

SAP Advanced Planning and Optimization 7.0 Including Enhancement Package 4

**Using SAP enhancement package 4 for SAP SCM 7.0 or SAP enhancement
package 8 for SAP ERP 6.0**



© Copyright 2016 SAP SE or an SAP affiliate company. Alle Rechte vorbehalten. All rights reserved. Tous droits réservés. Все права защищены.

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP SE oder ein SAP-Konzernunternehmen nicht gestattet.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies. Please see www.sap.com/corporate-en/legal/copyright/index.epx#trademark for additional trademark information and notices.

Terms for Included Open Source Software

This SAP software contains also the third party open source software products listed below. Please note that for these third party products the following special terms and conditions shall apply.

Documentation on the SAP Service Marketplace

You can find this document at the following address: service.sap.com/instguides ↗

Typographic Conventions

Table 1

Example	Description
< >	Angle brackets indicate that you replace these words or characters with appropriate entries to make entries in the system, for example, "Enter your <User Name>".
▶ ▶ ▶	Arrows separating the parts of a navigation path, for example, menu options
Example	Emphasized words or expressions
Example	Words or characters that you enter in the system exactly as they appear in the documentation
Example 	Textual cross-references to an internet address, for example, www.sap.com 
/example	Quicklinks added to the internet address of a homepage to enable quick access to specific content on the Web
123456 	Hyperlink to an SAP Note, for example, SAP Note 123456 
<i>Example</i>	<ul style="list-style-type: none"> Words or characters quoted from the screen. These include field labels, screen titles, pushbutton labels, menu names, and menu options. Cross-references to other documentation or published works
Example	<ul style="list-style-type: none"> Output on the screen following a user action, for example, messages Source code or syntax quoted directly from a program File and directory names and their paths, names of variables and parameters, and names of installation, upgrade, and database tools
EXAMPLE	Technical names of system objects. These include report names, program names, transaction codes, database table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE
EXAMPLE	Keys on the keyboard

Document History

 **Caution**

Before you start the implementation, make sure you have the latest version of this document. You can find the latest version on SAP Service Marketplace service.sap.com/instguides .

The following table provides an overview on the most important document changes:

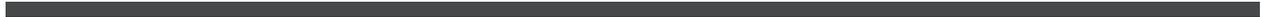
Table 2

Version	Date	Description
1.0	2016-01-27	Initial version

Content

1	Getting Started	9
1.1	About this Document	9
1.2	Related Information	11
1.3	Important SAP Notes	12
2	SAP Advanced Planning and Optimization Overview	14
2.1	Software Units of SAP APO as an Add-On to SAP ERP	17
	SAP Advanced Planning and Optimization (SAP APO)	17
	SAP Enterprise Resource Planning (SAP ERP)	18
2.2	Software Units of SAP APO as part of SAP SCM	19
	SAP Supply Chain Management Server (SAP SCM Server)	19
	SAP NetWeaver Product Instance PI	19
	SAP Enterprise Resource Planning (SAP ERP)	20
	SAP Customer Relationship Management (SAP CRM)	20
	SAP Supply Network Collaboration (SAP SNC)	20
2.3	Enhancement Package Key Concept	21
2.4	Key Facts About Enhancement Packages	23
2.5	Software Component Matrix	24
2.6	System Landscape	31
2.7	Overall Implementation Sequence	33
2.8	Integration of SAP BusinessObjects	36
3	Business Processes of SAP APO	38
3.1	Demand and Supply Planning	38
	Customer Forecast Management	39
	Demand Planning & Forecasting	40
	Vendor-Managed Inventory	43
	Safety Stock Planning	44
	Distribution Planning	45
	Supply Network Planning	45
3.2	Transportation	51
	Transportation Planning	51
3.3	Service Parts Planning	52
	Parts Forecasting	52
	Stocking List Determination	53
	Safety Stock Calculation	53
	Distribution Requirements Planning	54
	Pull Deployment	54
	Inventory Balancing	55
	Parts Monitoring	56
	OEM-Managed Inventory	56
3.4	Available to Promise	57
	Availability Check	57
	Backorder Processing	58

3.5	Production Planning and Detailed Scheduling (PP/DS)	59
	Production Scheduling with Capacity Reservation	60
	MRP-Based Detailed Scheduling	61
	Production Scheduling with Tank Planning	61
	Production Scheduling with Resource Networks	64
3.6	Order Fulfillment	66
	Sourcing	66
	Supersession	67
3.7	Manufacturing (Planning & Operations)	68
	Production Planning (Process Manufacturing)	68
	Production Planning (Discrete Manufacturing)	71
	Production Planning (Repetitive Manufacturing)	75
	Production Scheduling	79
	Manufacturing Execution	84
	Cross-Location Planning with PP/DS	88
	Replenishment Planning in PP/DS	89
3.8	Procurement	90
	Purchase Order Processing for Service Parts	91
	Release Processing for Service Parts	91
4	Solution-Wide Topics	93
4.1	SAP Solution Manager	93
4.2	Extended Implementation Content in SAP Solution Manager	93
4.3	Service-Oriented Architecture (SOA)	94
	Service Enablement	94
	Installation of the Service-Oriented Architecture (SOA)	95
	Related Documentation	96
A	Appendix	97
A.1	List of SAP Notes	97
A.2	Tools and Resources for Planning Your System Landscape	98
	Business Process Repository (BPR) Viewer	99
	Using the BPR Viewer	99
A.3	Media List	100



1 Getting Started

1.1 About this Document

This Master Guide provides a central starting point for the technical implementation of SAP Advanced Planning and Optimization (SAP APO). It contains all the information for the implementation of SAP APO business processes.

As SAP APO provides two deployment options. This document describes both options as follows in parallel:

- SAP APO as part of SAP Supply Chain Management (SAP SCM)
This deployment option requires you to use *SAP enhancement package 4 for SAP SCM 7.0* (including SAP APO).
SAP enhancement package 4 for SAP SCM 7.0 is based on *SAP enhancement package 5 for SAP NetWeaver 7.0*.
- SAP APO as an add-on to SAP Enterprise Resource Planning (SAP ERP)
This deployment option requires you to use *SAP enhancement package 4 for SAP APO 7.0 on SAP enhancement package 8 for SAP ERP 6.0*.
SAP enhancement package 8 for SAP ERP 6.0 is based on *SAP enhancement package 5 for SAP NetWeaver 7.0*.

i Note

There is no built-in SAP migration between the two deployment options (for example migrating an SAP APO as an add-on with SAP ERP to a new system instance where SAP APO is used as part of SCM). You can only use one single deployment option at a time for a particular business setup. Subsequent changes between these options are not supported by the tools.

Functionally, both SAP APO deployment options are largely identical. They differ in data volume capabilities, configuration flexibility, and technical constraints. For more information, see the section on *SAP Advanced Planning and Optimization Overview*.

You must give consideration when choosing between the two deployment options for SAP APO.

To facilitate the implementation process, this document is organized by business processes and business process groups. You can choose from among several generic business processes and find all the information that is relevant for the technical implementation of a specific business process in that section.

i Note

The central starting point for the technical upgrade of your SAP application is the Upgrade Master Guide, which you can find on SAP Service Marketplace at service.sap.com/instguides.

Information in the Master Guide

Use the Master Guide to get a technical overview of SAP APO and its processes. The Master Guide is a planning tool that helps you to design your system landscape and refers you to more detailed documentation such as the following:

- Installation guides for single software units
- SAP Notes
- Configuration documentation
- SAP Library documentation

For a general overview of the available SAP documentation, see *The Main SAP Documentation Types* in the *Appendix*.

Content

Below is a summary of the core sections of this guide that you can refer to during the implementation of the business processes.

- The *Getting Started* contains valuable information about using this document and related information (documentation and SAP Notes) crucial to the installation and upgrade.
- [SAP Advanced Planning and Optimization Overview \[page 14\]](#)
 - The *Software Component Matrix* provides the information about which business processes use which component and whether the corresponding component is mandatory or optional.
 - *System Landscape* provides an overview of a possible system landscape and also provides installation information.
- [Business Processes of SAP APO \[page 38\]](#) contains the following information for each business process:
 - A short overview of the business process
 - A software component matrix for each business process that shows which components the business process uses and whether the component is mandatory or optional
 - References to further information about the business process
- [Solution-Wide Topics \[page 93\]](#) provides information about SAP Solution Manager.
- Depending on the specific business process, different installation and master guides are required during the business process implementation. In *Appendix*, you can find an overview of all required documentation referenced in this Master Guide.

i Note

You can find the most current information about the technical implementation of SAP APO and the latest installation and configuration guides on SAP Service Marketplace at service.sap.com/instguides.

We strongly recommend that you use the documents available here. The guides are regularly updated.

SAP Fiori Apps

For more information regarding SAP Fiori apps, see SAP Fiori for SAP SCM under SAP SCM 7.0 EHP4 in SAP Library at help.sap.com/scm.

Constraints

- The business processes that we present here serve as examples of how SAP software can be used. They are only intended as models and do not necessarily operate as we describe them in your customer-specific system landscape. Check your requirements and systems to determine whether these processes can be used at your site and be sure to test all processes thoroughly to ensure that they work as desired in your environment.

- This Master Guide primarily discusses the overall technical implementation of SAP APO than its subordinate components. This means that additional software dependencies might exist without being mentioned explicitly in this document. You can find more information on component-specific software dependencies in the corresponding installation guides.

1.2 Related Information

Planning Information and Further Useful Links

The following table contain links to crucial information for implementing SAP APO.

Table 3: Planning Information and Further Useful Links

Content	Location
Latest version of installation and update guides for SAP components	service.sap.com/instguides ↗
General information about SAP APO	service.sap.com/scm ↗
SAP Road Maps – information about applications and business scenarios	service.sap.com/saproadmaps ↗
Sizing, calculation of hardware requirements – such as CPU, disk and memory resource – with the Quick Sizer tool	service.sap.com/sizing ↗
Released platforms and technology-related topics such as maintenance strategies and language support	support.sap.com/platforms ↗
Platform Availability Matrix	support.sap.com/pam ↗
Information about network security – SAP Security Guides	service.sap.com/securityguide ↗
Information about high availability	www.sdn.sap.com/irj/sdn/netweaver ↗
Performance	service.sap.com/performance ↗
Information about Support Package Stacks, latest software versions, and patch level requirements	support.sap.com/sp-stacks ↗
Information about Unicode technology	www.sdn.sap.com/irj/sdn/i18n ↗
Information about SAP Notes	support.sap.com/notes ↗
Information about creating error messages	support.sap.com/message ↗
SAP Software Distribution Center (software download and ordering of software)	service.sap.com/swdc ↗
SAP Online Knowledge Products (OKPs) – role-specific Learning Maps	service.sap.com/rkt ↗
Documentation on SAP Help Portal	help.sap.com ↗

Related Master Guides

This Master Guide is based on Component Master Guides. The documents listed in the following table contain detailed information about the relevant components:

Table 4: List of Related Master Guides

Content	Location
SAP Supply Chain Management (SAP SCM)	service.sap.com/instguides ➤ <i>SAP Business Suite Applications SAP SCMSAP SCM ServerUsing SAP enhancement package 4 for SAP SCM 7.0 ServerUpgrade Guides</i>
SAP Enterprise Resource Planning (SAP ERP)	service.sap.com/instguides ➤ <i>SAP Business Suite ApplicationsSAP ERPSAP ERP 6.0SAP enhancement packages for SAP ERP 6.0SAP enhancement package 8 for SAP ERP 6.0</i>
SAP Supply Network Collaboration (SAP SNC)	service.sap.com/instguides ➤ <i>SAP Business Suite ApplicationsSAP SCMSAP SNCUsing SAP enhancement package 4 for SAP SNC 7.0Upgrade Master Guide for SAP EHP 4 for SAP SNC 7.0</i>
SAP Customer Relationship Management	▶ service.sap.com/instguides ➤ ▶ <i>SAP Business Suite Applications ▶ SAP CRM ▶ SAP CRM 7.0 ▶ Plan</i> ▶

1.3 Important SAP Notes

This section contains important SAP Notes for SAP APO.



Caution

Read the SAP Installation Notes before you start the installation. These notes contain the most recent information about the installation as well as changes to the installation documentation.

Make sure that you have the up-to-date version of each SAP Note, which you can find in the SAP Support Portal at support.sap.com/notes ➤ .

Table 5

SAP Note Number	Title
811923 ➤	<i>Generating the SAP Solution Manager key</i>
836200 ➤	<i>SAP NetWeaver 7.0: Importing Process Integration Content</i>
850038 ➤	<i>Support Package levels for SCM/APO installations/upgrades (only relevant for SAP APO as part of SAP SCM)</i>
915367 ➤	<i>TDL: Automatic activation of the transaction data areas (only relevant for SAP APO as part of SAP SCM)</i>
1115322 ➤	<i>Restrictions for availability check and backorder services</i>

SAP Note Number	Title
1224284 	<i>Enterprise Services, Installing and Accessing the SOA Docu</i>
1371027 	<i>Delivery of TERM and GLOSSARY Texts in SAP_BASIS 7x Products</i>
1388258 	<i>Version Interoperability within the SAP Business Suite</i>
2200904 	<i>Version Interoperability for Business Suite 7i2016</i>
1951805 	<i>Adjusted Version Interoperability for Business Suite 7i2013</i>
2171392 	<i>EHP4 for SAP SCM 7.0 SP Stacks - Release & Information Note</i>
1515223 	<i>SAP NetWeaver Process Integration: Release Recommendation</i>
1686826 	<i>Help for installing an SCM optimizer version</i>
1574235 	<i>SAP NetWeaver 7.3: Import of ESR content</i>
1860869 	<i>Post-Installation Steps for SAP SCM 7.0 EHP3</i>
1792146 	<i>Release strategy for the ABAP add-on SCM APO</i>
1784479 	<i>Collective note for APO Planning Data Replication to SAP HANA (only relevant in case you use SAP HANA)</i>
1785008 	<i>Input help for APO InfoObject terminates on SAP HANA (only relevant in case you use SAP HANA)</i>
1769895 	<i>Error when activating APO planning structures on SAP (only relevant in case you use SAP HANA)</i>
2237870 	<i>APO 7.0 EHP4 ON ERP 6.0 EHP8</i>
2096140 	<i>APO on ERP: planning with VC and CDP data</i>
2238445 	<i>Integration of Supply Chain Execution Platform Applications to SAP S/4HANA, on-premise edition</i>

2 SAP Advanced Planning and Optimization Overview

SAP Advanced Planning and Optimization (SAP APO) offers a fully integrated portfolio of functions that you use to plan and execute your supply chain processes. SAP APO supports the following:

- Business planning on a strategic, tactical, and operational level
- Co-operation between partners at all stages of the supply chain process; from order receipt, stock monitoring, through final shipping of the product
- Cultivation of customer and business partner relationships
- Constant optimization and evaluation of the supply chain network's efficiency

SAP APO provides the following two deployment options:

- SAP APO as part of SAP Supply Chain Management (SAP SCM)

This deployment option requires you to use *SAP enhancement package 4 for SAP SCM 7.0* (including SAP APO).

SAP enhancement package 4 for SAP SCM 7.0 is based on *SAP enhancement package 5 for SAP NetWeaver 7.0*.

- SAP APO as an add-on to SAP Enterprise Resource Planning (SAP ERP)

This deployment option requires you to use *SAP enhancement package 4 for SAP APO 7.0 on SAP enhancement package 8 for SAP ERP 6.0*.

SAP enhancement package 8 for SAP ERP 6.0 is based on *SAP enhancement package 5 for SAP NetWeaver 7.0*.

Functionally, both SAP APO deployment options are largely identical. They differ in data volume capabilities, configuration flexibility, and technical constraints. You can only use one single deployment option at a time for a particular business setup. You must give consideration when choosing between the two deployment options for SAP APO.

