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Operations Guide for SAP S/4HANA 2020

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1 Getting Started

→ Recommendation

This guide does not replace the daily operations handbook that we recommend you to create for your specific production operations.

About This Guide

This guide provides a starting point for managing your SAP applications and maintaining and running them optimally. It contains specific information for various tasks and lists the tools that you can use to implement them. This guide also provides references to the documentation required for these tasks, so you will also need to refer to other documentation, especially to the documentation *Administrating the ABAP Platform*.

To access it, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press `Enter`, and open the search result with that title.

ⓘ Note

You always find the most up-to-date version of this guide at the SAP Help Portal under https://help.sap.com/s4hana_op_2020.

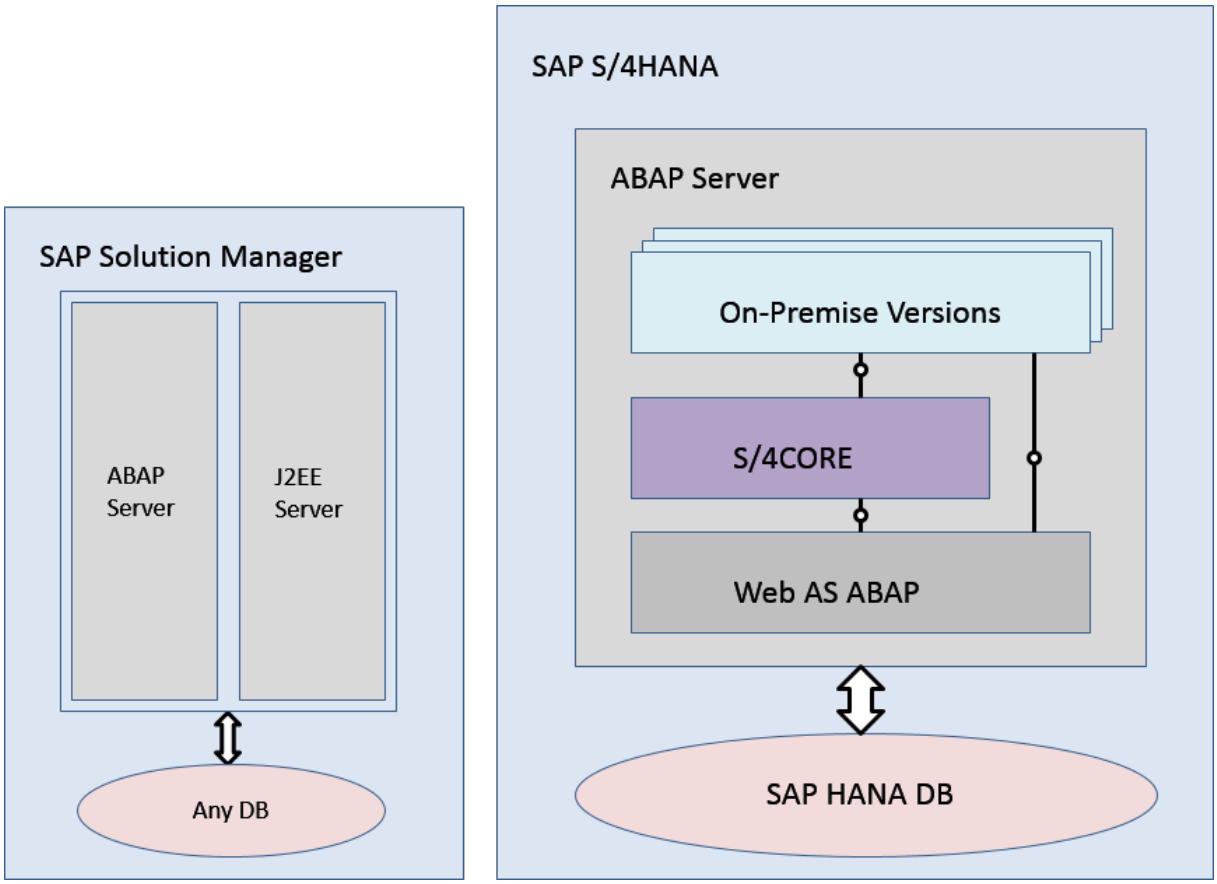
The first section of the guide contains generic information, valid for the entire on-premise edition of SAP S/4HANA. The sections under SAP S/4HANA Business Applications [page 21] contain information for specific functional areas.

2 SAP S/4HANA System Landscape Information

There are various ways of deploying SAP S/4HANA in your new or already existing system landscape. This section describes some examples.

Example: SAP S/4HANA New Installation

A new installation of SAP S/4HANA needs to run on the SAP HANA database. It is recommended to use the SAP Solution Manager, which can run on any database. This very simple landscape can be enhanced with the SAP cloud solutions and SAP Business Suite products.



