restores the saved filter and the saved sorting.

In the standard system, a quick filter is set up for the material number.

⚠ Restriction

You can filter only one field value at a time. A combination of field values is not possible. A quick filter cannot be set again while a quick filter is active. Combined quick filters are therefore not possible. You can double-click to create quick filters for multiple fields, but only one quick filter can be active at a time.

The trigger for fields that are ready for input is not supported for this action code.

Procedure

Double-click procedure:

Order Number	Order type	Material	Material Description	Prod. Version	Total order quantity
60007918	PROD	LMPC_HALB_34		LM01	4.000
60008060	PROD	LMPC_HALB_12		LM01	5.000
60008085	PROD	ZMTH_CHARGE_FG_1		ZMC1	199.000
60008100	PROD	LMPC_FERT_34		LM01	2.000
60008124	PROD	ZMTH_FG_1		ZFM2	18.000
60008125	PROD	ZMTH_BULK_1		ZMB1	19.000
60008147	PROD	LMPC_EK_01		001	10.000
60008148	PROD	LMPC_EK_01		001	20.000
60008152	PROD	MW_LMPC_FERT_12		MW01	1.000
70001007	PROC	LMPC_PRHA_12		LM02	29.000
70001054	PROC	LMPC_PRHA_12		LM02	7.000
70001504	PROC	ZMTH_PRFE_E1		ZMI1	3.000
70001524	PROC	ZMTH_PRFE_E2		ZM01	10.000
70001542	PROC	ZMTH_PRFE_E2		ZM01	19.000
70001543	PROC	LMPC_PRHA_34		LM02	9.000

Initial Situation

Initially, a large number of orders is displayed. A quick filter is set up for the “Material” field.

Double-click the material number in a field to filter.

Result:

Order Number	Order type	Material	Material Description	Prod. Version
60007918	PROD	LMPC_HALB_34		LM01
2912594	PLAN	LMPC_HALB_34		LM01
2916135	PLAN	LMPC_HALB_34		LM01
2916136	PLAN	LMPC_HALB_34		LM01

Quick Filter Result

Only orders for this material are displayed.

To remove the quick filter, choose the *Back* button in the SAP GUI menu bar.

The quick filter is deleted and the previous sorting and previous filters are restored.

Procedure for Action Code Button in ALV Grid:

Order Number	Order type	Material	Material Description	Prod. Version	Total order quantity
60007918	PROD	LMPC_HALB_34		LM01	4.000
60008060	PROD	LMPC_HALB_12		LM01	5.000
60008085	PROD	ZMTH_CHARGE_FG_1		ZMC1	199.000
60008100	PROD	LMPC_FERT_34		LM01	2.000
60008124	PROD	ZMTH_FG_1		ZFM2	18.000
60008125	PROD	ZMTH_BULK_1		ZMB1	19.000
60008147	PROD	LMPC_EK_01		001	10.000
60008148	PROD	LMPC_EK_01		001	20.000
60008152	PROD	MW_LMPC_FERT_12		MW01	1.000
70001007	PROC	LMPC_PRHA_12		LM02	29.000
70001054	PROC	LMPC_PRHA_12		LM02	7.000
70001504	PROC	ZMTH_PRFE_E1		ZMI1	3.000
70001524	PROC	ZMTH_PRFE_E2		ZM01	10.000
70001542	PROC	ZMTH_PRFE_E2		ZM01	19.000
70001543	PROC	LMPC_PRHA_34		LM02	9.000

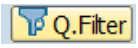
Initial Situation

Initially, a large number of orders is displayed. A quick filter is set up for the “Material” field.

Select a row in the ALV Grid.

Order Number	Order type	Material	Mat
60007918	PROD	LMPC_HALB_34	
60008060	PROD	LMPC_HALB_12	
60008085	PROD	ZMTH_CHARGE_FG_1	

Selection

Execute the action code 

(M_QUICKFILTER).

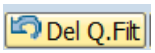
In Customizing, you have set that the system is to filter according to the material column.

The material number is read from the selected line and a filter is set for this value.

Order Number	Order type	Material	Material Description	Prod. Version
60007918	PROD	LMPC_HALB_34		LM01
2912594	PLAN	LMPC_HALB_34		LM01
2916135	PLAN	LMPC_HALB_34		LM01
2916136	PLAN	LMPC_HALB_34		LM01

Result

Only orders for this material are displayed.

To remove this filter, choose the ALV Grid button 

(M_QUICKFILTER_REM). The quick filter is deleted and the previous sorting and previous filters are restored.

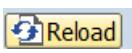
Related Information

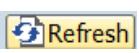
Parameters for Action Code M_QUICKFILTER, M_QUICKFILTER_REM

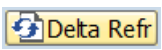
3.4.14 M_RELOAD, M_REFRESH, M_REFRESH_DELTA, Update of Display

Action Codes for Refresh

Use

You can use the action codes 

(M_RELOAD), 

(M_REFRESH), and 

(M_REFRESH_DELTA) to update the data displayed for the orders.

Reload

In the case of a reload, all data of the order table is rejected. The orders are then selected again and their data loaded. A reload is therefore a new entry with identical selection criteria.

Refresh

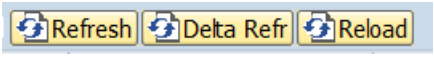
In a refresh, the system reads the data for all open orders again. Since no new selection takes place in contrast to the reload, the refresh does not find any new orders. The refresh takes less runtime than the reload.

Delta Refresh

During the delta refresh, only the data for the selected orders is reloaded.

Procedure

Open orders in LMPC order mass processing were changed externally, not in the program itself. If you now want to reload the current data for these orders, choose the Refresh button. If you also want to search for new orders in the meantime, use "Reload" instead. If you only want to read data for specific orders, use "Delta Refresh".



Action Codes for Updating Data

In addition to refresh and reload, there are two other functions that are only used internally by other action codes. A direct call by the user is not planned. The action codes are documented here for the sake of completeness.

- M_REFRESH_CHANGED - Update orders marked as "changed" internally
- M_REFRESH_NEW – like M_REFRESH_CHANGED, only that by reevaluating the selection criteria, newly created orders are also found and added.

> ⚠ Restriction
>
> The trigger for fields that are ready for input is not supported for these action codes.

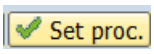
Related Information

Parameters for Refresh Action Codes

3.4.15 M_SET_STATE, M_RESET_STATE Select Order as "Processed"

Set Selection

Use

You can use the action code 

(M_SET_STATU) to set orders to "processed" manually. The selection is purely for information purposes and has no actual effect on the order.

It is saved using an LMPC table, from which old entries are automatically removed after a configurable period.

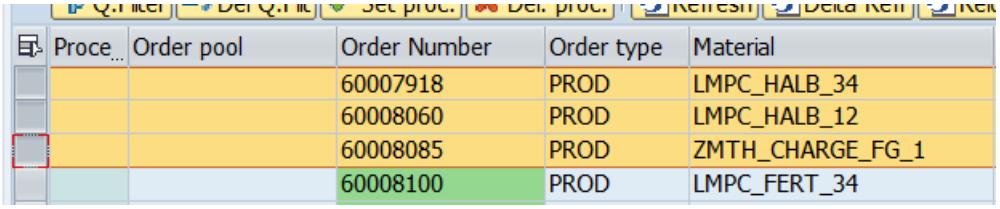
In the ALV Grid of order mass processing, the column with the flag for processing can be displayed. For example, a filter, a sorting, or a coloring can be set for this field.

In the standard system, the field is colored with the status green if an order is marked as "processed" and in light blue if it is not flagged.

You can use the action code Del. proc. (M_RESET_STATE) to remove the selection of the order.

Procedure

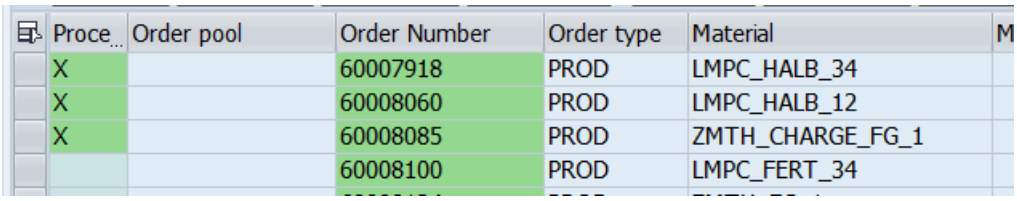
Select at least one order.