In the table below, you will find an overview of the main differences between the SAP APO as add-on for SAP ERP deployment option and the SAP APO as part of SAP SCM deployment option:

Table 6

Criteria	SAP APO as add-on for SAP ERP	SAP APO as part of SAP SCM
Technical Background	<p>SAP APO is a component that is technically dependent on SAP ECC and only can be installed in addition to SAP ERP.</p> <p>SAP APO as an add-on uses the same database as SAP ERP and SAP LiveCache with HANA DB.</p> <p>A SAP NetWeaver version fulfilling both SAP ERP and SAP APO add-on requirements must be used.</p>	<p>SAP APO is an integral part of the SAP SCM. SAP SCM is a standalone system landscape component, which is technically independent of SAP ERP and runs on a separate physical server. A collaboration with SAP ECC is possible.</p> <p>SAP SCM uses a database separate from SAP ERP and SAP LiveCache with HANA DB.</p>

Criteria	SAP APO as add-on for SAP ERP	SAP APO as part of SAP SCM
Functionality & Scope	<p>SAP APO as add-on is a subset of functionality in the SAP SCM.</p> <p>In an add-on deployment, the following SAP APO components and functions are available:</p> <ul style="list-style-type: none"> • Demand Planning (SCM-APO-FCS) • Supply Network Planning (SCM-APO-SNP) • Production Planning and Detailed Scheduling (SCM-APO-PPS) • Global Available-to-Promise (SCM-APO-ATP) <p>The following application components and functions are not supported in an add-on deployment:</p> <ul style="list-style-type: none"> • Service Parts Planning (SCM-APO-SPP) • Maintenance and Service Planning (SCM-APO-MSP) • Functions for processes with direct integration of SAP APO and SAP Supply Network Collaboration (SAP SNC): <ul style="list-style-type: none"> ◦ Connecting planning areas to SAP SNC ◦ Product determination • Planning with packaging specification data • Service-oriented architecture (SOA) services that are specific to SAP APO • Global Available-to-Promise (SCM-APO-ATP) integration with SAP CRM <div style="background-color: #fff9c4; padding: 10px; margin-top: 10px;"> <p>i Note</p> <p>Any statements in the product documentation (including SAP Library, F1 Help, Implementation Guide, messages) that refer to the use of these application components and functions are only valid for the SCM Server deployment of APO.</p> </div>	Full SAP APO functionality

Criteria	SAP APO as add-on for SAP ERP	SAP APO as part of SAP SCM
	<p>The following SAP APO functions are available with adaptions:</p> <ul style="list-style-type: none"> • Production campaigns • Transportation Planning and Vehicle Scheduling (TP/VS) • ●Planning with VC and CDP data (see SAP Note 2096140 📄) <p>SAP Workforce Management and SAP APO</p> <p>You cannot simultaneously run the add-ons SAP Workforce Management and SAP APO on SAP enhancement package 8 for SAP ERP 6.0.</p> <p>For more information about limitations, see SAP Note 2237870 📄.</p>	
Business Aspect	<p>Shared benefits of planning and optimization capabilities together with the SAP ERP system on one server (logical system). Using the same system can reduce costs and maintenance efforts.</p> <p>Easier to handle:</p> <ul style="list-style-type: none"> • SAP APO dialogue transactions appear in parallel within the SAP ERP dialogue menu. • Login to only one SAP system. <p>Less upgrade flexibility, version dependencies between SAP ERP and SAP APO exist: the underlying SAP NetWeaver version must be compatible to both.</p>	<p>Optimum utilization of SAP APO in functionality and processing speed. The use of separate systems (server) provides higher flexibility for scaling and system growth.</p> <p>There are less version dependencies towards the SAP ERP components in use.</p>
Target Group	<p>Companies with small to medium data volumes.</p> <p>In less complex supply chain an additional system environment may not be necessary to meet business requirements.</p>	<p>Companies with medium to large data volumes or high demands towards system flexibility.</p>

For more information about SAP APO contact SAP or visit our Customer Support site: www.service.sap.com 📄.

2.1 Software Units of SAP APO as an Add-On to SAP ERP

This section provides an overview of the most important software units that are used by the SAP APO as an add-on to the SAP ERP deployment option.

For SAP APO as an add-on to SAP ERP, you require:

- SAP enhancement package 8 for SAP ERP 6.0
- SAP enhancement package 4 for SAP APO 7.0 based on SAP enhancement package 8 for SAP ERP 6.0
 - SAP Advanced Planning and Optimization (SAP APO) 7.14
 - SAP SCM Optimizer 12.0
 - SAP liveCache 10.0 (which can be used with HANA DB)

i Note

Specific business processes only require a subset of these components. For a process-specific overview of components, see the section [Business Processes of SAP APO \[page 38\]](#).

2.1.1 SAP Advanced Planning and Optimization (SAP APO)

SAP Advanced Planning and Optimization (SAP APO) offers a fully integrated portfolio of functions that you can use to plan and execute your supply chain processes. SAP APO supports the following:

- Business planning on a strategic, tactical, and operational level
- Co-operation between partners at all stages of the supply chain process -- from order receipt to stock monitoring to final shipping of product
- Cultivation of customer and business partner relationships
- Continuous improvement and evaluation of the supply chain network's efficiency

Together with SAP liveCache, SAP APO uses embedded SAP BI to enhance the performance of forecasting and replenishment tasks.

i Note

SAP APO uses the embedded SAP BI architecture for technical reasons (such as using info cubes in Demand Planning). Embedded SAP BI is not intended for use in company reporting purposes.

2.1.1.1 SAP SCM Optimizer

The component SAP SCM Optimizer offers optimization engines for most of the SAP APO applications:

You can use SAP SCM Optimizer for Detailed Production Scheduling, Supply Network Planning, Supply Demand Matching, Transportation Planning and Vehicle Scheduling, and Sequencing. For SNP, PP/DS and the automotive solution the optimizers are optional planning methods.

The optimizers are tightly integrated into the application and work without any own persistence. Integration is administrated via the Remote-Control & Communication-Framework.

Each optimizer is working with a specialized algorithm to get the best possible planning results for the different applications.

2.1.1.2 SAP liveCache (SCM LC)

SAP liveCache for SAP APO

SAP liveCache is based on SAP MaxDB technology and ensures the highest SAP APO performance. SAP liveCache is SAP's state-of-the-art memory-based computing technology for real-time, high-speed processing of large data volumes. The main capabilities of SAP's memory-resident object-oriented technology are the followings:

- Application logic execution where the data is stored to avoid network overload
- Aggregation of relational data structures retrieved from the database into application-specific optimized data representations in main memory. As a result, optimization and planning tasks can be performed in minutes or seconds.
- Built-in business functionality in the form of C++ object methods
- Semantic synchronization with the SAP database
- Ready to exploit 64-Bit technology

SAP liveCache can also be used with SAP HANA DB. See SAP Note [2238445](#).

For more information about liveCache technology infrastructure, requirements, and performance recommendations, see SAP Service Marketplace at service.sap.com/scm.

LCA Routines for SAP APO

ABAP programs and SAP APO optimizers use native SQL for communicating through the standard SAP database interface to liveCache. SAP liveCache has an SQL interface that is used to communicate with the SAP instances. With native SQL, ABAP programs call stored procedures in the SAP liveCache that point to Component Object Model (COM) routines written in C++. An SQL class provides access from the LCA routines (formerly known as COM routines) to the SQL data. The LCA routines are part of a dynamic link library that runs in the process context of the SAP liveCache instance. The LCA routines have direct access to the objects stored in the SAP liveCache and can change them. This includes creation and deletion of objects in the SAP liveCache.

2.1.2 SAP Enterprise Resource Planning (SAP ERP)

The SAP ERP application supports the essential functions of your business processes and operations efficiently and are tailored to specific needs of your industry.

SAP ERP, an application included in SAP Business Suite software, delivers these solutions:

- SAP ERP Financials
- SAP ERP Human Capital Management
- SAP ERP Operations
- SAP ERP Corporate Services

For this deployment option SAP ERP is a mandatory technical prerequisite to install and use SAP APO.

2.2 Software Units of SAP APO as part of SAP SCM

This section provides an overview of the following most important software units that are used by SAP APO as part of the SAP SCM deployment option:

- SAP enhancement package 4 for SAP SCM 7.0 (based on SAP Supply Chain Management 7.0)
 - SAP SCM Server
 - SAP Advanced Planning and Optimization (SAP APO) 7.14
 - SAP Supply Network Collaboration (SAP SNC) 7.14
 - SAP NetWeaver 7.5 (product instance BI)
 - SAP SCM Optimizer 12.0
 - SAP liveCache 10.0
- SAP enhancement package 8 for SAP ERP 6.0 (requires SAP Enterprise Resource Planning 6.0)
- SAP Customer Relationship Management (SAP CRM) 7.0
- SAP enhancement package 4 for SAP NetWeaver 7.0 (product instance PI)

i Note

Specific business processes only require a subset of these components. For a process-specific overview of components, see the section [Business Processes of SAP APO \[page 38\]](#).

2.2.1 SAP Supply Chain Management Server (SAP SCM Server)

SAP Supply Chain Management is an advanced planning and scheduling tool that enables real-time decision support and collaborative network optimization across the extended supply chain. SAP SCM helps companies synchronize supply chain activities with their partners and excel to improve customer service and order fulfillment. SAP SCM contains the software units SAP APO, SAP SNC, SAP SCM Optimizer, and SAP liveCache (see above).

Embedded SAP BI

SAP SCM Server is shipped with an embedded SAP BI. Embedded SAP BI enhances, together with SAP liveCache, the performance of forecasting and replenishment tasks.

i Note

SAP SCM Server uses the embedded SAP BI architecture for technical reasons (such as using info cubes in Demand Planning). Embedded SAP BI is not meant to be used for reporting purposes of your company.

2.2.2 SAP NetWeaver Product Instance PI

Based on a native Web infrastructure that leverages open standards, SAP NetWeaver Process Integration (SAP PI) makes it possible to manage the broad diversity of highly heterogeneous components from a multitude of

vendors and to run in various technological environments. The integration capabilities capture shared business semantics and act as a mediator between the services and their technical implementations. It includes technical functions, such as Web service discovery, queuing, mapping, and routing. It also establishes an infrastructure for business process management and high-performance execution within and across organizational boundaries.

Exchange-based process integration removes the problems of direct connections by extracting shared collaboration knowledge. These shared business semantics ease the integration of both external and internal components. Instead of directly coding point-to-point interfaces for each new component, the exchange infrastructure allows instant plug-in of new components. This provides the flexibility needed in today's fast-changing business world, and it reduces integration costs compared to the direct connection approach.

2.2.3 SAP Enterprise Resource Planning (SAP ERP)

The SAP ERP application supports the essential functions of your business processes and operations efficiently and are tailored to specific needs of your industry.

SAP ERP, an application included in SAP Business Suite software, delivers these solutions:

- SAP ERP Financials
- SAP ERP Human Capital Management
- SAP ERP Operations
- SAP ERP Corporate Services

For this deployment option SAP ERP is used for certain SAP APO business processes.

2.2.4 SAP Customer Relationship Management (SAP CRM)

SAP Customer Relationship Management (SAP CRM) is a comprehensive solution for managing your customer relationships. It supports all customer-focused business areas, from marketing to sales and service, as well as customer interaction channels, such as the Interaction Center, the Internet, and mobile clients.

2.2.5 SAP Supply Network Collaboration (SAP SNC)

SAP Supply Network Collaboration (SAP SNC) is an application that supports participants in a complex supply chain network to collaborate efficiently with each other. SAP SNC supports, among other things, the management of inventories by suppliers and customers, timely shipments of replenishments, and advanced shipping notification and invoice creation. It also supports forecasting processes and work order collaboration.

2.3 Enhancement Package Key Concept

We have adapted our major release strategy to better fit your adoption cycle. To ensure that you benefit from new developments and innovations while minimizing the impact on your core operational systems, SAP uses enhancement packages to speed up the delivery of new functions.

With SAP enhancement packages, you can install and activate new functions depending on your business needs without having to perform a system upgrade.

You can selectively implement the new functions and activate the software upon business demand. As a result, you can isolate the impact of software updates and make new functions available faster due to shortened test cycles.

Implementation

There are three different scenarios to implement an enhancement package:

- Installation of an enhancement package on an existing SAP system (update)
- New installation of an SAP system including an enhancement package (installation)
- Upgrade of an SAP system including an enhancement package (upgrade)

To implement new business functions you carry out the following two steps:

- Technical installation of an enhancement package
- Activation of business functions using the switch framework technology

You have a choice on both levels – installation and activation. You do not need to install a full enhancement package. Instead, you can update the software components that are related to the functional enhancements you want to use.

Note

Keep in mind that you cannot mix the installation of different enhancement package versions in your ABAP-based SAP system. You can have just one enhancement package version in the SAP system.

From a business point of view, functional enhancements are grouped into business functions (BFs). The technical installation of the business functions does not change the system behavior. The new functions are available in the system, but are not active. After the installation, no user interface or process change takes place. You must explicitly activate new functions so that they become visible in the system. As a result, changes are predictable and there are no side effects as only the activated areas change.

With the switch framework technology (transaction SFW5), it is possible to control the activation of new SAP objects in ABAP-based SAP systems. The activation process triggers a background job that automatically performs all changes in the SAP system.

Caution

You cannot reverse most business function once they are activated. Due to technical restrictions, only a limited number of business functions are reversible.

After you have activated a business function, you can see the changes and new developments in the SAP system, for example:

- Menu entries
- New screens
- New fields on the application user interfaces

- IMG activities required for the implementation
- New table entries in Customizing tables and system tables

You can create a transport request with the current settings of the switch framework. You can check functional changes and the impact of an activated business function in advance in the business function documentation.

➔ Recommendation

Test the installation and activation on a sandbox system.

Maintenance

SAP enhancement packages have Support Packages of their own that are equivalent to the Support Package versions of the underlying SAP system. We highly recommend installing the enhancement package in combination with the latest available Support Package stack. This approach reduces installation, modification adjustment, and testing effort. Using this strategy, you can install SAP enhancement packages as a normal maintenance activity together with Support Package stacks.

An enhancement package requires a specific Support Package stack level in the source release SAP system.

i Note

If the SAP system is on a lower Support Package stack level, all relevant Support Package stacks for the EHP installation are **automatically included** into the download queue by the Maintenance Optimizer, as well as the latest available Support Packages for the enhancement package.

Tools

The enhancement package installation requires the following tools:

- **SAP Solution Manager**

i Note

Use of SAP Solution Manager is **mandatory**.

SAP recommends that you use SAP Solution Manager 7.1, SPS 10 or higher.

For more information, see SAP Support Portal at support.sap.com/solutionmanager.

Make sure that you have correctly defined and maintained your system landscape in SAP Solution Manager (transaction `SMSY`). To verify and correct your system landscape SAP highly recommends that you use the Landscape Verification Tool (LVT) for SAP Solution Manager 7.0, which is an add-on to your SAP Solution Manager 7.0 system. This add-on allows you to identify and correct issues in your SAP Solution Manager landscape (transaction `SMSY`) before they cause problems, for example during a system update. Examples for errors are a missing connection to the System Landscape Directory or the wrong assignment of products to technical systems. For each type of error, a generic description for the solution is provided.

For more information about the landscape verification add-on, see SDN at www.sdn.sap.com/irj/sdn/alm?rid=/webcontent/uuid/70fc3790-7ec9-2d10-57ad-95b2d0d1185d.

➔ Recommendation

Before installing the enhancement package, we recommend that you install the landscape verification add-on to check your landscape setup and your data (transaction `SMSY`) and to correct data should it be necessary.

- **Installation and Update Tools**

Installation or upgrade tools (depending on your scenario).

The SAP Solution Manager Maintenance Optimizer (transaction `SM_WORKCENTER`) supports the download of a consistent queue that includes all necessary Support Packages and enhancement packages. In addition, SAP Solution Manager calculates a valid import queue for the selected SAP system and generates the enhancement package stack configuration file that you require for the installation.

For the new installation of an SAP system including enhancement package you use the standard installation tool Software Provisioning Manager (SWPM).

To install an enhancement package on an existing SAP system, as well as for the upgrade of an SAP system to a higher release including an enhancement package, you use the Software Update Manager (SUM).

For more information about SWPM and SUM, see the documentation at [▶ service.sap.com/sltoolset](https://service.sap.com/sltoolset) ↗ ↘.