Proce...	Order pool	Order Number	Order type	Material
		60007918	PROD	LMPC_HALB_34
		60008060	PROD	LMPC_HALB_12
		60008085	PROD	ZMTH_CHARGE_FG_1
		60008100	PROD	LMPC_FERT_34

Selection

Execute the action code Set proc. (M_SET_STATE) to set the processing indicator.



Proce...	Order pool	Order Number	Order type	Material	M
X		60007918	PROD	LMPC_HALB_34	
X		60008060	PROD	LMPC_HALB_12	
X		60008085	PROD	ZMTH_CHARGE_FG_1	
		60008100	PROD	LMPC_FERT_34	

Result

The orders have been selected as processed.

To remove the selection, execute the action code Del. proc. (M_RESET_STATE).

> ⚠ Restriction
>
> The trigger for fields that are ready for input is not supported for this action code.

Related Information

Parameters for Action Codes M_SET_STATE, M_RESET_STATE

4 LMPC Delete and Create Planning Data

You can use transaction /LMPC/DCPD to delete and recreate planning data.

The program has two program steps that can be activated separately:

- Program step 1: Deletion of firmed planned orders
- Program step 2: Single- or multilevel MRP run

If program step 1 is activated, the firmed planned orders are deleted for the selected materials.

The unfirmed planned orders are not deleted because they can be deleted or changed using program step 2.

As soon as a planned order is changed, for example, by dispatching in the HJPT planning table, the planned order receives a firming indicator and is therefore no longer changed or deleted by the MRP run.

If program step 2 is switched on, a single-level or multilevel MRP run can be executed.

This program combines logics from transactions MD16, MD02, and MD03 with its program steps.

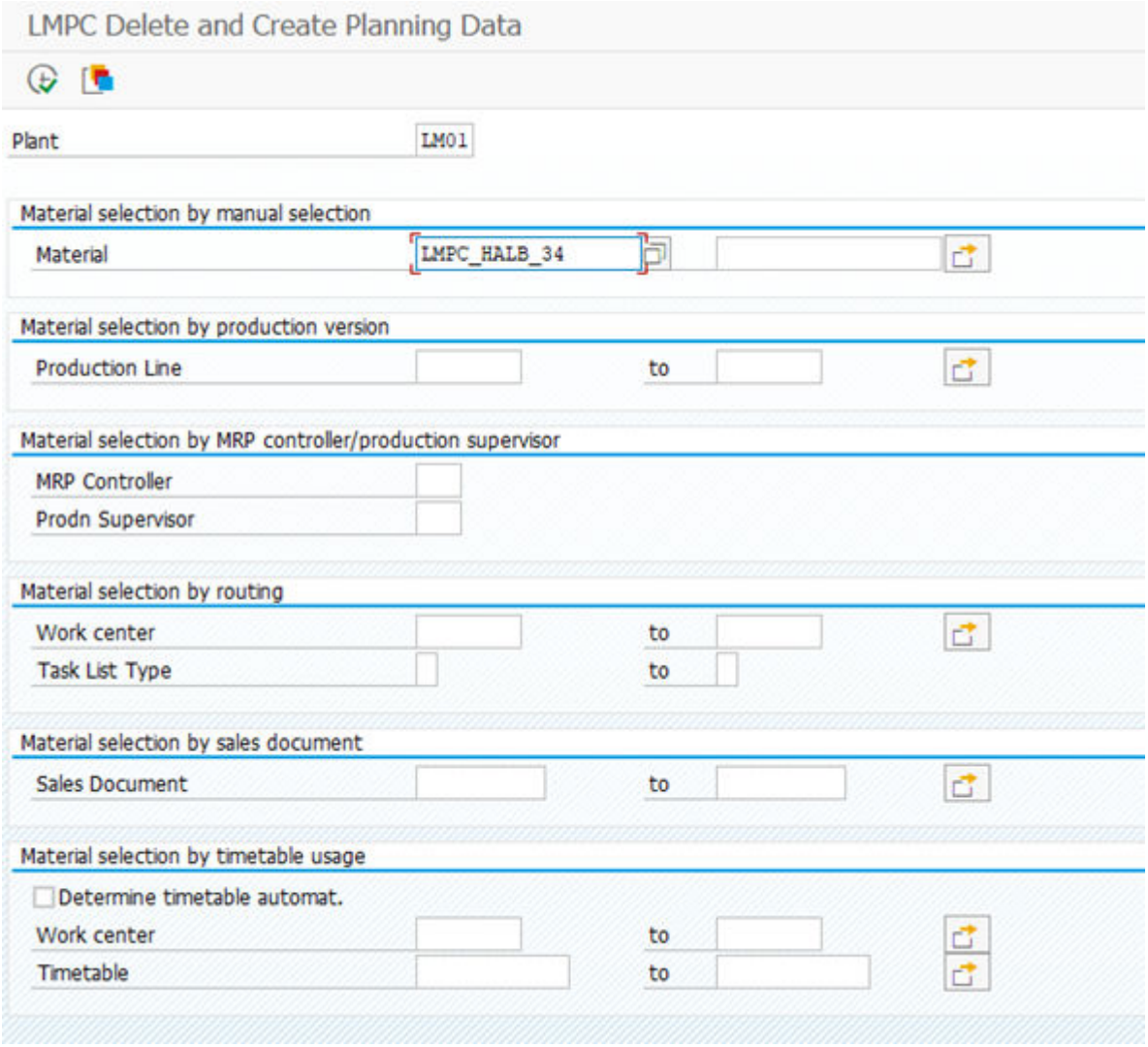
> → Tip
>
> The program can also be executed as a job in the background. This means that an MRP run can be executed at night.

For the detailed description of the program see the following chapters:

- /LMPC/DCPD Selection Screen [page 554]
- /LMPC/DCPD Material List [page 557]
- /LMPC/DCPD Application log [page 558]

You can use the action code S_DCPD to call the program in the HJPT planning table. S_DCPD Delete and Create Planning Data [page 160]

4.1 /LMPC/DCPD Selection Screen



/LMPC/DCPD Selection Screen Part 1

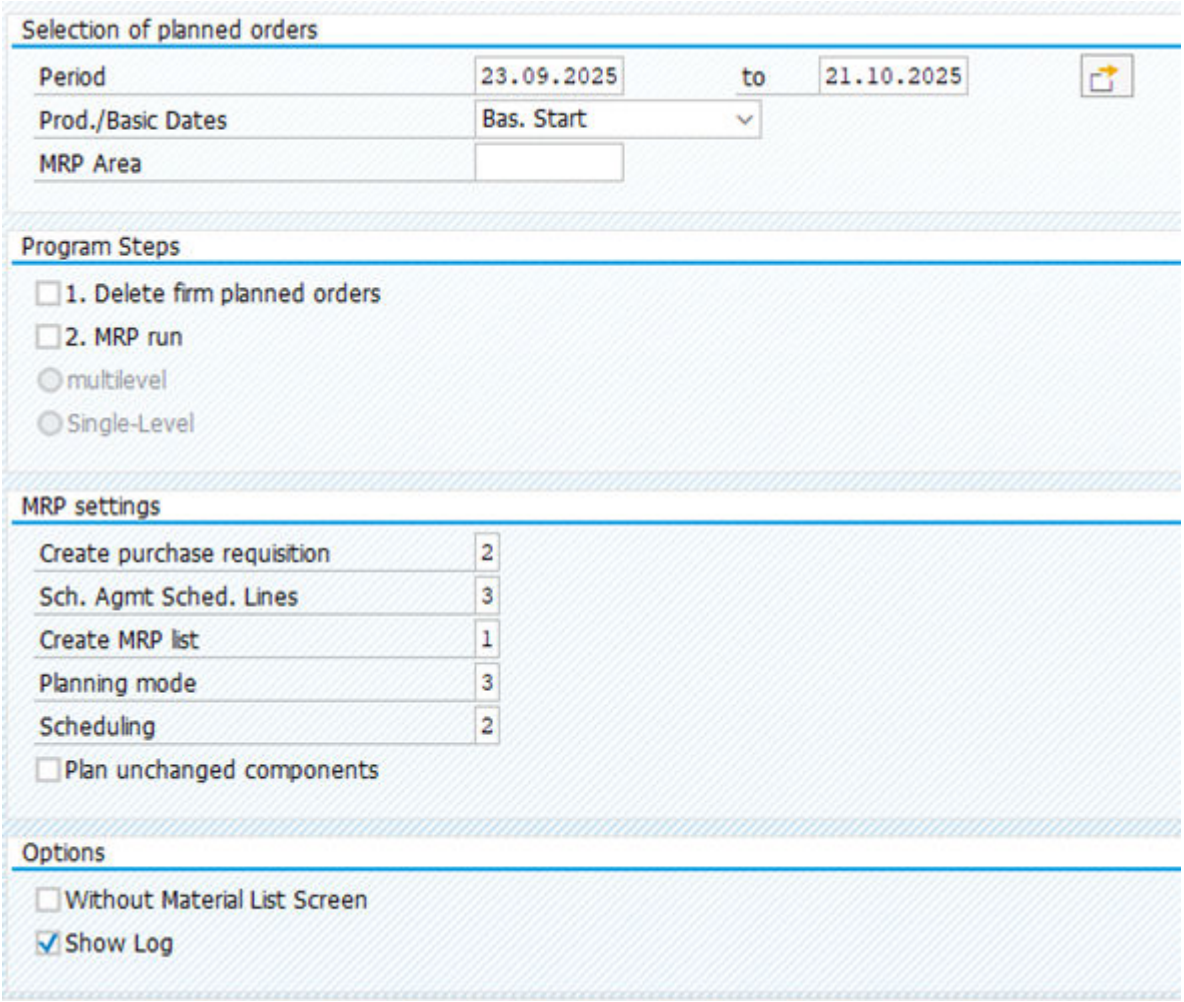
The selection screen includes the following fields:

Field Name	Description
Plant	Executing plant
Material selection	
Material selection by manual selection	
Material	Material number, single value, or from/to range.
Material selection by production version	
Production Line	Selection by production line, entered in the production version of the corresponding material numbers.

Field Name	Description
Material selection by MRP controller / production supervisor	
MRP Controller	Selection by MRP controller.
Production Supervisor	Selection by production supervisor.
Material selection by routing type	
Work Center	Work center for which planning is to be performed, single value, or from/to range.
Routing type	Selection by routing type.
Material selection by sales document	
Sales Document	Sales order number, single value, or from/to range.
Material selection by timetable usage	
Determine Timetable Automatically	Checkbox: Timetable and materials are determined automatically by means of the work center entered (next field). If this option is used, it is not mandatory to enter a timetable.
Work Center	Work center for which the timetable is to be determined. Required field if you have activated automatic timetable selection.
Timetable	Timetable to be used. Ignored if used together with "Determine Timetable Automatically".
Selection of planned orders	
Period	Enter the period for data selection.
Prod./Basic Dates	Planned orders are selected in the period by means of one of the following criteria: • Basic start date • Basic finish date • Scheduled start (production) if available; otherwise basic start date • Scheduled finish (production) if available; otherwise basic finish date
MRP Area	Limits reading of planned orders to a specific MRP area.
Program Steps	
1. Delete firm planned orders	Delete the firmed planned orders in the selected period.
1. MRP run	Execute a single-level or multilevel MRP run.
MRP settings	
Create MRP List	Create MRP list (in the same way as in standard requirements planning)

Field Name	Description
Create Purchase Requisition	Create purchase requisition (in the same way as in standard requirements planning)
Scheduling Agreement Schedule Lines	Create scheduling agreement schedule lines (in the same way as in standard requirements planning)
Planning Mode	Planning mode (in the same way as in standard requirements planning)
Scheduling	Scheduling 2 = Lead-time scheduling (prerequisite for subsequent use of planned orders in the LMPC HJPT planning table)
Options	
Without Material List Screen	Do not display the list of materials. Set this indicator if the transaction is to be scheduled in the background job.
Display Log	If activated, the log is displayed at the end of the program execution.

The fields can be prefilled using user parameters. Configuration LMPC Deletion and Creation of Planning Data

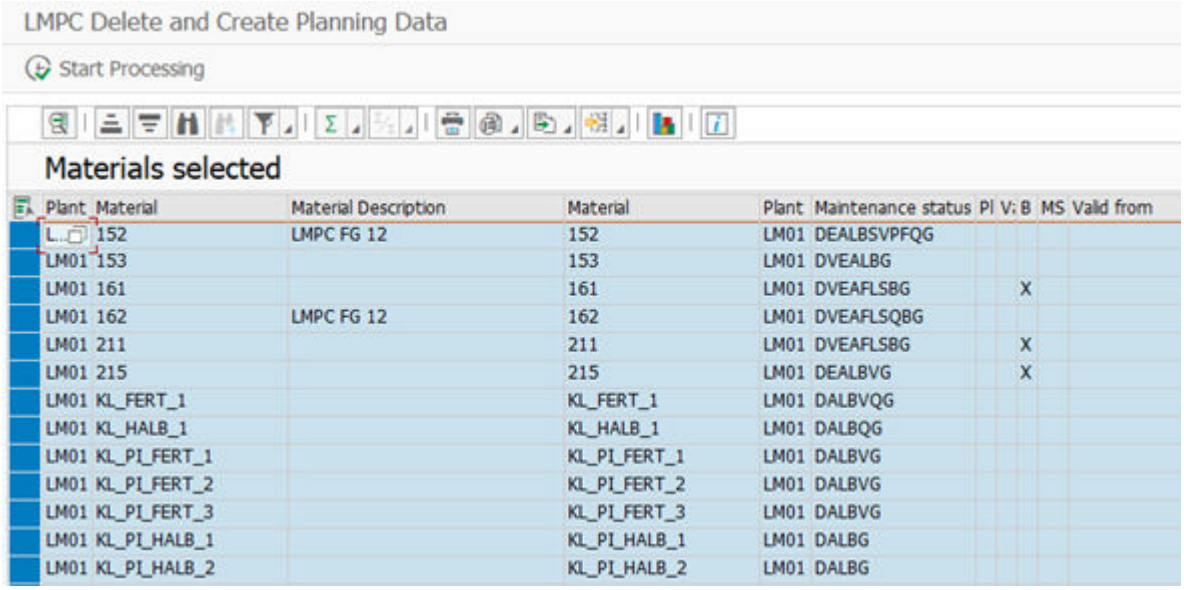


/LMPC/DCPD Selection Screen Part 2

4.2 /LMPC/DCPD Material List

If the display of the material list is not deactivated on the selection screen, the system displays a list of the selected materials with which the subsequent logic is executed after the selection has been executed.

This screen is used to check whether the required materials have been selected.



Plant	Material	Material Description	Material	Plant	Maintenance status	Pl	V:	B	MS	Valid from
L...	152	LMPC FG 12	152	LM01	DEALBSVPFQG					
LM01	153		153	LM01	DVEALBG					
LM01	161		161	LM01	DVEAFLSBG			X		
LM01	162	LMPC FG 12	162	LM01	DVEAFLSQBG					
LM01	211		211	LM01	DVEAFLSBG			X		
LM01	215		215	LM01	DEALBVG			X		
LM01	KL_FERT_1		KL_FERT_1	LM01	DALBVQG					
LM01	KL_HALB_1		KL_HALB_1	LM01	DALBQG					
LM01	KL_PI_FERT_1		KL_PI_FERT_1	LM01	DALBVG					
LM01	KL_PI_FERT_2		KL_PI_FERT_2	LM01	DALBVG					
LM01	KL_PI_FERT_3		KL_PI_FERT_3	LM01	DALBVG					
LM01	KL_PI_HALB_1		KL_PI_HALB_1	LM01	DALBG					
LM01	KL_PI_HALB_2		KL_PI_HALB_2	LM01	DALBG					

Material List

The materials are already preselected. It is possible to deselect materials.