2.4 Key Facts About Enhancement Packages

The following list summarizes important facts about the enhancement package concept and recommended approaches:

- Install only selected parts of the enhancement package. The selection is driven by the functional need from a business point of view.
- You cannot mix the installation of different enhancement package versions in your ABAP-based SAP system. You can have just one enhancement package version in the SAP system. This means, if you have already updated technical usages to a previous EHP you need to apply the current EHP to those components as well.
- SAP enhancement packages are cumulative, meaning that each new enhancement package includes new innovations of its own as well as all innovations delivered with prior packages.
- We recommend installing the latest available enhancement package version.
- Install enhancement packages and Support Packages in one single step (this includes the preconditioned Support Packages).
- SAP enhancement packages have Support Packages of their own that are equivalent to the Support Package versions of the underlying SAP system.
- SAP enhancement packages have the same maintenance period as the underlying core application.
- The installation of an enhancement package is irreversible.
- As long as you do not activate a business function, the installation of an enhancement package has no impact on existing business processes or user interfaces.

You can only activate business functions in ABAP-based systems, not in Java-based SAP systems.

- The activation of most business functions and extension sets is irreversible. Only a small number of business functions is reversible.

Test the installation process and activation of new functions in advance on a sandbox system. Ensure that you evaluate the runtime and the SAP system behavior, its dependencies and impacts. Make sure that your SAP system is free of errors before going live.

2.5 Software Component Matrix

This section provides an overview of the components that are used by each SAP APO business process.

i Note

There are software requirements for each component which are not explicitly mentioned in this documentation. The following overview according to deployment option offers just one possible combination for the software component release levels.

For information on technical and functional interoperability when upgrading to SAP APO 7.4, see the *Upgrade Dependency Analyzer* under *Upgrade Tools* in the support portal at support.sap.com/upgrade as well as the application documentation in addition to the *Upgrade Master Guide for SAP APO 7.4*.

SAP APO as an Add-On to SAP ERP

Table 7

SAP APO Business Processes		Software Component				
		Key: X = mandatory; (X) = optional				
Process Group	Business Process	SAP APO	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI
Demand and Supply Planning	Customer Forecast Management	X	X		X	
	Demand Planning & Forecasting	X	X		X	(X)
	Vendor-Managed Inventory	X	X	(X)	X	
	Safety Stock Planning	X	X		X	
	Distribution Planning	X	X	(X)	X	
	Supply Network Planning Heuristic	X	X		X	
	Supply Network Optimization	X	X	X	X	
	Multilevel Demand and Supply Match	X	X	X	X	
Transportation	Transportation Planning	X		X	X	
ATP	Availability Check	X	X		X	
	Backorder Processing	X	X		X	
PP/DS	Production Scheduling with Capacity Reservation	X	X	(X)	X	

SAP APO Business Processes		Software Component				
		Key: X = mandatory; (X) = optional				
Process Group	Business Process	SAP APO	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI
	MRP-Based Detailed Scheduling	X	X	(X)	X	
	Production Scheduling with Tank Planning	X	X	X	X	
	Production Scheduling with Resource Networks	X	X	(X)	X	
Order Fulfillment	Sourcing	X	X		X	
	Supersession	X	X		X	
Manufacturing (Planning & Operations)	Production Planning (Process Manufacturing) MTS in SCM	X	X	(X)	X	
	Production Planning (Process Manufacturing) MTO in SCM	X	X	(X)	X	
	Production Planning (Discrete Manufacturing) MTS in SCM	X	X	(X)	X	
	Production Planning (Discrete Manufacturing) MTO in SCM	X	X	(X)	X	
	Production Planning (Discrete Manufacturing) ETO in SCM	X	X	(X)	X	
	Production Planning (Repetitive Manufacturing) MTS in SCM	X	X	(X)	X	
	Production Planning (Repetitive Manufacturing) MTO in SCM	X	X	(X)	X	
	Production Scheduling (Manual Scheduling)	X	X	X	X	
	Production Scheduling with Scheduling Heuristics	X	X	X	X	

SAP APO Business Processes		Software Component				
		Key: X = mandatory; (X) = optional				
Process Group	Business Process	SAP APO	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI
	Production Scheduling Optimization	X	X	X	X	
	Production Scheduling with Production Campaigns	X	X	(X)	X	
	Manufacturing Execution (Process Manufacturing)	(X)	(X)		X	
	Manufacturing Execution (Discrete Manufacturing)	(X)	(X)		X	
	Manufacturing Execution (Repetitive Manufacturing)	(X)	(X)		X	
	Cross-Location Planning with PP/DS	X	X		X	

SAP APO as part of SAP SCM

Table 8

SAP APO Business Processes		Software Component								
		Key: X = mandatory; (X) = optional								
Process Group	Business Process	SAP SCM 7.0	SAP EPH 4 for SAP SCM 7.0	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI	SAP NW 7.4, prod. inst. PI	SAP CRM 7.0	SAP SNC 7.14
Demand and Supply Planning	Customer Forecast Management	X		X						
	Demand Planning & Forecasting	X	(X)	X			(X)			
	Forecast Release and Consumption for Variant Configuration	X		X		(X)				

SAP APO Business Processes		Software Component								
		Key: X = mandatory; (X) = optional								
Process Group	Business Process	SAP SCM 7.0	SAP EPH 4 for SAP SCM 7.0	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI	SAP NW 7.4, prod. inst. PI	SAP CRM 7.0	SAP SNC 7.14
	Vendor-Managed Inventory	X		X	(X)	X				
	Safety Stock Planning	X		X						
	Distribution Planning	X		X	(X)					
	Supply Network Planning Heuristic	X		X						
	Supply Network Optimization	X		X	X					
	Multilevel Demand and Supply Match	X	(X)	X	X					
	Characteristics-Based CTM	X		X		(X)				
Transportation	Transportation Planning	X		X	(X)					
Services Parts Planning	Parts Forecasting	X		X		(X)	X		(X)	
	Stocking List Determination	X		X						
	Safety Stock Calculation	X		X						
	Distribution Requirements Planning	X		X		X	X			
	Pull Deployment	X		(X)		(X)				
	Inventory Balancing	X		(X)		X				
	Parts Monitoring	X		X			(X)	X		(X) X

SAP APO Business Processes		Software Component								
		Key: X = mandatory; (X) = optional								
Process Group	Business Process	SAP SCM 7.0	SAP EPH 4 for SAP SCM 7.0	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI	SAP NW 7.4, prod. inst. PI	SAP CRM 7.0	SAP SNC 7.14
	OEM-Managed Inventory	X		X		X	X			
ATP	Availability Check	X		X						
	Backorder Processing	X	(X)	X						
PP/DS	Production Scheduling with Capacity Reservation	X		X	(X)	(X)				
	MRP-Based Detailed Scheduling	X		X	(X)	X				
	Production Scheduling with Tank Planning	X		X	X	(X)				
	Production Scheduling with Resource Networks	X		X	(X)	(X)				
Order Fulfillment	Sourcing	X		X		(X)				
	Supersession	X		X		(X)				
Manufacturing (Planning & Operations)	Production Planning (Process Manufacturing) MTS in SCM	X		X	(X)	(X)				
	Production Planning (Process Manufacturing) MTO in SCM	X		X	(X)	(X)				
	Production Planning (Discrete	X		X	(X)	(X)				

SAP APO Business Processes		Software Component								
		Key: X = mandatory; (X) = optional								
Process Group	Business Process	SAP SCM 7.0	SAP EPH 4 for SAP SCM 7.0	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI	SAP NW 7.4, prod. inst. PI	SAP CRM 7.0	SAP SNC 7.14
	Manufacturing) MTS in SCM									
	Production Planning (Discrete Manufacturing) MTO in SCM	X		X	(X)	(X)				
	Production Planning (Discrete Manufacturing) CTO in SCM	X		X	(X)	(X)				
	Production Planning (Discrete Manufacturing) ETO in SCM	X		X	(X)	(X)				
	Production Planning (Repetitive Manufacturing) MTS in SCM	X		X	(X)	(X)				
	Production Planning (Repetitive Manufacturing) MTO in SCM	X		X	(X)	(X)				
	Production Planning (Repetitive Manufacturing) CTO in SCM	X		X	(X)	(X)				
	Production Scheduling (Manual Scheduling)	X		X	X					

SAP APO Business Processes		Software Component								
		Key: X = mandatory; (X) = optional								
Process Group	Business Process	SAP SCM 7.0	SAP EPH 4 for SAP SCM 7.0	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI	SAP NW 7.4, prod. inst. PI	SAP CRM 7.0	SAP SNC 7.14
	Production Scheduling with Scheduling Heuristics	X		X	X					
	Production Scheduling Optimization	X		X	X					
	Production Scheduling with Block Planning	X		X	(X)					
	Production Scheduling with Production Campaigns	X		X	(X)					
	Manufacturing Execution (Process Manufacturing)	(X)		(X)		X				
	Manufacturing Execution (Discrete Manufacturing)	(X)		(X)		X				
	Manufacturing Execution (Repetitive Manufacturing)	(X)		(X)		X				
	Cross-Location Planning with PP/DS	X		X		(X)				
	Replenishment Planning in PP/DS	X		X		(X)				

SAP APO Business Processes		Software Component								
		Key: X = mandatory; (X) = optional								
Process Group	Business Process	SAP SCM 7.0	SAP EPH 4 for SAP SCM 7.0	SAP liveCache 10.0	SAP SCM Optimizer 12.0	SAP ERP 6.0 & SAP EHP 8 for SAP ERP 6.0	SAP NW 7.5, prod. inst. BI	SAP NW 7.4, prod. inst. PI	SAP CRM 7.0	SAP SNC 7.14
Procurement	Purchase Order Processing for Service Parts	X				X		X		X
	Release Processing for Service Parts	X				X		X		X

2.6 System Landscape

The following figures provide an overview of a possible system landscapes for the business processes of SAP APO as add-on for SAP ERP or as part of SAP SCM.

SAP APO as an Add-On to SAP ERP

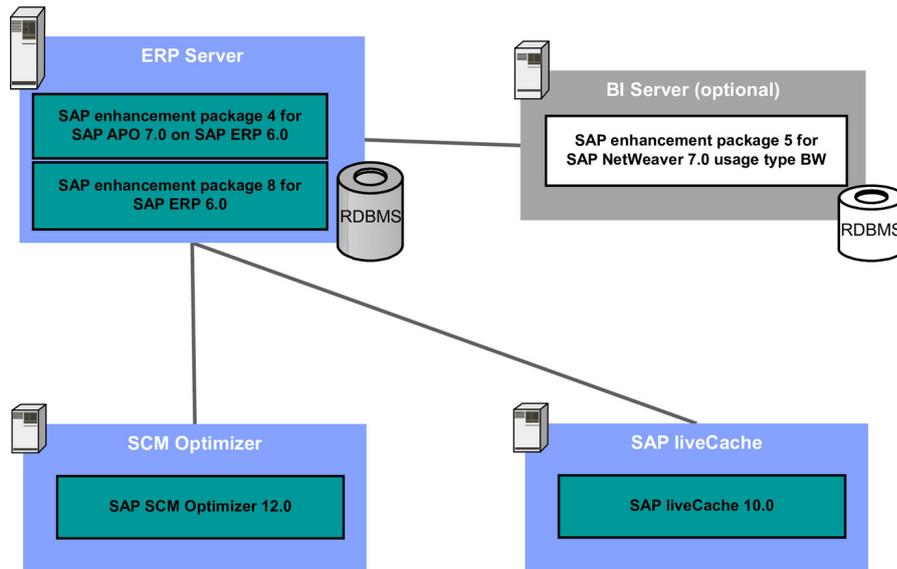


Figure 1: Figure 1: System landscape for SAP APO as an Add-on

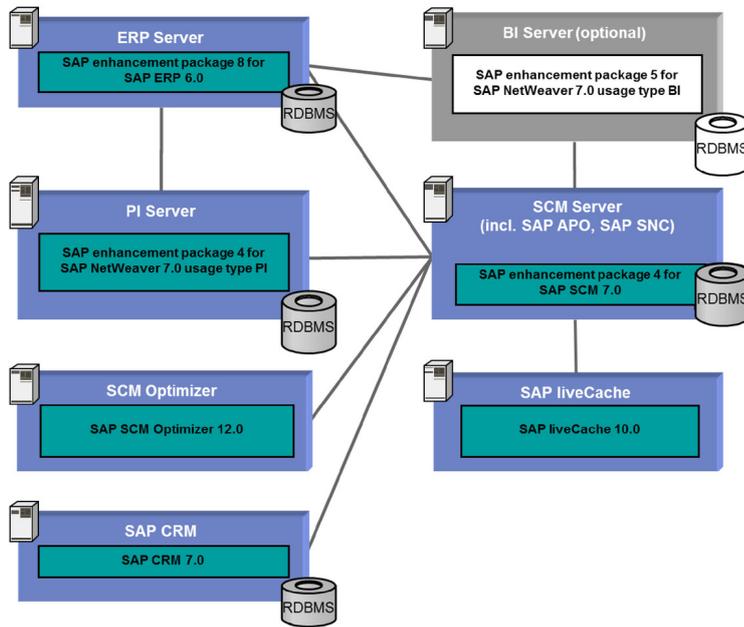


Figure 2: Figure 2: System landscape for SAP APO as part of SAP SCM

Multiclient Capabilities

For SAP APO some restrictions apply:

Table 9

SAP APO	Multiclient Compliant	Comment
PP/DS	Yes	N/A
TP/VS	Yes	SAP BW related restrictions only for Carrier Selection; uses ATP product allocation, because in this case, ATP product allocation uses Demand Planning automatically
ATP	Yes, with restrictions and workarounds	SAP BW related restrictions for ATP product allocation when using Demand Planning
ATP	Yes	N/A
CTM	Yes	N/A
SNP	Yes, with restrictions and workarounds	SAP BW related restrictions for technical data based on planning object structures
DP	Yes, with restrictions and workarounds	SAP BW related restrictions.

SAP LiveCache

For productive systems we recommend that you run exactly one SAP liveCache on a separate server (for reasons of performance, stability, and availability). The supply of several SAP APO systems from a common SAP

liveCache (with shared data) is not supported. Thus, from a logical point of view, each system has to have its own SAP liveCache.

If your system runs on SAP HANA database, two deployment options for SAP liveCache are provided:

- The ABAP stack runs on a SAP HANA database, while SAP liveCache and SCM Optimizer run outside of SAP HANA. In this option, SAP liveCache is installed as in all previous releases, as a separate instance, not on an SAP HANA database but on SAP MaxDB technology.

i Note

Running SAP liveCache on a SAP HANA database that is separate from the SAP HANA database that SCM Server is installed on is not supported.

- The ABAP stack runs on an SAP HANA database, together with an integrated SAP liveCache, while SCM Optimizer runs outside of SAP HANA.

SAP Optimizer

The supply of several SAP APO systems from a common optimization server is possible. It is recommended to have distinct sets of optimizer-executables in such cases. Additionally, take extra care with load balancing to avoid overcommitting of CPU and memory resources.

SAP Identity Management

For an overview of the planning and installation information necessary for implementing SAP NetWeaver Identity Management 7.2, see SAP Help Portal at help.sap.com/nwidm72.

2.7 Overall Implementation Sequence

i Note

The installation is executed by SAPinst.

The following tables show the installation sequence for the different servers and point you to detailed information about each one:

Process

SAP APO as add-on for SAP ERP

Table 10

Step	Action	Documentation
1	Installation of SAP Enhancement Package 8 for SAP ERP 6.0	For more information, see the SAP ERP Installation Guide on SAP Service Marketplace at service.sap.com/instguides > <i>SAP Business Suite Applications</i> > <i>SAP ERP</i> > <i>SAP ERP 6.0</i> > <i>SAP Enhancement Packages for SAP ERP 6.0</i> > <i>SAP enhancement package 8 for SAP ERP 6.0</i> .

Step	Action	Documentation
2	Installation of SAP APO	For more information, see the SAP APO Installation Note on SAP Service Marketplace at ▶ service.sap.com/instguides ▶ SAP Business Suite Applications ▶ SAP SCM ▶ SAP APO ▶ .
3	SAP liveCache 10.0	For more information, see the SAP liveCache Installation Guides on SAP Service Marketplace at ▶ service.sap.com/instguides ▶ SAP Business Suite Applications ▶ SAP SCM ▶ SAP SCM Server ▶ Using SAP enhancement package 4 for SAP SCM 7.0 ▶ Installation Guides ▶ .
4	Installation of SAP SCM Optimizer 12.0	For more information, see the SAP SCM Optimizer Installation Guide on SAP Service Marketplace at ▶ service.sap.com/instguides ▶ SAP Business Suite Applications ▶ SAP SCM ▶ SAP SCM Server ▶ Using SAP enhancement package 4 for SAP SCM 7.0 ▶ Installation Guides ▶ .
5	Installation of SAP NetWeaver 7.5 product instance BI	For more information, see service.sap.com/installNW75 ▶ or service.sap.com/installNW75 ▶ .
6	BI Content 7.57	You can download the BI content for SAP SCM from SAP Support Portal at ▶ support.sap.com/swdc ▶ SAP Software Download Center ▶ Support Packages and Patches ▶ Browse Our Download Catalog ▶ SAP Application Components ▶ SAP SCM ENHANCE PACKAGES ▶ EHP4 FOR SAP SCM 7.0 ▶ Comprised Software Component Versions ▶ SAP NW 7.5 BI CONT ADDON 7.57 ▶ .

SAP APO as part of SAP SCM

Table 11

Step	Action	Documentation
1	Installation of SAP Enhancement Package 8 for SAP ERP 6.0	For more information, see the SAP ERP Installation Guide on SAP Service Marketplace at ▶ service.sap.com/instguides ▶ SAP Business Suite Applications ▶ SAP ERP ▶ SAP ERP 6.0 ▶ SAP Enhancement Packages for SAP ERP 6.0 ▶ SAP enhancement package 8 for SAP ERP 6.0 ▶ .
2	Installation of SAP SCM Server 7.0 including SAP enhancement package 4	For more information, see the SAP SCM Installation Guide on SAP Service Marketplace at ▶ service.sap.com/instguides ▶ SAP Business Suite Applications ▶ SAP SCM ▶ SAP SCM

Step	Action	Documentation
		Server > Using SAP enhancement package 4 for SAP SCM 7.0 Server >
3	SAP liveCache 10.0	For more information, see the SAP liveCache Installation Guides on SAP Service Marketplace at ▶ service.sap.com/instguides > ▶ SAP Business Suite Applications > ▶ SAP SCM > ▶ SAP SCM Server > ▶ Using SAP enhancement package 4 for SAP SCM 7.0 > ▶ Installation Guides >.
4	Installation of SAP SCM Optimizer 12.0	For more information, see the SAP SCM Optimizer Installation Guide on SAP Service Marketplace at ▶ service.sap.com/instguides > ▶ SAP Business Suite Applications > ▶ SAP SCM > ▶ SAP SCM Server > ▶ Using SAP enhancement package 4 for SAP SCM 7.0 > ▶ Installation Guides >.
5	Installation of SAP NetWeaver 7.4 product instance PI	For more information, see service.sap.com/installNW74 >.
6	Installation of XI Content for SAP SCM 7.0 including SAP enhancement package 4	You can download the XI content for SAP SCM from the SAP Support Portal at ▶ support.sap.com/swdc > ▶ SAP Software Download Center > ▶ Support Packages and Patches > ▶ Browse Our Download Catalog > ▶ SAP Application Components > ▶ SAP SCM ENHANCE PACKAGES > ▶ EHP4 FOR SAP SCM 7.0 > ▶ Comprised Software Component Versions >.
7	Installation of SAP NetWeaver 7.5 product instance BI	For more information, see service.sap.com/installNW75 >.
8	BI Content 7.57	You can download the BI content for SAP SCM from the SAP Support Portal at ▶ support.sap.com/swdc > ▶ SAP Software Download Center > ▶ Support Packages and Patches > ▶ Browse Our Download Catalog > ▶ SAP Application Components > ▶ SAP SCM ENHANCE PACKAGE > ▶ EHP4 FOR SAP SCM 7.0 > ▶ Comprised Software Component Versions > ▶ SAP NW 7.5 BI CONT ADDON 7.57 >.

i Note

The business process that you want to use determine the servers (software components) that you must install. For more information, see [Software Component Matrix \[page 24\]](#).

2.8 Integration of SAP BusinessObjects

The integration of SAP BusinessObjects SAP Crystal Reports and SAP BusinessObjects Xcelsius in SAP Business Suite provides you with analysis functions that are integrated in the user interface and processes: Embedded Analytics.

Predefined reports and dashboards provide a detailed, graphical, or interactive display of (transaction) data from SAP Business Suite or from SAP Business Warehouse.

Embedded Analytics contains the following integrations:

- SAP Crystal Reports as an alternative for displaying simple lists in SAP GUI ALV Grid, Web Dynpro ABAP ALV, and POWER list (not in SAP CRM)
- SAP Crystal Reports for the formatted display of data from queries
- Xcelsius for the graphical or interactive display of data from queries in dashboards

Users can call these functions in SAP NetWeaver Business Client, SAP Enterprise Portal, or SAP CRM.

Technical Requirements

- SAP Crystal Reports for Displaying Simple Lists

You require SAP Crystal Reports viewer for Business Suite Applications 1.0 or higher. Note the corresponding license terms.

- SAP Crystal Reports with Queries

To display the SAP Crystal Reports provided, you require SAP BusinessObjects Enterprise XI 3.1 (SP02) and SAP BusinessObjects Integration for SAP XI 3.1 (SP02). Note the corresponding license terms for SAP BusinessObjects.

To create your own SAP Crystal Reports, you require SAP Crystal Reports 2008 V1 (SP02). Note the corresponding license terms.

- Xcelsius Dashboards with Queries

To display the Xcelsius dashboards provided, you require Adobe Flash Player version 9. You must also check the license terms for SAP BusinessObjects.

To create your own dashboards, you require SAP BusinessObjects Xcelsius Enterprise 2008 (SP03, FP1). Note the corresponding license terms for SAP BusinessObjects.

For displaying data from queries via the predefined content, the following system requirements also apply:

- SAP NetWeaver 7.0 including enhancement package 2 (SP04) or higher
- SAP NetWeaver 7.0 BI Content Add-On 5 or higher
- Extension for SAP NetWeaver 7.02 BI Content Add-On 5 or higher

More Information

For more information about the different topics, see the information sources in the following table.

Table 12

Topic	Information Source
General Information	<ul style="list-style-type: none"> • SAP Library for SAP ERP on SAP Help Portal at help.sap.com/erp > <choose release SAP ERP 6.0 EHP4 or later> > Application Help > Processes and Tools for Enterprise Applications > Embedded Analytics >

Topic	Information Source
	<ul style="list-style-type: none"> SAP Library for SAP CRM on SAP Help Portal at help.sap.com/crm > <choose release> > <i>Application Help</i> > <i>Processes and Tools for Enterprise Applications</i> > <i>Embedded Analytics</i>
Installation Information	SAP Help Portal at help.sap.com > <i>Analytics - All Products</i>
Configuration Information	SAP Solution Manager under <i>Solutions/Applications</i> > <i>Basic Configuration</i> > <i>Configuration Structures</i> > <i>Embedded Analytics</i>
Installation Instructions	<ul style="list-style-type: none"> SAP Note 1353044 SAP Note 1345320

3 Business Processes of SAP APO

This section contains short process descriptions and information about the technical landscape of the business processes. A detailed process description and configuration documentation is part of SAP Solution Manager implementation content as of ST-ICO 150_700 SP 31.

SAP APO Business Process Groups

SAP APO consists of the following business process groups:

- *Demand and Supply Planning*
- *Transportation*
- *Service Parts Planning*
- *Available to Promise*
- *Production Planning and Detailed Scheduling (PP/DS)*
- *Order Fulfillment*
- *Manufacturing (Planning & Operations)*
- *Procurement*

i Note

The Business Process Groups *Service Parts Planning* and *Procurement* are **not** part of the SAP APO add-on deployment option. They are currently only available in SAP APO as part of SAP SCM. Consider this essential point when you decide which of the two SAP APO deployments you want to use.

For more information about the scope of functionality and prerequisites of the two SAP APO deployments, see [SAP Advanced Planning and Optimization Overview \[page 14\]](#).

i Note

You can find an overview of the SAP APO functionality in the solution map located at [▶ service.sap.com/bmet](https://service.sap.com/bmet)
[▶ SAP Business Maps](#) [▶ Cross-Industry Maps](#) [▶ Supply Chain Management](#) [▶](#)

3.1 Demand and Supply Planning

The process group *Demand and Supply Planning* contains the following business processes:

- [Customer Forecast Management \[page 39\]](#)
- [Demand Planning & Forecasting \[page 40\]](#)
- [Forecast Release and Consumption for Variant Configuration \[page 42\]](#)
- [Vendor-Managed Inventory \[page 43\]](#)
- [Safety Stock Planning \[page 44\]](#)
- [Distribution Planning \[page 45\]](#)
- [Supply Network Planning \[page 45\]](#)

- [Supply Network Planning Heuristic \[page 46\]](#)
- [Supply Network Optimization \[page 47\]](#)
- [Multilevel Demand and Supply Match \[page 49\]](#)
- [Characteristics-Based CTM \[page 50\]](#)

3.1.1 Customer Forecast Management

Description

You can use this business process to receive and analyze incoming customer forecasts and make the necessary adjustments before releasing them to Demand Planning for downstream planning. An analysis of forecasts enables you as a vendor to sense tendencies and changes in customer demand and integrate this information into replenishment planning. Customer Forecast Management ensures higher responsiveness to fluctuations in demand and also contributes to the prevention of stock-outs.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 13

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

SAP APO as an Add-On to SAP ERP

Table 14

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.1.2 Demand Planning & Forecasting

Description

You can use this business process to perform your demand planning and forecasting activities. Demand Planning is often the starting point of the entire supply chain planning process and is used to create a forecast of market demand for your company's products.

This business process contains the following major planning processes:

- Consensus Demand Planning
- Forecasting and Lifecycle Planning
- Promotion Planning

Consensus Demand Planning

Consensus demand planning brings together all available information and enables a collaborative planning process that includes all partners. Forecasts and promotion plans are included automatically. Various calculations can be carried out to combine all information or to check for critical situations that are highlighted as alerts.

The result of consensus demand planning is a final demand plan that can be transferred to:

- Supply planning for further planning
- Execution (in an ERP system of SAP) to trigger production or procurement
- SAP Business Intelligence (SAP BI) for archiving, reporting, or integrating to other systems and solutions

Consensus demand planning includes the following areas:

- Data handling
- Collaborative demand planning
- Macro calculation

Data Handling

Demand Planning should include all available information regarding historical sales, budgets, strategic company plans, or sales targets. This data can be obtained from different sources. Then, it can be transferred from any source to InfoCubes of SAP Business Intelligence (SAP BI). From there, the data can be read directly or transferred first to the liveCache to improve performance.

Furthermore, the data can be restructured to generate characteristic combinations to be used as a planning basis. For aggregated planning, the results often need to be disaggregated to lower levels of detail. In this case, the historical data can be used to calculate the corresponding proportions of all details.

Planned data (such as forecasts or a demand plan) is stored in liveCache. From there it can be extracted to InfoCubes for reporting, archiving, or integration into other systems or solutions.

Collaborative Demand Planning

Demand Planning includes a very flexible interactive planning interface to enable manual planning, simulation, forecasting, and work on critical situations for all involved planners.

Furthermore, all Demand Planning data is available on the web so as to include internal and external partners in the planning process. This ensures that all partners agree on the defined quantities, horizons, and conditions.

Macro Calculation

Macros enable calculation on the planning grid. They can be freely defined by planners using a simple macro language in the easy-to-use MacroBuilder.

Macros can be executed during background processing and on the planning grid. In particular, they are used to combine different kinds of information, to derive dependent measures, or to calculate alerts based on any check. More sophisticated macros can also add new planning logic, which increases the flexibility and strength of the application.

Forecasting and Lifecycle Planning

A company's product portfolio probably includes a variety of products that are in different stages of their lifecycle and have different demand types. Unfortunately, a single forecasting method that creates accurate statistical forecasts for mature, slow-moving or new products does not exist. Therefore, various methods have to be used to get the right answers. Forecasting and Lifecycle Planning offers a toolbox for practical, proven forecasting that can be divided into three methods:

- Statistical Forecasting
- Causal Forecasting
- Composite Forecasting

Lifecycle Planning can be combined with each of these methods.

Promotion Planning

In Demand Planning, you can plan promotions or other special events separately. You can use promotion planning to record either one-time events or repeated events, such as quarterly advertising campaigns. Other examples of promotions are trade fairs, trade discounts, dealer allowances, product displays, coupons, contests, free-standing inserts, as well as non-sales-related events, such as competitors' activities, market intelligence, upward/downward economic trends, strikes, and natural disasters, such as hurricanes or earthquakes.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 15

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP NetWeaver 7.5 product instance BI		X

SAP APO as an Add-On to SAP ERP

Table 16

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP NetWeaver 7.5 product instance BI		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

i Note

Depending on the data volume that your company handles, the integrated BI of the SCM server may be sufficient. In this case you do not need a separate BI server.

3.1.2.1 Forecast Release and Consumption for Variant Configuration

Description

Forecast Release and Consumption for Variant Configuration (VC) allows you to release the forecast with its own configuration for the Variant Configuration scenario. These forecasts are released to SNP or PP/DS, into a new planning segment called Characteristics-Based Planning Without Final Assembly. The released forecasts can be consumed by sales orders with a matching configuration. The orders can be integrated back to characteristics-based forecasting (CBF) as well.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 17

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 18

Component	Mandatory	Optional
SAP enhancement package 3 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

3.1.3 Vendor-Managed Inventory

Description

You can use this business process to perform replenishment planning as a vendor on behalf of your customers. Vendor-managed inventory (VMI) aims at the integration of key customers in supply chain planning. By receiving regular sales and stock data from the customer, the vendor has better access to actual customer requirements and can make informed decisions about how to distribute goods for different customers. This ensures improved customer service, lower transportation costs, less inventory, and lower sales costs. Besides the standard VMI process, you can also implement a consigned VMI process (a combination of customer consignment and vendor-managed inventory) or a parallel consigned and non-consigned scenario.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 19

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

SAP APO as add-on for SAP ERP

Table 20

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

Note

SAP enhancement package 4 for SAP ERP 6.0 is required for the consigned VMI process and the parallel consigned and nonconsigned scenario. The standard, nonconsigned VMI process does not require SAP enhancement package 4 for SAP ERP 6.0.

For more information about the installation of these components, see section System Landscape in this guide.

3.1.4 Safety Stock Planning

Description

You can use this business process to plan the quantity of additional stock to procure and hold in case of unexpectedly high fluctuations in demand. Safety Stock Planning allows you to meet a target service level while creating a minimum necessary amount of safety stock throughout your entire supply chain for all intermediate and finished products at their respective locations.

Two different groups of safety stock calculation methods are offered:

- Basic safety stock planning
- Extended safety stock planning

Basic Safety Stock Planning

The easiest way to plan your safety stock is to define a time-dependent or time-independent safety stock level, or to define a number of safety days of supply values for materials required at any stock holding location. The system applies these settings and calculates the resulting safety stock automatically. The safety stock is then considered during subsequent supply network planning runs and during the production run.

Extended Safety Stock Planning

The extended safety stock planning method can calculate and consider the variability on the demand and supply side. Simulations of the service level and the forecast error can also be performed. Besides service levels, the system also supports reorder cycle and reorder point strategies.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 21

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

SAP APO as add-on for SAP ERP

Table 22

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.1.5 Distribution Planning

Description

You can use this business process to plan distribution for your deployment run. When production is completed, deployment determines which demands can be fulfilled by the existing supply. Deployment decides by product where available quantities will be transported. If there are insufficient quantities available to fulfill the demand or the quantities available exceed the demand, deployment makes adjustments to the plan created by the SNP run.

The deployment run generates deployment stock transfers based on the SNP stock transfers that were created during the SNP run. The Transport Load Builder (TLB) then uses these deployment stock transfers to create transport loads, thus generating TLB shipments.

Note

You cannot use deployment for stock transfers involving storage location MRP areas. .