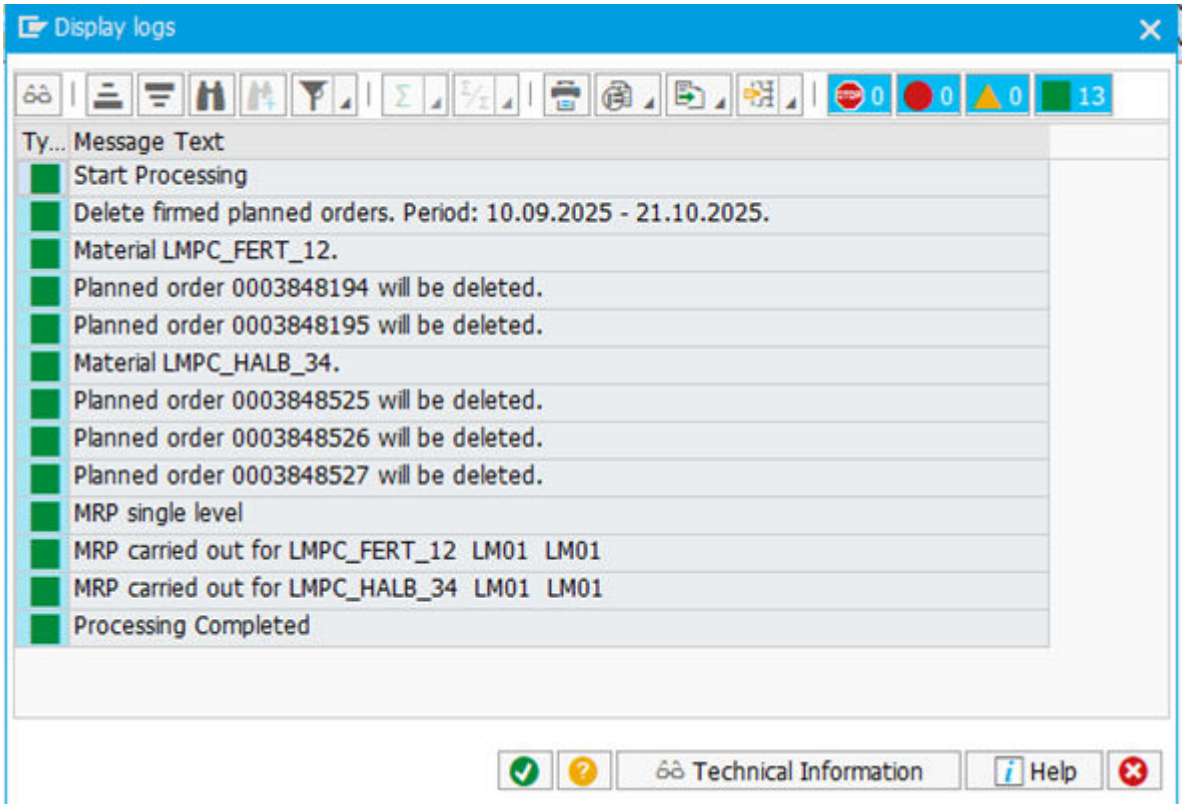
In subsequent processing, only the materials that were selected are processed.

You can start processing by choosing the button at the top left of the screen.

At the end of the program, an application log is output if this was activated on the selection screen. /LMPC/DCPD Application log [page 558]

4.3 /LMPC/DCPD Application log

If log output is activated, a log is output at the end of processing.



Example of Application Log

The log is not saved.

If the program is executed in a job in the background, the messages are transferred to the message list for background processing.

5 LMPC Order Report

For a production order, the LMPC order report shows an overview of the upstream planned and production orders for all low-level codes of the materials used. It has a similar structure to the material tree of the standard SAP transaction MD4C.

In the LMPC standard delivery, the LMPC order report shows the same data as transaction MD4C. However, the difference lies in the fact that an extension is possible via data providers and field enhancements of the underlying ALV structure.

The LMPC order report can be called in two ways:

- Via an action code from the HJPT planning table. S_ORDREP LMPC Order Report [page 166]
- As a standalone transaction. Transaction /LMPC/ORDER_REP LMPC Order Report [page 560]

Related Information

S_ORDREP Configuration: Action Code for LMPC Order Report
Configuration of the LMPC Order Report

5.1 Transaction /LMPC/ORDER_REP LMPC Order Report

Call LMPC Order Report

You can use transaction /LMPC/ORDER_REP to call the LMPC order report.

The description for the application is located in action code S_ORDREP. S_ORDREP LMPC Order Report [page 166]

6 Other Planning Scenarios for the HJPT Planning Table

Overview of planning scenarios in the HJPT planning table

Up to this point, the documentation for the HJPT planning table only deals with the planning scenario for discrete manufacturing in PP and the planning of orders in the process industry PP-PI.

This unit introduces further planning scenarios that are also possible with the HJPT planning table.

- LMPC and Maintenance Orders [page 561]
- LMPC and Co-Production [page 562]
- LMPC and EPEI - Every Part Every Interval [page 570]
- LMPC and Repetitive Manufacturing (PP-REM) [page 565]
- LMPC and Project System (PS) [page 566]
- LMPC and Collective Orders [page 567]

6.1 LMPC and Maintenance Orders

Maintenance orders can be created, changed, and displayed using transactions IW31, IW32, and IW33.

For operations of maintenance orders to be displayed in the HJPT planning table, you must have capacity requirements.

To do this, a work center must be entered in the header of the maintenance order, the dates must be specified, and a work effort and a duration must be maintained for the first operation.

In the master data of the work center, the field for other formula must be filled with a formula, so that the capacity requirements can be scheduled.

Maintenance orders are distinguished by the fact that although they have capacity requirements, they do not have an assigned material.

There are two types of capacity requirements for maintenance orders:

- Changeable capacity requirements
- Fixed capacity requirements

Changeable capacity requirements of maintenance orders behave like capacity requirements of planned orders and production orders. They can be dispatched, deallocated, and rescheduled. Changeable capacity requirements of maintenance orders have order category 1. The order category can be read in the Fed TYPKZ_KB of the fields for the capacity requirement. Order category 1 is also used for production orders. In the delivered example profiles of LMPC, operations of these maintenance orders are displayed in red brown in the graphic.

Fixed capacity requirements of maintenance orders cannot be changed. They are fixed in their positions and cannot be rescheduled. Capacity requirements that cannot be changed have the order category A in the

field TYPKZ_KB. This is the order category for a maintenance task. In the delivered example profiles of LMPC, operations of these maintenance orders are displayed in black in the graphic.

Fixed capacity requirements are created in IW31 or IW32 by creating a maintenance task instead of a maintenance order. To do this, the system condition is set to the value 0 = not in operation in the header of the order and the work center is set as the location for the maintenance order. This results in a capacity requirement of type A that cannot be changed.

However, if a formula for internal processing is maintained at the work center, there is also a capacity requirement of order category 1 that can be dispatched, deallocated, and rescheduled at any time. The fixed capacity requirement cannot be changed directly. However, if the corresponding changeable capacity requirement is rescheduled, the fixed capacity requirement adjusts. The fixed capacity requirement can therefore be rescheduled indirectly.

To prevent this, the formula in the field other formula must be removed from the capacity of the work center. Then only the fixed capacity requirement will exists.

Due to these restrictions, it is not recommended to use maintenance tasks.

If operations of a maintenance order are to start or end at a fixed time, the start time or end time can be defined in the detail of the operation for changeable capacity requirements. On the Dates tab in the operation detail, a constraint can be set for the start or finish of the operation. If fixed dates are stored there, an operation cannot be dispatched to any date other than the specified date.

Action Codes for processing maintenance order operations:

- New maintenance orders can be created with the action code S_IW31. S_IW31 Creating Maintenance Orders [page 368]
- You can use the action code S_SARBPL to change work centers for operations of maintenance orders. S_SARBPL and S_HARBPL Change the Work Center for Operations of Production and Process Orders [page 172]
- Any of the HJPT planning functions. Planning Functions [page 180]

6.2 LMPC and Co-Production

In co-production, other products are created in the production process in addition to the main product. Depending on how the data is modeled, these are called co-products or by-products.