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 23

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X

SAP APO as add-on for SAP ERP

Table 24

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.1.6 Supply Network Planning

Supply Network Planning (SNP) contains the following business processes:

- [Supply Network Planning Heuristic \[page 46\]](#)

- [Supply Network Optimization \[page 47\]](#)
- [Multilevel Demand and Supply Match \[page 49\]](#)
- [Characteristics-Based CTM \[page 50\]](#)

3.1.6.1 Supply Network Planning Heuristic

Description

You can use this business process to integrate purchasing, production, distribution (of demands), and transportation so that comprehensive midterm to long-term tactical planning and sourcing decisions can be simulated and performed on the basis of a single, global, consistent model or sub-model.

Supply Network Planning (SNP) offers three basic algorithms to carry out the planning:

- Heuristics (together with capacity leveling capability)
- Optimization
- Multilevel supply and demand matching (capable-to-match)

Starting from a demand plan, SNP determines a permissible medium- to long-term plan for fulfilling the estimated and real sales volumes. The algorithms plan for all sources of supply from the customer, through distribution centers, to the plants and their suppliers.

Each algorithm does the following:

- Distributes production over the plants
- Selects production options and alternatives
- Explodes the bill of materials
- Determines the procurement of semi-finished goods and raw materials

The algorithms differ in the way they make decisions, the constraints (for such factors as production, storage, or transportation) which they consider, and on which level of aggregation they perform the planning.

The result is best, but not necessarily optimal, purchasing, production, and distribution decisions as well as reduced order fulfillment times and inventory levels, and an improved customer service level.

SNP is based on a model of the supply network. The model represents a specific supply chain (or network) and consists of individual nodes, links, and other elements. The nodes represent different locations of the network, such as customer locations, distribution centers, plants, or suppliers. The links between the nodes are represented by the transportation lanes. Elements such as products, bills of materials, routings, and different kinds of resources are also essential parts of the supply network.

The supply network definition itself is not part of the ongoing SNP process, but it is an important prerequisite. The structure of the model and the detailed settings influence the results of the planning run.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 25

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

SAP APO as add-on for SAP ERP

Table 26

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.1.6.2 Supply Network Optimization

Description

You can use this business process to integrate purchasing, production, distribution (of demands), and transportation using optimization and multilevel supply so that comprehensive midterm to long-term tactical planning and sourcing decisions can be simulated and performed on the basis of a single, global, consistent model or submodel.

Supply Network Optimization is best performed in planning versions that are different from the active planning version. Executing Supply Network Planning (SNP) and Production Planning and Detailed Scheduling (PP/DS) in different planning versions has the following advantages:

- High degree of stability in SNP
- Checked SNP plans can be released to PP/DS
- SNP and PP/DS can be performed in different frequency.
- SNP can build up stock.
- Adjustment of production and requirements is possible.
- Make-to-order is possible.
- There are no restrictions to periodic lots in PP/DS.
- Key performance indicators (KPIs) of what-if scenarios for different planning versions can be compared in the Business Intelligence (BI) system.

Supply Network Planning offers three basic algorithms to carry out the planning:

- Heuristics (together with capacity leveling capability)
- Optimization
- Multilevel supply and demand matching (capable-to-match)

Starting from a demand plan, SNP determines a permissible medium to long-term plan for fulfilling the estimated and real sales volumes. The algorithms plan for all sources of supply from the customer, through distribution centers to the plants and their suppliers.

Each algorithm does the following:

- Distributes production over the plants
- Selects production options and alternatives
- Explodes the bill of materials
- Determines the procurement of semifinished goods and raw materials

The algorithms differ in the way that they make decisions, the constraints (for such factors as production, storage, or transportation) that they consider, and the level of aggregation that they perform the planning.

The result is best purchasing, production, and distribution decisions as well as reduced order fulfillment times and inventory levels, and improved customer service.

SNP is based on a model of the supply network that represents a specific supply chain (or network) and consists of individual nodes, links, and other elements. The nodes represent different locations of the network, such as customer locations, distribution centers, plants, or suppliers. The links between the nodes are represented by the transportation lanes. Elements such as products, bills of materials, routings, and different kinds of resources are also essential parts of the supply network.

The supply network definition itself is not part of the ongoing Supply Network Planning and Outsourcing process, but is an important prerequisite. The structure of the model and the detailed settings influence the results of the planning run.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 27

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	

SAP APO as add-on for SAP ERP

Table 28

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.1.6.3 Multilevel Demand and Supply Match

Description

You can use this business process to integrate purchasing, production, distribution (of demands), and transportation so that comprehensive mid-term to long-term tactical planning and sourcing decisions can be simulated and performed on the basis of a single, global, consistent supply chain model.

Starting from a demand plan, Capable-to-Match (CTM) - the key application in the Multilevel Supply and Demand Match process - determines a permissible mid-term to long-term plan for fulfilling the estimated and real sales volumes. CTM plans all sources of supply in the supply chain model, for example, it performs the planning from the distribution centers to the plants and their suppliers.

You can use CTM to do the following:

- Distribute production across the plants
- Select production options and alternatives
- Explode the bill of materials
- Determine the procurement of semi-finished goods and raw materials

CTM performs a finite and order-oriented planning of the demands in your supply chain based on priorities and quota arrangements. During the planning run, the algorithm tries to match prioritized demand elements against categorized receipt elements by considering capacity constraints. The results of the planning run depend directly on the prioritization and categorization rules you maintained in your system. The CTM result is the most suitable according to these priorities and categories but not necessarily the optimal purchasing, production, and distribution plan in terms of costs.

CTM planning is based on a model of the supply network. The model represents a specific supply chain (or network) and consists of individual nodes, links, and other elements. The nodes represent different locations of the network, such as customer locations, distribution centers, plants, or suppliers. Transportation lanes are the links between the nodes. Elements such as products, bills of materials, routings, and different kinds of resources are also essential parts of the supply network. The supply network definition itself is not part of the ongoing supply chain planning process but is an important prerequisite. The structure of the model influences the results of the CTM planning run significantly.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 29

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	

SAP APO as add-on for SAP ERP

Table 30

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.1.6.4 Characteristics-Based CTM

Description

With this business process, the Capable-to-Match (CTM) process considers characteristics while executing a multilevel, finite planning of demands in your supply chain. Characteristics-based CTM uses the PP/DS production data structure (PDS) and supports certain object dependencies, for example, select conditions and procedures with or without reference characteristics. It allows you to carry out block-based planning.

i Note

In an add-on deployment of APO, this feature is **only supported as of support package 7 for SAP APO 7.0 EHP 3**.

For more information about the scope of functionality and prerequisites of the two SAP APO deployments, see [SAP Advanced Planning and Optimization Overview \[page 14\]](#).

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 31

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 32

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see the *System Landscape* section in this guide.

3.2 Transportation

Transportation contains the following business processes: [Transportation Planning \[page 51\]](#).

3.2.1 Transportation Planning

Description

You can use this process to create optimized shipments and transfer these shipments to SAP ERP for execution. To do this, Transportation Planning/Vehicle Scheduling (TP/VS) first reads transportation-relevant business documents (for example, sales orders, purchase orders, or stock transfer orders) from SAP ERP. Next, TP/VS assigns the loads represented by these documents to resources such as trucks or railcars to create planned shipments that it assigns to carriers, and, finally, tenders the shipments to the assigned carriers.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 33

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X

For more information about the installation of these components, see section System Landscape in this guide.

3.3 Service Parts Planning

The process group Service Parts Planning contains the following business processes:

i Note

This feature is not part of the SAP APO add-on deployment option. It is currently only available in SAP APO as part of SAP SCM. Consider this essential point when you decide which of the two SAP APO deployments you want to use.

For more information about the scope of functionality and prerequisites of the two SAP APO deployments, see [SAP Advanced Planning and Optimization Overview \[page 14\]](#).

- [Parts Forecasting \[page 52\]](#)
- [Stocking List Determination \[page 53\]](#)
- [Safety Stock Calculation \[page 53\]](#)
- [Distribution Requirements Planning \[page 54\]](#)
- [Pull Deployment \[page 54\]](#)
- [Inventory Balancing \[page 55\]](#)
- [Parts Monitoring \[page 56\]](#)
- [OEM-Managed Inventory \[page 56\]](#)

3.3.1 Parts Forecasting

Description

You can use this business process to capture historical demand, model that demand according to the structure of the service parts supply chain, and perform forecasts for determining future demand. Demand planning is done in an adaptive way which continuously analyses past forecast performance and adjusts forecast models and parameters accordingly.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 34

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0		X
SAP CRM 7.0		X

Component	Mandatory	Optional
SAP NetWeaver 7.5 product instance BI	X	

For more information about the installation of these components, see section System Landscape in this guide.
 For gathering data for the demand history, you can choose whether you use SAP ERP 6.0 or SAP CRM 7.0 as source system.

3.3.2 Stocking List Determination

Description

You can use this business process to determine the optimal stocking points of a product within the service parts supply chain by considering the characteristics of the product, its demand, and the supply chain structure.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 35

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.3.3 Safety Stock Calculation

Description

You can use this business process to simultaneously optimize the safety stock and an economic order quantity by using forecast demand information and its standard deviation to determine the amount of safety stock to be kept at each stocking point in the supply chain. This enables you to handle demand and supply uncertainty according to a target service level. Service levels are determined dynamically and differentiated based on demand, demand frequency, product classification, or cost of a product at the given location.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 36

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.3.4 Distribution Requirements Planning

Description

You can use this business process to determine rounded net requirement needs throughout the service parts supply chain. These requirements are aggregated along the hierarchical supply chain structure to result in supply proposals which are covered either by supply of remanufactured parts or by purchase requisitions or schedules for individual products or kits to one or more suppliers. The distribution requirements planning calculation considers full interchangeability to use up existing inventory of a predecessor product, minimum net demand for slow moving items, schedule adjustments for seasonal demands and inventory build-up, as well as supplier schedule stability rules.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 37

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP NetWeaver 7.5 product instance BI		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.3.5 Pull Deployment

Description

Pull deployment is triggered based on a material need of a subordinate location in the supply chain. It determines a prioritized fair share distribution among all subordinate locations of the same level, but only creates stock

transfer requisitions to the triggering locations. Pull deployment uses the current inventory situation within the supply chain network as the basis for decision making.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 38

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

For more information about the installation of these components, see section System Landscape in this guide.

3.3.6 Inventory Balancing

Description

You can use this business process to manage lateral material movement in the service parts supply chain. Triggered by a number of events such as an unfulfilled Pull Deployment requisition, Inventory Balancing determines excess and shortage locations within a predefined balancing area. It suggests stock transfers based on a cost-benefit analysis that compares the additional cost of a lateral transfer with the inventory, warehouse, and service benefits.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 39

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.3.7 Parts Monitoring

Description

You use this process to provide visibility for all planning-related processes and for potential follow-up activities.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 40

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SNC 7.12	X	
SAP enhancement package 8 for SAP ERP 6.0		X
SAP CRM 7.0		X
SAP NetWeaver 7.5 product instance BI	X	

For more information about the installation of these components, see section System Landscape in this guide.

You only have to install SAP SNC 7.0 if you wish to use supplier delivery performance rating.

3.3.8 OEM-Managed Inventory

Description

You, being an original equipment manufacturer (OEM) and owner of Service Parts Planning (SPP), can use this business process to plan the inventory of certain service parts for certain customers or dealers. In doing so, you can support these customers or dealers to optimize their planning and their inventory situation. The customers and dealers that you include in this process do not actively have to order service parts from you any more, but you as OEM trigger the stock transport to the customer's or dealer's location based on your planning. The customer or dealer, whom you involve in the OEM-managed inventory process, has stored his or her sales data and his or her stock data either in an SAP system or in an external system. The customer or dealer provides you with information about this data in a business-to-business (B2B) process. This B2B process is an XML-based process between business partners, which allows these business partners (especially smaller business partners, as your customers or dealers might be) to exchange XML documents. SPP uses the sales data that you receive from your customer or dealer, to create a demand history for the relevant service parts. On the basis of this demand history, SPP continues the regular planning (including forecasting, inventory planning, distribution requirements planning, deployment, and so on) for the service parts at the customer's or dealer's location.

You can display all the planning results for service parts at your customer's or dealer's location on the SPP screens on which you also display the planning results of your OEM-locations. Your customer or dealer can

display the planning results that are relevant to him or her in the customer's worklist, which he or she can access using a Web browser.

Additionally, the customer or dealer has the following options to influence the planning result:

- Agree or disagree to a stocking or destocking decision.
- Approve and change replenishment orders for his or her location.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 41

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	
SAP NetWeaver 7.5 product instance BI	X	

i Note

Note the following requirements regarding enhancement packages:

- If you use Service Parts Planning in a landscape with SAP CRM, you do not need any enhancement package of SAP ERP 6.0.
- If you use Service Parts Planning in a landscape without SAP CRM, you must work with SAP enhancement package 2 for SAP ERP 6.0 or higher.
- If you want to use the repair or buy function with a global ATP check, you must work with SAP enhancement package 4 for SAP ERP 6.0.

For more information about the installation of these components, see section System Landscape in this guide.

3.4 Available to Promise

This business process group contains the following business processes:

- [Availability Check \[page 57\]](#)
- [Backorder Processing \[page 58\]](#)

3.4.1 Availability Check

Description

You can use this business process in a heterogeneous system landscape to provide required real time information as quickly as possible. The availability check is an online search that ensures that your company can provide the

requested product at the requested time in the requested quantity. The availability check automates business decisions about how to best service your customer, by using simple to complex rule definitions. It helps companies provide better customer service by increasing and meeting fulfillment expectations and can increase revenue by selling what you have, reducing overall operating expenses, and increasing your company's efficiency.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 42

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

SAP APO as add-on for SAP ERP

Table 43

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.4.2 Backorder Processing

Description

You can use this business process to analyze and resolve backorder situations for your orders automatically. The business process *Backorder Processing* is relevant to you if you use Global Availability-to-Promise (Global ATP) in SAP Advanced Planning and Optimization (SAP APO) to determine the availability of the products for your orders. You combine backorder processing, for example, with the business process *Availability Check*, which you use, for example, to determine the product availability in sales order processing.

From an ATP perspective, a backorder situation exists for an order item in the following cases:

- An order item is not yet completely confirmed.
- A requested delivery date is not confirmed.
- An overconfirmation exists, meaning that the cumulative confirmed quantity exceeds the available quantity.

Backorder processing allows you to change quantities and dates that result from a previous ATP check (that was performed, for example, during sales order creation). In particular, you can redistribute the confirmed quantities from low-priority order items to high-priority order items. The goal of backorder processing is to improve the

confirmation situation for your high-priority orders (ideally a complete confirmation), if necessary at the cost of lower-priority orders.

The business process *Backorder Processing* uses batch backorder processing, that is, backorder processing in the background using the report `/SAPAPO/BOF`. You can schedule this report as a periodic background job (always running, for example, after a SNP or PP/DS planning run) or you can call it up manually (for example, if you receive high-priority orders at the last minute). The batch backorder processing report selects items according to your selection criteria and brings the items into a processing sequence according to your priorities. It then carries out an ATP check for all selected items in the defined sequence, and triggers the transmission of the results to the connected ERP system (SAP), where the corresponding order documents are updated automatically.

You can combine batch backorder processing and interactive backorder processing. In interactive backorder processing, you can process confirmations manually to redistribute quantities from low-priority orders to high-priority orders. You can even create overconfirmations if necessary, which you only should use, however, if you can resolve the overconfirmation situation by the start of the order fulfillment execution at the latest.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 44

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

SAP APO as add-on for SAP ERP

Table 45

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.5 Production Planning and Detailed Scheduling (PP/DS)

The process group Production Planning and Detailed Scheduling contains the following business processes:

- [Production Scheduling with Capacity Reservation \[page 60\]](#)
- [MRP-Based Detailed Scheduling \[page 61\]](#)
- [Production Scheduling with Tank Planning \[page 61\]](#)

- [Production Scheduling with Resource Networks \[page 64\]](#)

3.5.1 Production Scheduling with Capacity Reservation

Description

You use this business process to model capacity reservations on resources. It is possible to reserve capacity for up to three different reservation characteristics on a single resource. For example you can reserve capacity for certain customers on a resource, capacity for a sales region, and capacity for certain account directors as well. In this case, the selected characteristics are customer, sales region, and account director.