Co-products and by-products are displayed in the fields for the BOM data in the HJPT planning table. Since these products are received in the production process and are not consumed, they have a negative requirement quantity.

You can make additional data available for co-production by making settings in the following data providers:

- Data Provider /LMPC/CL_DP_BED LMPC Requirement Date and Order Relations [page 441]
- Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data [page 451]
- Data Provider /LMPC/CL_DP_MARC Plant Data for Material [page 480]
- Data Provider /LMPC/CL_DP_USER_001 Ranges of Coverage and Exception Messages [page 500]
- Data Provider /LMPC/CL_DP_USER_104 Calculate Buffer Days [page 516]

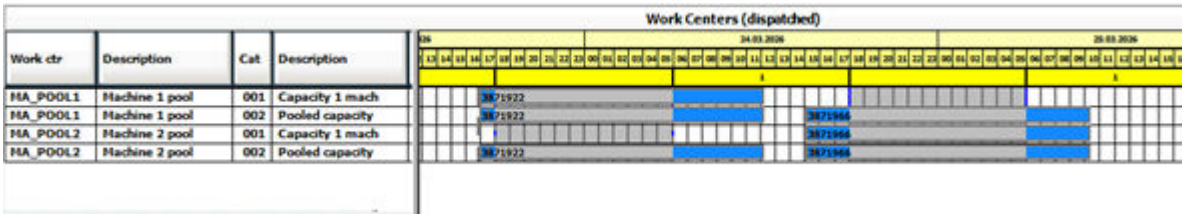
6.3 LMPC and Pooled Capacity

A pooled capacity is a capacity that is shared between two or more work centers.

A pooled capacity is maintained using transactions CR11, CR12, and CR13.

It can be entered in different work centers (transactions CR01, CR02, CR03).

A capacity offer can only be used by one operation at a time. If the capacity of a pooled capacity is occupied by an operation at a work center, it is also displayed as occupied for all other work centers that use the same pooled capacity.



Example Dispatching to Pooled Capacity

In the example on the screen shot, you see two work centers MA_POOL1 and MA_POOL2. Each work center has its own machine capacity. The second capacity at the work center for personnel is a pooled capacity that is shared with the other work center.

For each capacity per work center, there is one row in the graphic: one row for the machine capacity and one row for the pooled capacity.

If the pooled capacity is used at one work center due to an operation, the pooled capacity at the other work center is also used at the same time.

In this example, the orders cannot be dispatched overlapping because the pooled capacity has only one individual capacity and each order requires the pooled capacity.

Pooled capacities can be used to map special constellations in companies.

Examples:

- A specialized employee can operate different machines. However, the employee can only operate one machine at a time.
- A tool or production resource/tool exists only once, but can be used together with different machines.

If pooled capacities are used in the HJPT planning table, note some special features:

- For each pooled capacity, one row is displayed for each work center in the graphic. This is necessary to display the occupancy on the work centers. There is not only a single line per pooled capacity, but one line per pooled capacity per work center.
- The ALV Grid displays the list of capacity requirements. For each operation that is on a pooled capacity, there is only one row per capacity in the ALV Grid, not per work center. If an operation is on a pooled capacity, only one line is displayed for the operation, not one row for each work center in which the pooled capacity is used.
- If only one work center is opened, the ALV Grid still displays the data records for the other work centers that execute an occupancy on the pooled capacity of the open work center. This is necessary to display the occupancy of the work center to avoid double occupancy. All capacity requirements for a capacity are

always loaded into the application. Therefore, when working with pooled capacities, all work centers in which a pooled capacity is used should always be open.

- If only one work center is open, operations in the pooled capacity that originate from an operation of another work center should not be rescheduled in the graphic using drag and drop. If this is still carried out, the operation of the other work center is rescheduled to this work center. A change of work center then takes place.

The following HJPT planning functions are suitable for the use of pooled capacities:

- S_APALL Deallocate All Operations [page 181]
- S_APGRP Deallocate with Group ID [page 313]
- S_APSC Deallocate via Status Change Without Scheduling [page 182]
- S_APSEL Deallocate Selected Operations [page 185]
- S_APSELP Deallocate with Pool ID [page 295]
- S_AV06 Dispatching Operations Individually [page 187]
- S_AV07 Deallocating Operations Individually [page 188]
- S_D&D Dispatching Operations with Drag and Drop in the ALV Grid [page 189]
- S_EPALL Dispatch All Operations [page 192]
- S_EPALV Dispatching by Entering Dates in the ALV Grid [page 194]
- S_EPCAV Dispatch to Component Availability [page 196]
- S_EPGRP Planning with Group ID [page 311]
- S_EPMSQ Dispatching According to Material Master Field [page 198]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_EPTBSQ Dispatch by Table [page 222]
- S_MANP Manual Dispatching [page 233]
- S_RESCD Reschedule All [page 252]
- S_PLVERS HJPT Read/Save Plan Version [page 253]
- S_SHFTPP Shift Production Plan [page 258]
- S_UNDO Undo Planning Step [page 261]

⚠ Restriction

All other planning functions cannot be used with pooled capacities.

If you have any questions about the use of pooled capacities, please contact consulting.

6.4 LMPC and Repetitive Manufacturing (PP-REM)

Use of the HJPT planning table in repetitive manufacturing

The HJPT planning table can be used extensively for the planning scenario of repetitive manufacturing.

Since the HJPT planning table processes capacity requirements of operations as a data basis, the planned orders in repetitive manufacturing (PP-REM) must have undergone lead-time scheduling to be processed.

The LMPC HJPT action codes were developed for the scheduling level of detailed scheduling.

Therefore, only planned orders with detailed scheduling in repetitive manufacturing are supported. Planned orders with rate-based scheduling are not supported.

With a few exceptions, all LMPC HJPT action codes can be used for planned orders in repetitive manufacturing.

The following list of action codes cannot be used in repetitive manufacturing. These are functions for the process industry and functions for production orders.

- S_ORDCL Closing Individual Production Orders or Process Orders Technically [page 164]
- S_ORDCLM Completing Production Orders Technically in Mass Processing [page 165]
- S_ORDREP LMPC Order Report [page 166]
- S_PCONV Partial Conversion of Planned Orders with Subsequent Dispatching [page 167]
- S_PHCH Change of Duration of a Phase in Process Order [page 169]
- S_SARBPL and S_HARBPL Change the Work Center for Operations of Production and Process Orders [page 172]
- S_SPLIT Distribute Capacity Requirements to Individual Capacities Manually [page 178]
- S_ATPA Individual Availability Check [page 350]
- S_ATPPIO ATP Check and Order Conversion [page 351]
- S_CONVPI Mass Conversion of Planned Orders to Process Orders [page 353]
- S_CONVPP and S_CONVPL Mass Conversion of Planned Orders to Production Orders [page 354]
- S_COOIS Information System for Production Orders [page 355]
- S_COOISP Information System for Process Orders [page 356]
- S_MFREI Mass Release of Orders [page 356]
- S_V_FREI Release of Operation in Production Order [page 357]
- S_C203 Display Master Recipe [page 359]
- S_CO11N Entering Time Tickets [page 361]
- S_CO15 Enter Production Order Confirmation [page 362]
- S_CO24 Missing Parts Info System [page 363]
- S_CO40 Conversion of Planned Order to Production Order [page 364]
- S_COR5 Releasing Individual Process Orders [page 365]
- S_COR7 Creating Process Orders [page 366]
- S_CONATP Log for ATP Check [page 384]
- S_CONPFR Log Mass Release [page 384]
- S_CONPRO Log for Mass Conversion [page 384]

6.5 LMPC and Project System (PS)

Using the LMPC HJPT planning table with networks from the project system

The HJPT planning table can be used to plan networks in the project system.

The capacity load chart displays the capacity commitment of networks, provided that the relevant Customizing settings have been made.

You can use the data provider /LMPC/CL_DP_PS_AFAB to read additional data for the project system. Data Provider /LMPC/CL_DP_PS_AFAB Relationships [page 489]

> → Tip
>
> If the scheduling formulas at the work center are set correctly, it is also possible to create networks (PS) and planned or production orders (PP) in the same work center.
>
> If you have any questions about the settings for scheduling, please contact your LMPC consultant.

The standard action code for changing networks is S_AV77. S_AV77 Change Network [page 122]

The standard action code for dispatching network operations is S_EPNP. S_EPNP Dispatching Operations of Networks [page 202]

Furthermore, the following action codes can be used for planning networks:

- S_AK02 Change Order [page 116]
- S_AK05 Displaying an Order [page 119]
- S_AV02 Changing Operations of the Production Order or Process Order [page 120]
- S_SARBPL and S_HARBPL Change the Work Center for Operations of Production and Process Orders [page 172]
- S_APALL Deallocate All Operations [page 181]
- S_APSEL Deallocate Selected Operations [page 185]
- S_AV06 Dispatching Operations Individually [page 187]
- S_AV07 Deallocating Operations Individually [page 188]
- S_D&D Dispatching Operations with Drag and Drop in the ALV Grid [page 189]
- S_EPALL Dispatch All Operations [page 192]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_MANP Manual Dispatching [page 233]
- S_MVEORD Move Order Operations in the Pool [page 237]
- S_RESCD Reschedule All [page 252]
- S_POOLID Create Order Pool Manually [page 290]
- S_POOLA Automatically Create Order Pool [page 291]

- S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- S_APSELP Deallocate with Pool ID [page 295]
- S_SETSTR Change Strategy Profile Settings [page 257]
- S_SHFTPP Shift Production Plan [page 258]
- S_MALL, S_RMALL Select All Operations in ALV Grid and Remove Selection [page 338]
- S_MAGR, S_MAGRD Selecting Orders in the Graphic, Removing the Selection [page 339]
- S_MALV Selecting Operations in ALV Grid [page 340]
- S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]
- S_FILTR, S_FILTRE Set and Remove Filters [page 388]
- S_DBCLCK Double-Click and Hotspot Click on Fields in the ALV Grid [page 390]
- S_DINFO Detailed Information for Graphical Bars [page 393]
- S_L--, S_L-, S_L+, S_L++, Moving Rows within the ALV Grid [page 400]

⚠ Restriction

- The list of order relations does not display any data for networks themselves, but requirements relevant to MRP from order reservations of networks are listed with quantity and date. Negative BOM requirements, that is, receipts from networks, are not displayed in the order relations.
- Since networks are not based on materials, unlike in discrete manufacturing with planned and production orders, no development of the stocking situation can be displayed for networks.
- No requirement dates are determined for operations in networks.
- Only the functions described in this chapter can be used for network activities. All other functions are not released for use with networks.
- The HJPT planning table has a very large number of fields for data. If certain data is not displayed for the network activities, this is not an error, but is due to the fact that this data is not read. LMPC HJPT Data Provider [page 432]

6.6 LMPC and Collective Orders

Use of direct production in the HJPT planning table

Using the special procurement key 52 “Direct procurement/in-house production”, it is possible to create a collective order using the BOM. The orders are linked to each other across the low-level codes.

This leads to special behavior of the orders during scheduling and dispatching.

Orders in collective orders are always scheduled together. In a collective order, there is a leading order that determines the dates and quantities in the entire network. As soon as the operation date of the leading order of a collective order is changed, the dates of the linked orders change automatically.

If the quantity of the leading order is changed in a collective order, the quantities of the following orders also change.

Collective orders consist either only of planned orders or only of production or process orders. If you trigger the conversion for a planned order in the collective order, all planned orders of the entire network are converted into production or process orders.

> ⚠ Caution
>
> It is recommended to process only production or process orders of collective orders in the HJPT planning table. This is because the processing of planned orders of a collective order with the HJPT planning table is only possible to a very limited extent.
>
> Planned orders can be displayed and also be converted to production or process orders in the HJPT planning table.
>
> However, it is not possible to dispatch or change planned orders of a collective order.
>
> The standard SAP system does not allow this for the capacity planning table. See SAP Note 131468

Special Features of Planning

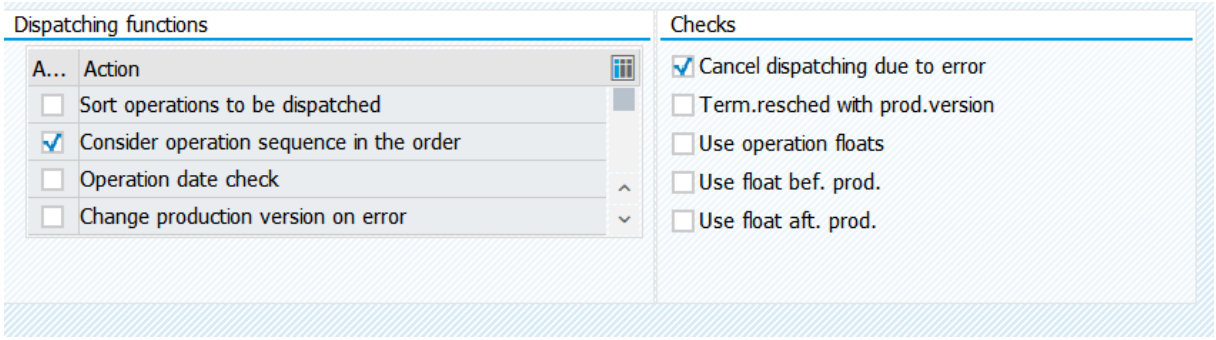
- If only one operation of a collective order is dispatched and the other operations of the same network are not dispatched and these operations have the status Deallocated, this causes the operation times of all operations to change. Scheduling is always executed for all operations of a network if they have not been dispatched.
- If an operation of a collective order is not open in the HJPT planning table and is not dispatched, it is still scheduled if the related operations that are open in the HJPT planning table change.
- If an operation of a collective order is not open in the HJPT planning table and is dispatched, this dispatched operation can block the dispatching of the other operations open in the planning table.
- Dispatched operations that are not assigned to the planning function remain unchanged in their positions. If an operation of a collective order is dispatched or rescheduled and other operations of the same network have already been dispatched, the sequence may be mixed up because operations that have already been dispatched are not rescheduled.
- If operations of a network have already been dispatched, at least all operations of a network that have already been dispatched must be selected during rescheduling so that the sequence and the correct interval between the operations are adhered to.
- Scheduling does not consider the availability of the capacities if the operations are not processed in a planning function. Scheduling is executed for all orders in the collective order. The availability of the capacity is only checked when dispatching. This can lead to the following behavior: If a later operation of a collective order is dispatched as early as possible and the preceding operations of the same network are not processed in the planning function, the early operations may be scheduled in the past.
- When you deallocate an operation, the entire collective order is rescheduled. The system tries to schedule the orders within the outline dates. If the start date of an order in the collective order falls in the past, the system switches to today's scheduling. The first order of the collective order is scheduled at the current time, all subsequent orders in the collective order are adjusted to this date and scheduled in the future.
- If an order in a collective order has already been finally confirmed, the entire network cannot be rescheduled. When you try to change the dispatching dates of one or more orders of this network, the standard scheduling will deallocate all operations from all orders.

For the complete description of scheduling orders in collective orders, see the standard SAP documentation. Scheduling collective orders

Settings in the Strategy Profile

So that the planning function considers the sequence of the operations in the collective order and only allows dispatching in the correct sequence, two checkboxes must be set in the strategy profile for dispatching:

- Consider operation sequence in the order
- Cancel dispatching due to error



Example: Settings in the Strategy Profile

> → Remember
>
> For dispatching and rescheduling production or process orders of a collective order, only certain functions of the LMPC HJPT planning table can be used. Dispatching is only possible if the orders are dispatched in the correct sequence that is specified by the network.

Only the following planning functions can be used to process orders in collective orders. All other planning functions of the HJPT planning table are not suitable for collective orders.

Dispatching of individual operations:

- S_AV06 Dispatching Operations Individually [page 187]
- S_MANP Manual Dispatching [page 233]

Dispatching several or all operations of a collective order at the same time as the scheduled start date or as early as possible:

- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217] (sorting by order number and operation number)

Dispatching of several unplanned operations with a manually specified start date:

- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- First S_MANP Manual Dispatching [page 233] for the first operation of a network, then S_EPSIM Simultaneous Dispatching [page 217] or S_EPSRT Sorted Dispatching [page 217] (sorting by order number and operation number) for all other operations.