Additionally, you can maintain a release date to prevent reserved capacity from remaining unused. This date specifies when the unused reserved capacity can be released for reassignment to other characteristics.

Capacity reservations help shorten delivery times to strategic customers by reserving capacity for them. During a capable-to-promise (CTP) check, capacity reservations are checked and a realistic delivery date can be returned to the customer.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 46

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 47

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.5.2 MRP-Based Detailed Scheduling

Description

MRP-based detailed scheduling allows you to combine material requirement planning (MRP) in SAP ERP and detailed scheduling in SAP APO without transferring bills of materials (BOMs), routings, or production versions to SAP APO. This process enables you to derive the benefits of detailed scheduling in SAP APO while continuing to use the planning functions of SAP ERP.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 48

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

SAP APO as add-on for SAP ERP

Table 49

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.5.3 Production Scheduling with Tank Planning

Description

A container is a resource in which a product can be stored. Such a resource is limited not only by time, but also by capacity (defined as volume, weight, or other dimension).

A container resource is considered occupied only when it contains product (downtimes are not considered). This means that upstream or downstream operations determine how long the resource will be used, rather than the

direct operation (filling, emptying) of the resource itself. Capacity is consumed even without executing a production order or planned order.

Depending on the nature of the container resource, certain limitations may apply — for example, if the container resource can hold only one material at a time, or if it must be emptied to zero before it can be filled with a new product.

Single-product container resources can contain only one product at a time, while multi-product container resources can contain several products at the same time.

Container Planning considers the material capacity limitations of such container resources as dedicated product container resources, holding or buffer containers, mobile containers, stockpiles, silos, reactors, or blend vessels with storage functionality (common in the chemical, food & beverage, and other process industries).

Container resources are used over the entire supply chain for purchased material, intermediates, and finished products. These can be liquids as well as bulk solids (the latter typically stored in silos).

➔ Recommendation

Only container resources that pose real bottlenecks should be considered as container resources for best performance and transparency. End of the recommendation.

Below are several examples of container planning scenarios:

- A container resource with a dedicated product holds a product over a long period of time (months or even years), and cannot be used for other products during that time. The container is filled and emptied without being drained between a minimum and maximum fill level.
Relevant for scheduling is the available (remaining) capacity, not the availability of the resource itself. The major scheduling objective is to avoid overflow of the container.
- An interchangeable buffer container holds multiple products, but only one at a time. Between a product change, the container must be drained and often cleaned to avoid contamination by the predecessor product. The container usually is filled in one step and then emptied to zero in one or several steps.
Relevant for scheduling is the capacity as well as the availability of the resource itself. Even if the resource is filled at only 5%, it is not available for another operation with a different product. The major scheduling objectives are to minimize the holding time of the containers and to use containers with the appropriate capacity, thus maximizing container utilization.
- Blending/Mixing with storage allows modeling the mixing of different materials in a vessel with storage characteristics. After completion of the process, that new material is stored in the same resource over a period of time. It means that the product(s) or components put into the container are different from the product withdrawn from the container.
The relevance for scheduling is similar to the interchangeable buffer container case described above, with the objective of maximizing asset utilization.
- Multiple product storage facilities hold more than one product at a time. Such cases are found in piece-oriented production and discrete manufacturing, where the pieces can be stored and withdrawn individually.

The business process Production Scheduling with Tank Planning contains the following major processes:

- Product Storage Definition
- PP/DS optimization run with the storage constraint
- Manual rescheduling

Product Storage Definition

The Product Storage Definition master data element defines storage options and thus the modeling of enhanced product flow. It supports both sources of supply types, production process model (PPM) and production data

structure (PDS). This master data can be integrated with the product flow data from SAP ERP. You can set priorities for container resource alternatives.

Resource Master Data

Selecting the *Allow Multiple Products* checkbox allows multiple products to be stored together at the same time in a container resource, without generating an alert.

Selecting the *Set Remaining Fill Levels to Zero* checkbox allows the system is to assume zero of a product in a container resource so it can be filled with a different product thereafter. Not selecting the checkbox means that the planned level must be zero in order to fill the resource with a different product.

PP/DS optimization run with the storage constraint

The PP/DS optimization run respects the maximum fill level of container resources as an additional constraint in concert with such other constraints as requirement due dates, capacity, or work time calendars. The optimization strategy determines if container resource properties such as maximum fill level are considered as constraints or not.

Orders may be created or deleted, or order quantities (lot sizes) adjusted during optimization.

The optimization does not support the generation of production campaigns while considering container resource constraints or creating orders.

Filling and withdrawing material into or from a container resource is modeled as immediate, not as continuous material flow for the optimization run. Draining is considered the start of the activity; filling is the end.

The optimizer supports simple mixing scenarios, but does not support chemical conversions (reactions) in container resources.

The result is a finite schedule whose optimization model takes into account the major scheduling constraints, and which is close to the theoretically optimal plan (depending on user-defined settings, weights, and priorities). Users can use their experience and knowledge of the current plant environment to refine this schedule manually.

Manual rescheduling

Pegging logic conforms to the container resources and is stored as a new setting in the product master. This feature can be disabled.

Alerts are generated for any container resource constraint violation, which allows the user to quickly identify and resolve those issues manually.

The Detailed Scheduling Planning Board is the recommended tool for interactive manipulation of the production schedule.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 50

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	

Component	Mandatory	Optional
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 51

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.5.4 Production Scheduling with Resource Networks

Description

Resource networks simplify the modeling of resource restrictions for consecutive operations/orders. For process industries in particular, certain production restrictions often apply. For example, if an operation takes place on a resource such as a reactor or blend vessel, then only a limited set of successor resources (such as storage tanks for intermediates or finished bulk products or filling lines) can be used for the successor operation.

With resource networks, you will be able to model existing production constraints more precisely, with the objective of creating a finite and technically feasible production schedule. Resource networks also reduce the combinatorial complexity of mode coupling as an alternative way of modeling resource connections and availability.

Resource networks are intended to define allowed physical connections between resources. They basically represent pipes or other means of transport to move products produced by one resource to another resource where it is consumed. A product flow in this application is a real product flow, meaning that it may not necessarily be a product known within the system (PEGID) that is transported, but may be an intermediate product that exists between the operations or phases within an order.

The business process Production Scheduling with Resource Networks contains the following processes:

- Definition of resource networks
- PP/DS (Production Planning/Detailed Scheduling) optimization run with resource network constraints
- Manual rescheduling (resource networks within orders)

Definition of Resource Networks

The resource network is a new business object in SAP APO. It is defined by a positive list of allowed directed connections between two or more resources. (A "directed connection" means that the connection from resource 1 to resource 2 is not the same as the inverse connection from resource 2 to resource 1.)

Priorities are defined for resource linkages, and a resource can be a member of more than one resource network. By default, a resource is connected to itself, but this setting can be overridden.

Defining resource networks as separate business objects reduces the number of master data permutations in the PPM and PDS by eliminating the need for mode coupling.

A resource network's data needs to be created and maintained in APO, and can be modified at any time. There is no integration to resource networks that can be defined as part of a master recipe in SAP R/3 PP-PI (Production Planning — Process Industries).

PP/DS Optimization Run with Resource Network Constraints

The PP/DS optimization run respects resource networks as additional constraints in concert with such other constraints as requirement due dates, capacity, or work time calendars. The optimization strategy defines resource linkages within orders, and allows for deactivating this constraint as well.

The result is a finite schedule that considers all major scheduling constraints as part of the optimization model, and is close to the theoretically optimal plan (depending on user-defined settings, weights, and priorities).

Users can refine this schedule manually based on their experience and knowledge of the current plant environment.

Manual Rescheduling (Resource Networks Within Orders)

The SAP liveCache applications scheduler respects all resource network constraints within orders and between orders.

Alerts are generated for any resource network violation, allowing the user to quickly identify and rectify the issue(s) manually.

The Detailed Scheduling Planning Board is the recommended tool for interactive manipulation of production scheduling.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 52

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 53

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.07.0	X	

Component	Mandatory	Optional
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.6 Order Fulfillment

The process group Order Fulfillment contains the following business processes:

- [Sourcing \[page 66\]](#)
- [Supersession \[page 67\]](#)

3.6.1 Sourcing

Description

You can use this business process to answer the critical question “Do I have stock to sell?” in all its complexities. In most businesses, across all industries, it is not an easy question to answer. Some customer orders may have priority over others. A material may be maintained in some locations, but not in others. So the simple question “Do I have stock to sell?” quickly evolves into “Do I have stock to sell in the location closest to the customer, and if not, can I find stock somewhere else in my supply chain?” or “Do I have stock that has been promised to another customer that I would be willing to sell to this other customer instead?”

This process enables better visibility of material activity, clearly showing and guiding the processes of material sales, transfers between internal locations, and use of materials in manufacturing processes. With clear visibility, better business decisions can be made, answering other key questions. For instance: “Are we selling too many products to one-time customers while neglecting our established customer base?”

The benefits of being able to intelligently and knowledgeably answer these questions are felt through-out the supply chain, often resulting in higher customer-satisfaction ratings, higher fill-rates, and lower shipping costs.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 54

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	

Component	Mandatory	Optional
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 55

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.6.2 Supersession

Description

You can use this business process to enable chains of product substitution. In many business scenarios, particularly those in manufacturing, it is common for parts to be discontinued and replaced by one or more other parts. Part B replaces Part A, and eventually, Part C replaces Part B. Using supersession chains in SAP SCM, it is possible to create and maintain this relationship among parts. When an ATP check is performed in gATP (from a sales order) for Part A after it has been replaced by Part B, Part B will be the part sold.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 56

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 57

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7 Manufacturing (Planning & Operations)

The process group Manufacturing (Planning & Operations) contains the following areas:

- [Production Planning \(Process Manufacturing\) \[page 68\]](#)
- [Production Planning \(Discrete Manufacturing\) \[page 71\]](#)
- [Production Planning \(Repetitive Manufacturing\) \[page 75\]](#)
- [Production Scheduling \[page 79\]](#)
- [Manufacturing Execution \[page 84\]](#)
- [Cross-Location Planning with PP/DS \[page 88\]](#)
- [Replenishment Planning with PP/DS \[page 89\]](#)

3.7.1 Production Planning (Process Manufacturing)

The area Production Planning (Process Manufacturing) contains the following business processes:

- [Production Planning \(Process Manufacturing\) MTS in SCM \[page 68\]](#)
- [Production Planning \(Process Manufacturing\) MTO in SCM \[page 69\]](#)

3.7.1.1 Production Planning (Process Manufacturing) MTS in SCM

Description

You use this business process to carry out make-to-order production. Make-to-order production is carried out without reference to a sales order.

This business process is used in process industries. This includes the chemical and pharmaceutical industries, food and beverage industry, and the process-oriented electronics industry.

The requirement quantities for the finished products are determined in demand planning. Incoming sales orders are delivered from the warehouse.

The order is used to plan material requirements across all BOM levels, based on the requirements for the finished products and components (from the forecast and demand plan, or when the threshold value for the available stock falls short (reorder point)). These orders represent receipt elements for in-house production and external procurement.

In process industries, make-to-stock production is frequently used at the bulk ware level (unpackaged goods), whereas finished products are normally manufactured with make-to-order production.

The business process includes analysis, planning according to MRP logic, and evaluation of the planning results. It is normally carried out in Production Planning and Detailed Scheduling (PP/DS). Extensive planning steps such as material planning (MRP) normally run in the background in the production planning run; they can also be carried out manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 58

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 59

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.1.2 Production Planning (Process Manufacturing) MTO in SCM

Description

You use this business process to carry out make-to-order production.

Make-to-order production is carried out with reference to a sales order, meaning that, as a rule, the items in a manufacturing order are only manufactured for a certain customer.

This business process is used in process industries. This includes the chemical and pharmaceutical industries, food and beverage industry, and the process-oriented electronics industry. The order is used to plan material requirements across all BOM levels, based on the customer requirements for the finished products and components. These orders represent receipt elements for in-house production and external procurement.

In the process industry, make-to-order production is frequently used for finished products only (such as packaged goods), while raw materials and unpackaged goods (bulk ware) are often produced with make-to-stock production. After the sales order has been received, the bulk ware is packaged for the customer; in some cases, the bulk ware is packaged using customer-specific packing materials.

The business process includes analysis, planning according to MRP logic, and evaluation of the planning results. It is normally carried out in Production Planning and Detailed Scheduling (PP/DS). Extensive planning steps such as product planning (MRP) normally run in the background in the production planning run; they can also be carried out manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 60

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 61

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.2 Production Planning (Discrete Manufacturing)

The area Production Planning (Discrete Manufacturing) contains the following business processes:

- [Production Planning \(Discrete Manufacturing\) MTS in SCM \[page 71\]](#)
- [Production Planning \(Discrete Manufacturing\) MTO in SCM \[page 72\]](#)
- [Production Planning \(Discrete Manufacturing\) CTO in SCM \[page 73\]](#)
- [Production Planning \(Discrete Manufacturing\) ETO in SCM \[page 74\]](#)

3.7.2.1 Production Planning (Discrete Manufacturing) MTS in SCM

Description

You can use this business process to carry out make-to-stock production.

Make-to-stock production is carried out without reference to a sales order. The requirement quantities for the finished products are determined in demand planning. Incoming sales orders are delivered from the warehouse.

This business process is used in discrete industries. This includes the consumer products industry, mechanical engineering, metal and paper production, and the electronics industry.

You can use the order to plan material requirements across all BOM levels, based on the requirements for the finished products and components from the forecast and demand plan, or when the threshold value for the available stock falls short (reorder point). These orders represent receipt elements for in-house production and external procurement.

This business process includes analysis, planning according to MRP logic, and evaluation of the planning results. It is normally carried out in Production Planning and Detailed Scheduling (PP/DS). Extensive planning steps, such as product planning (MRP), normally run in the background in the production planning run; although they can also be carried out manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 62

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 63

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.2.2 Production Planning (Discrete Manufacturing) MTO in SCM

Description

You can use this business process to carry out make-to-order production.

In make-to-order production, the in-house production or procurement of products is only started when the sales order has been received.

This business process is suitable for products with short replenishment lead times for the finished product and for all incoming assemblies and components.

This business process is useful if the costs of procurement and production of assemblies and components is high. With this business process, additional storage costs can be avoided if incorrect forecasts have been made.

In case of long replenishment lead times for assemblies and components and low costs, forecasting for assemblies is useful to reduce the delivery time for the sales order.

This business process is used in discrete industries such as consumer products (high-quality consumer products), machine construction, metal and paper production, and electronics. You can use the generated orders to plan material requirements across all BOM levels, based on the sales orders. These orders represent receipt elements for in-house production and external procurement, and can be displayed according to the customer. The material flow between the BOM levels can be coordinated.

This business process includes analysis, planning according to MRP logic, and evaluation of the planning results. Extensive planning steps, such as material requirements planning usually run in the background although they can also be planned manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 64

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	

Component	Mandatory	Optional
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 65

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.2.3 Production Planning (Discrete Manufacturing) CTO in SCM

Description

You use this business process to carry out configure-to-order production.

In make-to-order production, the in-house production or procurement of products is only started when the sales order has been received. The product characteristics are determined when creating the sales order.

This business process is suitable for identical products with characteristics that the customer can define when creating the sales order. Therefore, it is not useful to plan at the finished product level. You can implement planning at the assembly level for the assemblies that are not influenced by customer requirements. This affects assemblies that contain a large number of finished products.

This business process is used in discrete industries. This includes the machinery and automotive industries, the aerospace and electronics industries, and component supplier industries. Orders are generated that are used to plan material requirements across all BOM levels, based on the sales orders. These orders represent receipt elements for in-house production and external procurement, and can be displayed according to customer. The material flow between the BOM levels can be harmonized.

The business process includes analysis, planning according to MRP logic, and evaluation of the planning results. Extensive planning steps such as material requirements planning usually run in the background, although they may also be planned manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 66

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 67

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.2.4 Production Planning (Discrete Manufacturing) ETO in SCM

Description

You can use this business process to carry out engineer-to-order production.

Engineer-to-order production is carried out with reference to a project from the project system; that is, the items in a manufacturing order are manufactured for a specific project.