Rescheduling operations in a collective order that have already been dispatched to another date:

- S_SHFTPP Shift Production Plan [page 258]
- S_RESCD Reschedule All [page 252]

When rescheduling, all operations in a collective order must be selected.

> ⚠ Restriction
>
> - Collective orders are displayed in a separate section in transaction MD04. This section is not processed by the HJPT planning table when determining the requirement dates. Therefore, no data can be

displayed for the requirement date. This also means that the list of order relations for collective orders cannot be used.

- The LMPC mass processing (/LMPC/MP) is not suitable for processing orders of a collective order.
- None of the LMPC functions and data fields were developed for use with collective orders. If a function with collective orders does not work or certain data is not displayed, this is not an error, but is due to the fact that the HJPT planning table was not developed for the use of collective orders.
- We do not recommend that you process orders of collective orders in the HJPT planning table. Collective orders are a construct that is intended to schedule and process orders outside of a planning table. The detailed scheduling of order operations from collective orders works in certain cases, but collective orders were not intended for processing in the detailed scheduling planning board. Therefore, scheduling problems may occur for orders in collective orders. For example, dates in the past, scheduling dates that cannot be changed, and others.
- If you process orders of collective orders in the HJPT planning table, this is done at your own risk. SCM consulting support may not be able to provide you with a solution for problems with these orders. Problems with this type of order are not subject to SCM consulting support.

For all questions regarding the use of all LMPC functions with collective orders that are not listed here, contact your LMPC consultant.

→ Tip

The advantage of direct production with collective orders is that there is a direct link between the orders across the low-level codes. This ensures consistent production across all low-level codes. However, the use of direct production is subject to a number of restrictions. For example, it is not possible to replace a production order with another order for the same material in the collective order.

The use of collective orders in connection with the LMPC HJPT planning table is possible, but is not recommended due to the restrictions.

You can use the LMPC order relations instead. You can also use this LMPC planning scenario to ensure consistent, multilevel planning across all low-level codes.

Multilevel Planning via Order Relations [page 313]

If you only need a two-level connection, it is recommend that you use two-level planning with a pool ID.

Two-Step Planning with Pool ID [page 296]

As an alternative to collective orders, it is also recommended that you use the multilevel order report in transaction MD4C.

S_MD4C Order Report [page 374]

6.7 LMPC and EPEI - Every Part Every Interval

Using EPEI together with the HJPT planning table

The HJPT planning table supports a scenario in which a time-phased production plan is created. The aim is to produce orders for the same product in the same lot size at regular intervals. This reduces quantity on hand and smooths production.

The consulting solution EPEI is required for this scenario.

This consulting solution determines the optimum lot size for the materials to be planned and enters it in the material master.

The MRP run uses this lot size to create planned orders that can be dispatched in the next step using the planning functions of the HJPT planning table.

The following HJPT planning functions are available for dispatching in the EPEI scenario:

- S_EPTBSQ Dispatch by Table [page 222]
- S_FPL Dispatch by LMPC Timetable [page 223]

For information on EPEI analysis, see the documentation on the consulting solution EPEI. EPEI - Every Part Every Interval

6.8 LMPC and Long-Term Planning (PP-MP-LTP)

LMPC provides functions to support long-term planning (PP-MP-LTP) and enables both long-term production planning and simulations in the short-term and medium-term planning horizon. A major advantage is that no new operative data is required for long-term planning – instead, the existing basic data such as the material master, BOMs, routings, and work centers is used directly.

The planning and evaluation of long-term planning are carried out independently of operational planning. In this process, the materials to be planned must first be taken into account in operational requirements planning. After the completion of long-term planning, the planned orders of a scenario can be fixed and transferred to operational requirements planning.

A great advantage is the option of creating your own versions of the demand program specifically for simulative planning. This makes it possible to calculate and compare different scenarios with regard to their effects on demand and capacity planning.

Recommended application scenarios

To avoid inconsistencies, long-term planning and operative planning should not be carried out for identical planning periods at the same time. Instead, the following scenarios are recommended:

- In short-term optimization, the current operative planning status is transferred to long-term planning and optimized there without parallel planning activities in the operative.
- In medium-term planning, the current period in operative planning and the coming planning period are processed in long-term planning – the long-term planning results are transferred to operative planning at the start of each period.
- Long-term planning takes place outside the horizon of operational planning. At the start of the next operative planning period, the results of long-term planning are transferred to operative planning.

Similar to operative planning, planned orders can be created and changed manually in long-term planning. These are called simulative planned orders and are always related to a specific planning scenario. You can use the selection screen of the HJPT planning table to process specific operational data, simulative data of a scenario, or both data types together. A test profile LMPC_T09 [page 48] is delivered for this type of planning. For more information about the profile, see the relevant section in the documentation.

Steps for executing long-term planning or short-term to medium-term simulative planning using LMPC

- Create version numbers for planning versions in Customizing: transaction OMP2
- Copy PIRs to Planning Versions: Transaction MS64
- Create and release scenario for long-term planning: transaction MS31
- Executing long-term planning:
  - Single-item, multi-level planning: transaction MS02.
  - Single-item, single-level planning: transaction MS03.
  - Single-item sales order planning: transaction MS50.
  - Single-item planning project: transaction MS51.
  - Planning table: transaction MF50.
- Capacity planning with the HJPT planning table for selected planning scenarios. Transaction /LMPC/HJPT with HJPT profile LMPC_T09
- Check the stock/requirements list for long-term planning: transaction MS04.
- Firming simulative planned orders in long-term planning:
  - Via planning actions.
  - Via manual changes.
  - Over the planning time fence.
  - Using a manual firming date.
- Transfer of simulative planned orders from long-term planning to operative MRP: transaction MD43.

> ⓘ Note
>
> - This description gives only a rough overview of the steps in long-term planning. For details on long-term planning, read the documentation on long-term planning or contact consulting.
> - To be able to plan simulative planned orders using the HJPT planning table, they must have capacity requirements. You must ensure that you create the simulative planned orders in long-term planning with capacity requirements.

> → Remember
>
> When the planned orders are copied from long-term planning to operative planning, only header data of the planned orders is copied. Only the basic dates of the planned orders are copied. The capacity requirements are created again during the transfer. The orders are scheduled in detail again. As a result, the scheduled times of the capacity requirements in operative planning can differ from the times in long-term planning. The status “dispatched” is not transferred. Simulative planned orders that were dispatched in long-term planning are deallocated after copying to operative planning. Since the dates of the capacity requirements are lost during copying, detailed planning cannot be carried out with long-term planning, but only rough-cut planning.

Available LMPC Functionality for Long-Term Planning

The following charts can be used:

- Capacity Load (Categories) [page 81]
- Capacity Requirements (Categories) [page 83]
- Capacity Offer/Overall Capacity Load [page 83]

The following data providers can be used for long-term planning:

- Data Provider /LMPC/CL_DP_AFVG Order Operation Data Planned Order [page 433]

- Data Provider /LMPC/CL_DP_ALERT Alert Processing [page 435]
- Data Provider /LMPC/CL_DP_AUTEXT Order Texts [page 439]
- Data Provider /LMPC/CL_DP_BOM Component Data or BOM Data [page 451]
- Data Provider /LMPC/CL_DP_CALC Calculations [page 459]
- Data Provider /LMPC/CL_DP_COLOR ALV Grid Classic Color Customizing [page 460]
- Data Provider /LMPC/CL_DP_COLOR_FORMULA ALV Grid Color Customizing with Formulas [page 462]
- Data Provider /LMPC/CL_DP_COMB_USRFLD - Merge Data [page 465]
- Data Provider /LMPC/CL_DP_COUNT Count, Calendar Weeks, and Weekdays [page 467]
- Data Provider /LMPC/CL_DP_CYPP0005 User Exit: CYPP0005 [page 471]
- Data Provider /LMPC/CL_DP_DB_FLDS Read Database Fields [page 472]
- Data Provider /LMPC/CL_DP_ENQUEUE Order Locks (Icon) [page 474]
- Data Provider /LMPC/CL_DP_GAP Calculate Dispatching Gaps and Predecessor-Successor Relationships [page 476]
- Data Provider /LMPC/CL_DP_MAT_ADD Material Additional Data [page 480]
- Data Provider /LMPC/CL_DP_MEASURES Tasks, Resubmissions, Comments [page 483]
- Data Provider /LMPC/CL_DP_OP_ADD Additional Data for Operations [page 486]
- Data Provider /LMPC/CL_DP_PRODVER Data for Production Version [page 488]
- Data Provider /LMPC/CL_DP_RTRC Routing and Recipe [page 490]
- Data Provider /LMPC/CL_DP_STD Basic Data of the Capacity Planning Table [page 497]
- Data Provider /LMPC/CL_DP_USER_002 Technical Data [page 506]
- Data Provider /LMPC/CL_DP_USER_102 Characteristics and Characteristic Values [page 511]