This business process is used in discrete industries. This includes the machinery and plant engineering and construction industry, and the aerospace industry.

You can use the order to plan material requirements across all BOM levels, based on the requirements for the finished products and components required in the project. These orders represent receipt elements for in-house production and external procurement.

This business process includes analysis, planning according to MRP logic, and evaluation of the planning results. Extensive planning steps, such as material requirements planning, usually run in the background, although they can also be planned manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 68

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

Table 69

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.3 Production Planning (Repetitive Manufacturing)

The area Production Planning (Repetitive Manufacturing) contains the following business processes:

- [Production Planning \(Repetitive Manufacturing\) MTS in SCM \[page 75\]](#)
- [Production Planning \(Repetitive Manufacturing\) MTO in SCM \[page 76\]](#)
- [Production Planning \(Repetitive Manufacturing\) CTO in SCM \[page 78\]](#)

3.7.3.1 Production Planning (Repetitive Manufacturing) MTS in SCM

Description

You use this business process to create a production plan for repetitive manufacturing.

Repetitive manufacturing is suitable for companies that manufacture similar products in large quantities, which are not based on sales orders. The requirement quantities for the finished products are determined in demand planning. Incoming sales orders are delivered from the warehouse.

This business process is used in discrete industries. This includes the consumer goods industry, the machine construction and automotive industries, the electronics industry, and the component supplier industries. The system generates orders for finished products and components to cover the requirements across all BOM levels.

based on planned independent requirements such as forecast values, demand plan, or when the stock level falls short. These orders represent receipt elements for in-house production and external procurement.

The main aims of repetitive manufacturing are to evenly schedule resources and simplify order processing in production. The material flow between the BOM levels can be harmonized.

This business process includes procurement planning, analysis, and evaluation of planning results. Extensive planning steps such as material requirements planning usually run in the background, although they may also be planned manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 70

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 71

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.07.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.3.2 Production Planning (Repetitive Manufacturing) MTO in SCM

Description

You use this business process to create a production plan for repetitive manufacturing.

In make-to-order repetitive manufacturing, the in-house production or procurement of products is only started when the sales order has been received. This business process is suitable for products with short replenishment lead times for the finished product and all incoming assemblies and components. This business process is useful

if the costs of procurement and production of assemblies and components is very high; additional storage costs can be avoided in case of incorrect forecasts. In case of long replenishment lead times for assemblies and components and low costs, forecasting for assemblies is useful in order to reduce the delivery time for the sales order.

This business process is used in discrete industries. This includes the machine construction and automotive industries, the electronics industry, and the component supplier industries. The system generates orders based on the sales orders to cover the requirements across all BOM levels. These orders represent receipt elements for in-house production and external procurement, and can be displayed according to customer.

The main aims of repetitive manufacturing are to evenly schedule resources and simplify order processing in production. The material flow between the BOM levels can be harmonized.

This business process includes procurement planning, analysis, and evaluation of planning results. Extensive planning steps such as material requirements planning usually run in the background, although they may also be planned manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 72

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 73

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.3.3 Production Planning (Repetitive Manufacturing) CTO in SCM

Description

You use this business process to create a production plan for configurable products that are manufactured with repetitive manufacturing.

In make-to-order repetitive manufacturing with configurable products, the in-house production or procurement of products is only started when the sales order has been received. You define the product characteristics when creating the sales order.

This business process is suitable for identical products with characteristics that the customer can define when creating the sales order. Therefore, it is not useful to carry out forecasting at the finished product level. You can implement forecasting at the assembly level for the assemblies that are not influenced by customer requirements. This affects assemblies that contain a large number of finished products.

This business process is used in discrete industries. This includes the automotive industry, the electronics industry, and the component supplier industries. The system generates orders based on the sales orders to cover the requirements. These orders represent receipt elements for in-house production and external procurement. The main aims of repetitive manufacturing are to evenly schedule resources, to simplify order processing in manufacturing, and reducing setup times. The material flow between the BOM levels can be harmonized.

The business process includes procurement planning, and takes into account capacities, and the analysis and adjustment of planning results. Extensive planning steps such as material requirements planning usually run in the background, although they may also be planned manually.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 74

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 75

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X

Component	Mandatory	Optional
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.4 Production Scheduling

The area Production Scheduling contains the following business processes:

- [Production Scheduling \(Manual Scheduling\) \[page 79\]](#)
- [Production Scheduling with Scheduling Heuristics \[page 80\]](#)
- [Production Scheduling Optimization \[page 81\]](#)
- [Production Scheduling with Block Planning \[page 82\]](#)
- [Production Scheduling with Production Campaigns \[page 83\]](#)

3.7.4.1 Production Scheduling (Manual Scheduling)

Description

In production planning, detailed scheduling is combined with procurement planning. Detailed scheduling is used to compare the capacity requirements from the manufacturing orders with the available production capacity. Different planning methods and strategies can be combined with one another depending on what is required by the user.

Detailed scheduling with manual scheduling can be used for all industries; it can also be combined with other variants in detailed scheduling, such as optimization.

The business process includes problem analysis, scheduling and creating orders and operation sequences and the analysis and evaluation of planning results. The business process is carried out in the component Production Planning and Detailed Scheduling in SAP APO.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 76

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	

SAP APO as add-on for SAP ERP

Table 77

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.4.2 Production Scheduling with Scheduling Heuristics

Description

In production planning, detailed scheduling is linked to procurement planning. Detailed scheduling is used to compare the capacity requirements from the manufacturing orders with the available production capacity. You can combine different planning methods and strategies depending on what the user requires.

Heuristics are planning functions that carry out scheduling for selected objects (products, resources, operations, or line networks for each planning focus) based on rules that are stored in the function. This includes sort and priority rules. In detailed scheduling, planning mostly focuses on resources and operations.

Detailed scheduling with heuristics can be used for all industries; it can also be combined with other variants in detailed scheduling, such as optimization. For special planning problems, there are branch-specific heuristics available (such as for the metal and paper industries).

The business process includes problem analysis, scheduling in detailed scheduling, and the analysis and evaluation of planning results. It is executed in the component Production Planning and Detailed Scheduling in SAP APO.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 78

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	

SAP APO as add-on for SAP ERP

Table 79

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.4.3 Production Scheduling Optimization

Description

In production planning, detailed scheduling is combined with procurement planning. Detailed scheduling is used to compare the capacity requirements from the manufacturing orders with the available production capacity. Detailed scheduling with optimization generates a production plan that is optimized according to certain business criteria. Different criteria (such as setup time and lead time optimization) can be combined with one another according to what the user requires.

Detailed scheduling with optimization can be used for all industries; it can also be combined with other variants in detailed scheduling, such as manual scheduling.

The business process includes problem analysis, optimization of the production plan, and the analysis and evaluation of planning results. It is executed in the component Production Planning and Detailed Scheduling in SAP APO.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 80

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	

SAP APO as add-on for SAP ERP

Table 81

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.4.4 Production Scheduling with Block Planning

Description

In production planning, procurement planning is followed by detailed scheduling. You can use detailed scheduling to adjust capacity requirements from manufacturing orders to the available production capacity.

Detailed scheduling with block planning completes the different types of detailed scheduling (detailed scheduling with manual scheduling, heuristics, and optimization). Detailed scheduling with block planning entails forecasting or preassigning resources for products with certain properties for better utilization of capacities.

In industries such as metal and paper, orders are scheduled based on predefined planning as well as on delivery dates, priority, and availability. You define which product types and products are combined according to their production requirements. The reason for this is that combining these products for production can take advantage of the same production setup and reduce the number of production runs. Specified product sequences and maintenance required in fixed intervals are important, especially for block durations. Blocks can also represent production cycles and periods in which only certain products can be manufactured (planning at characteristics level). Block definitions are determined by technical conditions for production, for example, steel type A is only manufactured every first week, and steel type B every second week.

Block planning has no effect on a sequence defined by a setup key. It runs in the blocks.

Detailed scheduling with block planning is normally used in the metal and paper processing industries, but it can also be used in other industries, such as food processing, where products with certain characteristics must be grouped into predefined blocks.

This business process covers block definitions, scheduling, and analyzing and evaluating planning results. It is carried out in the following components of SAP APO:

- Production Planning and Detailed Scheduling (PP/DS)
- Multilevel Supply and Demand Matching (SDM) in the planning application Capable-to-Match (CTM)

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 82

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X

SAP APO as add-on for SAP ERP

Table 83

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.4.5 Production Scheduling with Production Campaigns

Description

In production planning, detailed scheduling is combined with procurement planning. Detailed scheduling is used to compare the capacity requirements from the manufacturing orders with the available production capacity.

A production campaign is a combination of orders that are required to manufacture products on a production line without having to perform major setup activities. Generally, setup and clean-out activities are required on the production resources between two campaigns.

In SAP APO, the planned and manufacturing orders are combined for manufacturing one or more products.

Detailed scheduling with production campaigns is mostly used in the process industries (such as chemical, pharmaceutical, and food industries). However, it can also be used in industries in which several orders are grouped together based on certain criteria, and must be maintained together.

The business process includes pre-processing setup and clean-out orders, creating the production plan, campaigns, setup and clean-out orders, analyzing and evaluation planning results, and managing the production campaigns. It is executed in the component Production Planning and Detailed Scheduling (PP/DS) in SAP APO.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 84

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X

SAP APO as add-on for SAP ERP

Table 85

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP SCM Optimizer 12.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.5 Manufacturing Execution

The area Manufacturing Execution contains the following business processes:

- [Manufacturing Execution \(Process Manufacturing\) \[page 84\]](#)
- [Manufacturing Execution \(Discrete Manufacturing\) \[page 86\]](#)
- [Manufacturing Execution \(Repetitive Manufacturing\) \[page 87\]](#)
- [Cross-Location Planning with PP/DS \[page 88\]](#)
- [Replenishment Planning in PP/DS \[page 89\]](#)

3.7.5.1 Manufacturing Execution (Process Manufacturing)

Description

You can use process manufacturing with process orders in process industries for batch-oriented manufacturing based on recipes. This business process is used in industries such as the chemical and pharmaceutical industries, food and beverage industries, and the process-oriented electronics industry, where production control and internal activity planning and accounting for products is carried out using orders.

In addition to these orders, you get an object that helps you to track your work in process (WIP). The so-called WIP batch comprises the quantity of material being produced and describes the state of the material between the individual production operations. In production, you can use the WIP batches not only to document the progress

made in production on a quantity basis (via confirmations) but also to record the current properties/ characteristics of the material that is to be produced.

In addition, the WIP batch ensures end-to-end batch tracking because the system can automatically record n:m relationships between input and goods receipt batches with this function.

Whether or not it would make sense to use WIP batches depends on the business scenario in your enterprise.

You can define the following with a process order:

- Which product is to be produced
- When production is to take place
- What capacity is to be used
- What production will cost

As soon as a planned order or another request is generated from material requirements planning, the information is passed on to shop floor control. The order-relevant data is also added to ensure complete order processing.

You use process orders to monitor production and control cost accounting within a company.

Process manufacturing supports the following:

- Production campaigns (equal distribution of setup and clean-out costs)
- Joint production
- Mass processing of process orders
- Active ingredient management and material quantity calculation (cost and quantity calculation is dependent on batch characteristics such as concentrations)
- HTML-based PI sheets (integrated interface for creating and processing various production-relevant data)
- Electronic batch records to continuously document the production process (to meet FDA/GMP regulations)
- In-process monitoring (inspection results in quality management)
- Integration at field device level (for example, bar code scanners)
 - Asynchronous via the PI-PCS interface/SAP XI
 - Synchronous via OPC interface (Open Process Connectivity)

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 86

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0		X
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

SAP APO as add-on for SAP ERP

Table 87

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0		X
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.5.2 Manufacturing Execution (Discrete Manufacturing)

Description

You can use this business process to carry out work-to-order manufacturing based on bills of material and routings. This business process is used in industries with discrete manufacturing, such as the automotive industry and mechanical engineering, where production control, internal activity planning, and accounting for materials and assemblies is carried out using orders.

In addition, the WIP batch ensures end-to-end batch tracking because the system can automatically record n:m relationships between input and goods receipt batches with this function.

Whether or not it would make sense to use WIP batches depends on the business scenario in your enterprise.

You use a production order to determine the following:

- Which material/product is to be produced
- When production is to take place
- Which capacity is to be dispatched
- What production will cost

As soon as a planned order or other request is generated from material requirements planning, the information is passed on to shop floor control. The order-relevant data is also added to ensure complete order processing.

Production orders are used to control and monitor production within a company and also to support cost accounting.

Production order processing supports the following:

- Collective orders (planned orders or production orders that are linked to one another over several production levels)
- Joint production
- Batch-specific material unit of measure (product quantity management)
- Assembly orders (the system can create an assembly order automatically when you create a sales order)
- Order splits
- Mass processing of production orders
- In-process monitoring (inspection results in quality management)

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 88

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0		X
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

SAP APO as add-on for SAP ERP

Table 89

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0		X
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see *System Landscape* section in this guide.

3.7.5.3 Manufacturing Execution (Repetitive Manufacturing)

Description

You can use repetitive manufacturing for production planning and control within repetitive manufacturing and flow manufacturing environments. The main areas of use are industries with discrete manufacturing such as the automotive industry, or industries with continuous production processes, such as the chemical industry.

The aims of repetitive manufacturing are:

- Creation and revision of production quantities on a period and quantity basis (reduction in individual lot and order-specific processing)
- Reduction of work in production control and simplification of the back flush

You can implement repetitive manufacturing if the following applies to your production process:

- You produce the same or similar products over a lengthy period of time.
- You do not manufacture in individually defined lots. Instead, you produce a total quantity over a certain period of time, for example, at a certain rate per part or period.
- Your products always follow the same sequence through the machines and work centers in production.
- Routings tend to be simple and do not vary much.
- The costs are settled per material or per version using a product cost collector (product cost by period), and you do not need to perform controlling based on production orders.

ERP supports the following variants:

- You only use repetitive manufacturing for make-to-stock production. This means that production is controlled without a direct reference to a sales order. Run schedule quantities determine the dates and quantities. The requirements are generated by demand management. Sales order quantities are delivered from stock and consume the planned independent requirement quantities in demand management according to the planning strategy you select. A product cost collector is used to collect actual data and to settle costs.
- You use repetitive manufacturing in a make-to-order production environment. The system creates one or several planned orders that directly reference the sales order item, on the basis of which material is manufactured. Production is triggered by sales orders. If you are a repetitive manufacturer and work in a make-to-order environment with valuated sales order stock, you create a product cost collector for the material that is delivered to the sales order stock. The costs incurred for the production of the inventory are collected by the product cost collector and can be analyzed there.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 90

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0		X
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

SAP APO as add-on for SAP ERP

Table 91

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0		X
SAP liveCache 10.0		X
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.7.6 Cross-Location Planning with PP/DS

Description

With this set of business processes, Production Planning and Detailed Scheduling (PP/DS) supports the following cross-location planning functions:

- Demand Propagation
This cross-location planning function enables you to propagate demand across locations connected by transportation lanes. For example, from distribution center to plant.
- Descriptive Characteristics Propagation
This function enables you to propagate the descriptive characteristics associated with the demand across locations. It can be used in several scenarios, including forecast consumption and capacity reservation.
- Interactive Sourcing
This function enables you to interactively decide the locations of supply from which procurement proposals must be sourced. Information on key resources and key components for each source location are displayed.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 92

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 93

Component	Mandatory	Optional
SAP enhancement package 4 for SAP APO 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

3.7.7 Replenishment Planning in PP/DS

Description

With this set of business processes, the following replenishment planning tasks can be performed:

- Characteristics-based PP/DS Deployment
With the help of deployment heuristics for PP/DS, you can create confirmed stock transfer requisitions (STR) only when the characteristics of a planned STR match those of the available-to-deploy quantity (ATD). The characteristics to be considered during deployment can be maintained in the deployment characteristics profile.

If the characteristics profile is not specified, confirmed STRs are created according to the ATD receipts in the source location.

i Note

Only pull deployment is supported. This is valid for both MTO and MTS scenarios.

- Characteristics-based splitting of STRs and conversion to Transport Load Builder orders (Optional)
Transportation Planning/Vehicle Scheduling (TP/VS) can be used for splitting orders based on characteristics. In this special case, TP/VS uses STRs created by PP/DS deployment as input. These split STRs can be converted to stock transfer orders (or Transport Load Builder orders) as a next step.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 94

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0		X

SAP APO as add-on for SAP ERP

Table 95

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP liveCache 10.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.8 Procurement

The business process group Procurement contains the following business processes:

i Note

This feature is not part of the SAP APO add-on deployment option. It is currently only available in SAP APO as part of SAP SCM. Consider this essential point when you decide which of the two SAP APO deployments you want to use.

For more information about the scope of functionality and prerequisites of the two SAP APO deployments, see [SAP Advanced Planning and Optimization Overview \[page 14\]](#).

- [Purchase Order Processing for Service Parts \[page 91\]](#)
- [Release Processing for Service Parts \[page 91\]](#)

3.8.1 Purchase Order Processing for Service Parts

Description

You use this business process to send out purchase orders and collaborate with the external supplier on confirmations and ASNs. Purchase orders are generated as part of the distribution requirements planning run, sent to the supplier, and published in SAP Supply Network Collaboration (SAP SNC). Suppliers can monitor the purchase orders in SAP SNC, confirm them, enter or send advanced shipping notifications (ASNs), and ship the required parts.

The main business value is derived from the fact that the parts purchase orders can be communicated accurately and in real-time to the supplier, replacing older methods, such as paper-based, phone, fax, or e-mail. Suppliers can access SAP SNC using a web browser and are pro-actively alerted to exception situations. Suppliers can respond to the requirements quickly and accurately by using confirmations and ASNs.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 96

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	
SAP enhancement package 3 for SAP NetWeaver 7.4 product instance PI	X	
SAP SNC 7.14	X	

For more information about the installation of these components, see section System Landscape in this guide.

3.8.2 Release Processing for Service Parts

Description

You can use this business process to send out scheduling agreement releases and collaborate with the external supplier on confirmations and advanced shipping notifications (ASNs). The system generates scheduling agreement releases as part of the distribution requirements planning run, sends them to the supplier and

publishes them in SAP Supply Network Collaboration (SAP SNC). Suppliers can monitor the releases in SAP SNC, confirm them, enter or send ASNs and ship the required parts.

The main business value is derived from the fact that the releases can be communicated accurately and in real-time to the supplier, replacing older methods, such as paper-based, phone, fax, or e-mail. Suppliers can access the SAP SNC system through a web browser and are proactively alerted to exception situations. Suppliers can respond to the requirements quickly and accurately by means of confirmations and ASNs.

Technical System Landscape

The following software components are either mandatory or optional, as indicated below, for the technical implementation of this process.

SAP APO as part of SAP SCM

Table 97

Component	Mandatory	Optional
SAP enhancement package 4 for SAP SCM 7.0	X	
SAP enhancement package 8 for SAP ERP 6.0	X	
SAP enhancement package 3 for SAP NetWeaver 7.4 product instance PI	X	
SAP SNC 7.14	X	

For more information about the installation of these components, see section System Landscape in this guide.

4 Solution-Wide Topics

4.1 SAP Solution Manager

SAP provides the SAP Solution Manager as a highly recommended platform to efficiently support the implementation of your solution. Using SAP Solution Manager significantly accelerates the implementation process and helps you achieve your business goals. At the same time, SAP delivers Support Services based on the business scenarios designed and documented in SAP Solution Manager. Implementation content for your solution may further accelerate the implementation process. For information about availability of content specifically tailored to your solution, see SAP Service Marketplace at service.sap.com/solutionmanager.

Caution

In the installation or upgrade process, an SAP Solution Manager system is required to generate the SAP Solution Manager Key. Without the SAP Solution Manager Key, you cannot continue the installation process. The generation of the required key is implemented into the SAP Solution Manager as of Release 3.2 SP8. For details, see SAP Service Marketplace at service.sap.com/notes, SAP Note [811923](#).

4.2 Extended Implementation Content in SAP Solution Manager

In the business process repository of SAP Solution Manager, you can find high-quality business processes under **Solutions/Applications > Extended Implementation Content for Lines of Business**. These business processes are highly demanded by consultants and customers and provide optimized configuration information for various lines of business (for example, Finance, Sales, Manufacturing, and Supply Chain).

Extended implementation content for lines of business is characterized by carefully drafted configuration information, including the following:

- Configuration information is assigned to all business processes. This process-specific configuration information always contains a clear reference to additional basic configuration settings that are available for the required components of a process. Therefore, when you include a business process in a self-defined scenario, you can easily identify all relevant configuration settings that are relevant for your project.
- Configuration information that is specific for an optional process step is directly assigned to that process step. Therefore, when you remove an optional process step from your project because you do not need it, the corresponding configuration activities are also automatically excluded from your implementation project.

For your implementation project, this means:

- With the extended implementation content, the implementation of a business process is easier than before.
- You can adjust SAP business processes to your own enterprise-specific requirements.
- You can be sure to get all required configuration information if you include an SAP business process in a self-defined business scenario.

4.3 Service-Oriented Architecture (SOA)

SAP's delivery on SOA (service-oriented architecture) differs from the pure architectural concept of SOA in the delivery of ready-to-use enterprise services. Enterprise services are SAP-defined Web services which provide end-to-end business processes or individual business process steps that can be used to compose business scenarios while ensuring business integrity and ease of reuse. SAP designs and implements enterprise service interfaces to ensure semantic harmonization and business relevance. This section deals with the service-enablement of SAP Business Suite 7.

4.3.1 Service Enablement

The service enablement of SAP Business Suite consists of one or more of the following SAP components:

- **SAP Business Suite 7**

Enterprise services are an integral part of the software components of the SAP Business Suite applications. Enterprise services are the technical interfaces to the functionality available in the business application.

- **SAP NetWeaver PI 7.0 or higher**

SAP NetWeaver Process Integration (SAP NetWeaver PI) is an open integration and application platform that provides tools enabling you to set up a service-oriented architecture for business applications. You can use the platform for providing, discovering, and consuming services, integrating applications using the integration server, and managing business processes. Process integration is required in a runtime environment to consume enterprise services in a mediated scenario.

We recommend that you use the highest version of SAP NetWeaver Process Integration (PI). For more information, see SAP Note [1515223](#) and SAP Note [1388258](#).

i Note

Starting with SAP NetWeaver Process Integration (PI) 7.3, SAP provides a new installation option Advanced Adapter Engine Extended (AEX). Since AEX is based on AS Java alone, it is easier to install and maintain as well as it needs less memory and data storage. Therefore, AEX is a cost-saving option compared to a full installation of SAP NetWeaver PI. For more information about the AEX, enter the phrase *Advanced Adapter Engine Extended* in the documentation of SAP NetWeaver Process Integration at help.sap.com/nw73 and see SAP Note [1573180](#).

i Note

Asynchronous services that are enabled for *Web Services Reliable Messaging (WS-RM)* can be called in a point-to-point communication scenario. Otherwise asynchronous services can only be consumed in a mediated scenario.

- **Enterprise Services Repository**

The Enterprise Services Repository (ES Repository) is the central repository that contains the definition of all enterprise services and models. The ES Repository is shipped with SAP NetWeaver PI and with SAP NetWeaver Composition Environment (CE) starting with SAP NetWeaver PI 7.1 and with SAP NetWeaver CE 7.1. The Enterprise Services Repository is a design time environment that enables you to create and enhance enterprise service definitions.

i Note

In a SAP NetWeaver 7.0x landscape you use the Integration Repository to create and enhance enterprise service definitions.

- **Services Registry**

The Services Registry is shipped with SAP NetWeaver PI and SAP NetWeaver CE starting with SAP NetWeaver PI 7.1 and SAP NetWeaver CE 7.1. The Service Registry is only required for the publication of enterprise service end-points (Web services) that have been configured and activated in the SAP Business Suite.

- **SAP NetWeaver CE 7.1 or higher**

The SAP NetWeaver Composition Environment (SAP NetWeaver CE) provides a robust environment for the design and implementation of composite applications.

The design time environment of SAP NetWeaver CE can be used for the model-driven design and development of composite applications based on enterprise services. SAP NetWeaver CE offers the tools and the environment necessary for running composite applications fast and efficiently in a runtime environment.

4.3.2 Installation of the Service-Oriented Architecture (SOA)

The installation of service interfaces, and therefore the service enablement of SAP Business Suite, consists of one or more of the following phases:

- **Identification of software components and required business functions**

You use the technical data section of the enterprise service documentation to identify the following data for each enterprise service:

- the software component version with which the service was shipped
- the business function(s) required to be activated

- **Identification of technical usages** (relevant for SAP ERP only)

SAP Note [1818596](#) provides a mapping of business functions and software component versions to technical usages. You use this documentation to identify the required technical usages for your list of software component versions and business functions.

- **Installation of the software component ECC-SE** (relevant for SAP ERP only)

The software component ECC-SE contains service implementations for ECC (the ERP Central Component). This component must be explicitly installed if you intend to use enterprise services for ECC functionality. In this case you must also select the technical usage “ESA ECC-SE” during the enhancement package installation.

- **Selection and installation together with the other parts of the enhancement package**

In the enhancement package installation process you must select all the technical usages you have identified for service enablement together with the technical usages you identified for enhanced features in SAP Business Suite. The selected technical usages will install the corresponding software components that contain the enterprise services interfaces and implementations.

- **Import of ESR Content (aka XI Content)** (optional)

To install the content required for the enterprise service definitions you must select the technical usage “XI Content” in the enhancement package installation process. This downloads the content files for SAP NetWeaver PI 7.0 or higher. Unpack the ZIP file and copy the tpz files corresponding to your SAP NetWeaver

PI version into the import directory of your Integration Repository (for SAP NetWeaver PI 7.0x) or Enterprise Services Repository (for SAP NetWeaver ES Repository 7.1 or higher). Use the import function to import the content files into the corresponding repository (Integration Repository or Enterprise Services Repository). (Choose ► *Tools* ► *Import Design Objects* ►)

- **Services Registry** (optional)

The services registry is shipped starting with SAP NetWeaver PI 7.1 and CE 7.1. You must configure the services registry and then publish the enterprise services from the Business Suite application to the registry using the transaction `SOAMANAGER` in the backend.

For further information regarding the SAP NetWeaver PI, CE and ES Repository, refer to the corresponding SAP NetWeaver Installation and Master Guides.

4.3.3 Related Documentation

For more information about the service-oriented architecture (SOA), see the following information sources:

- SCN Community in the SAP Network at scn.sap.com/community/soa (registration required)
- SAP Note [1359215](#): Technical prerequisites for using enterprise services (relevant for *ERP* only)
- SAP note [838402](#): Problems with non-Unicode system landscapes

A Appendix

A.1 List of SAP Notes

The following table lists all SAP Notes mentioned in this Master Guide.

Table 98

SAP Note Number	Title
811923 	<i>Generating the SAP Solution Manager key</i>
836200 	<i>SAP NetWeaver 7.0: Importing process integration content</i>
915367 	<i>TDL: Automatic activation of the transaction data</i>
1115322 	<i>Restriction for Availability Check and Backorder Services</i>
1224284 	<i>Enterprise Services Bundles – Required Technical Usages and Business Functions</i> (This note lists business-related grouping of Enterprise Services.)
1345320 	<i>Business Objects Enterprise Integration to NetWeaver BI</i>
1353044 	<i>Installation Guide Crystal Report Adapter</i>
1371027 	<i>Missing TERM and GLOSSARY Texts in ERP60x Products</i>
1388258 	<i>Version Interoperability within the SAP Business Suite</i>
1515223 	<i>SAP NetWeaver Process Integration: Release Recommendation</i>
1686826 	<i>Help for installing an SCM optimizer version</i>
1574235 	<i>SAP NetWeaver 7.3: Import of ESR content</i>
1784479 	<i>Collective note for APO Planning Data Replication to SAP HANA (only relevant in case you use SAP HANA)</i>
1785008 	<i>Input help for APO InfoObject terminates on SAP HANA (only relevant in case you use SAP HANA)</i>
1769895 	<i>Error when activating APO planning structures on SAP (only relevant in case you use SAP HANA)</i>

A.2 Tools and Resources for Planning Your System Landscape

To plan your system landscape, you can use a few tools and resources that are available to you as SAP customer.

Tools

On SAP Service Marketplace, we provide the Business Process Repository (BPR) Viewer to look up descriptions of business scenarios and business processes.

In addition, there are tools in SAP Solution Manager that support you before, during, or after the installation of your SAP product or SAP enhancement package.

These tools include:

Table 99: Tools for Supporting Installations and Upgrades

Tool	Purpose
Solution Manager System Landscape (transaction SMSY)	To model and set up your system landscape
SAP Solution Manager Maintenance Optimizer (transaction DSWP)	To install support packages and SAP enhancement packages
Business Process Repository	To access configuration documentation, links to Customizing activities and master data transactions, specifically tailored for individual business processes, business scenarios, or implementable steps
Business Process Change Analyzer (available with SAP enhancement package 1 for SAP Solution Manager 7.0)	To analyze the effects of transports and support packages as well as activation logs for business functions

i Note

SAP recommends that you use SAP Solution Manager 7.1, SPS 10 or higher.

For more information, see SAP Support Portal at support.sap.com/solutionmanager.

SAP Solution Manager: Implementation Content

To get implementation content that supports you during the configuration of your business processes and business scenarios, you need the SAP Solution Manager add-on *Implementation Content* ST-ICO 150_700 (SP38).

Landscape Verification for SAP Solutions Manager

To verify and correct your system landscape SAP highly recommends that you use Landscape Verification 1.0 for SAP Solution Manager 7.0, which is an add-on to your SAP Solution Manager 7.0 system. This add-on allows you to identify and correct issues in your SAP Solution Manager landscape (transaction SMSY) before they cause problems, for example during a system update. Examples for errors are a missing connection to the System Landscape Directory or the wrong assignment of products to technical systems. For each type of error, a generic description for the solution is provided.

For more information about the landscape verification add-on, see SDN at www.sdn.sap.com/irj/sdn/alm?rid=/webcontent/uuid/70fc3790-7ec9-2d10-57ad-95b2d0d1185d.

Planning Guide – SAP Business Suite Landscape Implementation

To get an overview of the necessary steps for planning a system landscape, use the *Planning Guide - SAP Business Suite Landscape Implementation* on SAP Service Marketplace at service.sap.com/instguides under **SAP Business Suite Applications**. The guide also provides you with more information about the following:

- Examples of reference system landscapes
- Planning tools such as the business process repository
- Deployment options
- Typical implementation process

A.2.1 Business Process Repository (BPR) Viewer

The business process repository viewer (BPR viewer) is a tool on SAP Service Marketplace that allows you to preview the existing business scenarios, business processes that are shipped as part of SAP Solution Manager content. You can make use of the information in SAP Solution Manager during your implementation project by taking the pre-delivered implementation content as the starting point for your project scope. The implementation content is delivered with the following assigned information:

- Description of the business scenario, process, or implementable step
- Configuration content (Customizing activities or configuration documentation)

A.2.2 Using the BPR Viewer

Procedure

Calling Up the BPR Viewer

You can call up the BPR viewer directly using the Internet address implementationcontent.sap.com/bpr.

Working with the BPR Viewer

To call up information about business scenarios, business processes, or implementable steps, navigate the following paths in the BPR viewer:

Table 100

BPR Object	Location
Business scenario	Under <i>Solutions/Applications</i>
Business process	Under <i>Organizational Areas</i>
Implementable step	Under <i>Solutions/Applications</i>

For each business scenario, business process, or implementable step, you can select between different versions that depend on varying components and releases. To display the descriptions of a business scenario, business process, or implementable step, choose the *Documentation* tab page. To display configuration documentation, choose the *Configuration* tab page.

i Note

The BPR Viewer displays all descriptions, but only a selection of the configuration documentation. To view all configuration documentation, install and use SAP Solution Manager at your customer site.

A.3 Media List

You can download installation media from the SAP Software Download Center (SWDC) on the SAP Service Marketplace at support.sap.com/swdc.

i Note

Since the material numbers of DVDs, CDs, and archives may change when they are updated, we recommend that you visit the SWDC to make sure that you always use the most recent version of the indicated data carriers.

www.sap.com