The following action codes can be used for long-term planning:

- S_AK02 Change Order [page 116]
- S_AK05 Displaying an Order [page 119]
- S_APALL Deallocate All Operations [page 181]
- S_APGRP Deallocate with Group ID [page 313]
- S_APSC Deallocate via Status Change Without Scheduling [page 182]
- S_APSCG Deallocate Selected Operations and Close Gaps [page 183]
- S_APSEL Deallocate Selected Operations [page 185]
- S_AV06 Dispatching Operations Individually [page 187]
- S_AV07 Deallocating Operations Individually [page 188]
- S_AVRR Change Setup Time Manually [page 108]
- S_AVRU Adjust Setup Time Automatically [page 111]
- S_BMATXT Change Material Basic Data Text [page 382]
- S_CASORT Sort Upwards [page 338]
- S_CHSDV Change Standard Values [page 128]
- S_CORTXT LMPC HJPT Order Text [page 134]
- S_COUNT Counting ALV Grid Data Records [page 384]
- S_CPV2 Change Production Version and Dispatch [page 135]
- S_CR03 and S_CRC3 Display Work Center or Resource [page 367]
- S_CS03 Display BOM [page 367]
- S_D&D Dispatching Operations with Drag and Drop in the ALV Grid [page 189]

- S_DELPLA Deleting Planned Orders [page 161]
- S_DINFO Detailed Information for Graphical Bars [page 393]
- S_EPALL Dispatch All Operations [page 192]
- S_EPALV Dispatching by Entering Dates in the ALV Grid [page 194]
- S_EPBKFG Two-Step Dispatching with Pool ID [page 300]
- S_EPGRP Planning with Group ID [page 311]
- S_EPMSQ Dispatching According to Material Master Field [page 198]
- S_EPPRLL Parallel Planning with Parallel Sequences [page 287]
- S_EPPRLP Parallel Dispatching with Pool ID [page 280]
- S_EPRSIN Insert Setup Optimum Operation [page 266]
- S_EPRST Dispatching Using Setup Matrix [page 264]
- S_EPSEL Dispatch Selected Operations [page 209]
- S_EPSELF Dispatch Selected Orders Without Errors [page 210]
- S_EPSELL Dispatching with Check on Gaps and Pool Orders [page 210]
- S_EPSELP Single-Level Dispatching with Pool ID [page 293]
- S_EPSELT Dispatching for Date [page 213]
- S_EPSELX Dispatching Insert in Gaps with and Without Pool Orders [page 212]
- S_EPSEQ Dispatch According to the Sequence Entered [page 215]
- S_EPSIM Simultaneous Dispatching [page 217]
- S_EPSRT Sorted Dispatching [page 217]
- S_EPTBSQ Dispatch by Table [page 222]
- S_FILTR, S_FILTRE Set and Remove Filters [page 388]
- S_FPL Dispatch by LMPC Timetable [page 223]
- S_GRPID Set and Delete Group ID [page 309]
- S_L--, S_L-, S_L+, S_L++, Moving Rows within the ALV Grid [page 400]
- S_LFLDV Move Line to Field Value [page 401]
- S_LOCK Temporarily Lock Orders [page 402]
- S_MAGR, S_MAGRD Selecting Orders in the Graphic, Removing the Selection [page 339]
- S_MALL, S_RMALL Select All Operations in ALV Grid and Remove Selection [page 338]
- S_MALV Selecting Operations in ALV Grid [page 340]
- S_MANP Manual Dispatching [page 233]
- S_MANPL Manual Dispatching List with Gap Check [page 235]
- S_MANPLX Manual Dispatching with Insert [page 237]
- S_MARKER Set and Remove Marking [page 341]
- S_MCFMEA S_MCFCOM S_MCFRES, Tasks, Comments, Resubmissions [page 405]
- S_MM03 Displaying Material Master Data [page 376]
- S_MS04 Long-Term Planning: Stock/Requirements List [page 378]
- S_MVEORD Move Order Operations in the Pool [page 237]
- S_OPL Optimized Dispatching [page 268]
- S_OSC Optimum Adjustment of Setup Times [page 115]
- S_PBLKFG Pool formation with BOM information [page 296]
- S_PBPRLL Form Order Pool for Parallel Dispatching with Pool ID [page 278]

- S_PLAFLT Change Long Text for Planned Order [page 408]
- S_PLOSS Enter Production Scrap in Order [page 171]
- S_PLVERS HJPT Read/Save Plan Version [page 253]
- S_POOLA Automatically Create Order Pool [page 291]
- S_POOLID Create Order Pool Manually [page 290]
- S_RESCD Reschedule All [page 252]
- S_SARBFV Change of Work Center for Operations by Changing the Production Version [page 175]
- S_SELCAP Selecting Detailed Capacity List in the Chart [page 343]
- S_SETSEL Select and Sort Operations Automatically [page 345]
- S_SETSTR Change Strategy Profile Settings [page 257]
- S_SHFTPP Shift Production Plan [page 258]
- S_SVOPDT Save Operation Dates [page 417]
- S_UNDO Undo Planning Step [page 261]
- S_XBR Create Report Folder [page 420]

⚠ Restriction

- Functions that are not listed in this chapter are not available for the use of long-term planning data.
- All functions that are based on data of transaction MD04 are not available. This affects, for example, the calculation of the requirement date, alerts for the requirement date, individual planning functions and the stock calculation.
- Batch information is not displayed because there is no batch management for simulative planned orders.

Related Information

LMPC_T09 [page 48]

7 LMPC Troubleshooting

If you want to report errors for the LMPC consulting solution, you can do so via the SAP ticket system.

1. First, check that you have installed the latest transport of your LMPC cycle in the system. New levels for the respective LMPC cycle are published at regular intervals. The last level contains all previous error corrections. Perhaps an error that you want to report has already been corrected. It is then sufficient to download and import the **latest transport of LMPC from the delivery platform**. For instructions on how to check your LMPC cycle, see the following section: LMPC Cycles [page 14]. First compare the level in your system with the level that is available for download in the delivery platform.
2. Create an OSS incident under the component **XX-PROJ-CON-LMPC**. For the **priority of tickets**, refer to **SAP Note** 67739.
3. Make sure that the **system connection** is open and that **credentials** for logging on to the system are provided in the **secure area** of the incident. Check that it is possible to log on to the **client** of your choice. Also check that the provided user name has **authorization for the LMPC transactions and debugging** in the system.
4. Call transaction **/n/SAPLOM/X_TRD**. Copy the result to the clipboard using the button in the menu bar and paste it into the ticket description.
5. Describe the issue: What is the system behavior and what would you have expected?
6. Provide a **step-by-step description** with an example of how to reproduce the error. An example includes:
   - **System name**
   - **Client**
   - **LMPC HJPT overall profile**
   - **Plant**
   - **Work center**
   - **Sample order number**
   - **Name of function used**
   - **Description of the individual steps that you have performed one by one**

   Describe the example in a document and attach it to the incident.

Create **a ticket for each topic**. Please do not mix topics in the tickets. See SAP Note 50048.

> → Remember
>
> - LMPC consulting support only checks for errors in the source code. LMPC consulting support does not provide support for the correct configuration. Therefore, LMPC consulting support does not check any settings in your system. If you have questions about the settings of functions in the system, or require help with testing, contact LMPC Consulting.
> - If you experience problems with the CORE transports, open an incident under the component XX-PROJ-CON-MCF.

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