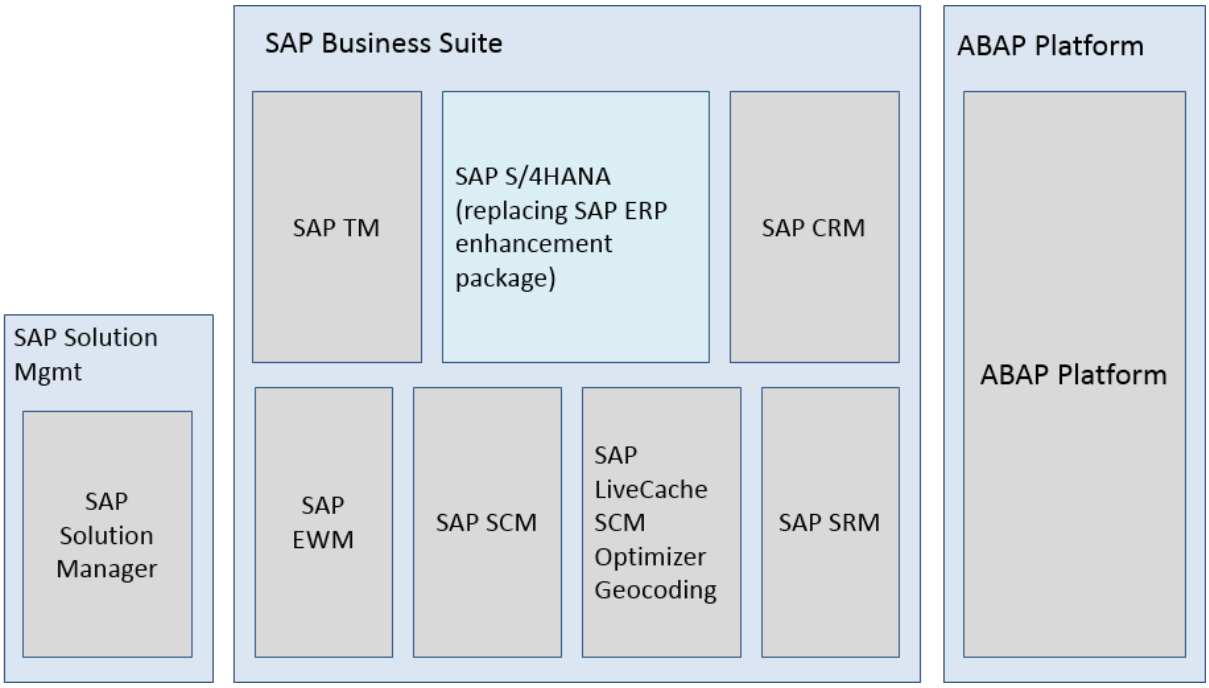
Simple SAP S/4HANA Deployment

Example: SAP S/4HANA in an SAP Business Suite Landscape

It is possible to integrate SAP S/4HANA into an existing SAP Business Suite landscape by replacing the SAP ERP enhancement package product with SAP S/4HANA. When performing this conversion in your system

landscape, you need to do some adaptations, for example you need to convert some of your existing business processes to the simplified SAP S/4HANA processes. Some of the SAP Business Suite processes are no longer supported, some have been changed, and there are also new processes. How to convert your existing processes to the SAP S/4HANA processes is described in the *Simplification Item Catalog*.

For more information about the *Simplification Item Catalog*, see the *Conversion Guide for SAP S/4HANA* at https://help.sap.com/s4hana_op_2020 ▶ *Implement* ▶ *Guides* ▶.



Example SAP Business Suite landscape with an embedded SAP S/4HANA system

More Information

For more information about SAP Fiori for SAP S/4HANA see SAP Note 2590653.

3 Monitoring

SAP provides you with an infrastructure to help your technical support consultants and system administrators effectively monitor your system landscape.

For more information about monitoring topics, go to https://help.sap.com/s4hana_op_2020, enter *Solution Monitoring* into the search bar, press Enter, and open the search result with that title.

For more information about monitoring with SAP Solution Manager, go to https://help.sap.com/s4hana_op_2020, enter *Connecting a Technical System to SAP Solution Manager* into the search bar, press Enter, and open the search result with that title.

3.1 Alert Monitoring with CCMS

SAP S/4HANA uses the standard ABAP Platform monitoring tools, including the Computing Center Management System (CCMS). The tool allows you to monitor your system landscape centrally.

Alerts form a central element of monitoring. They quickly and reliably report errors (such as values exceeding or falling below a particular threshold value or that an IT component has been inactive for a defined period of time). These alerts are displayed in the Alert Monitor of the CCMS.

You can also monitor your data archiving activities with the monitoring functions provided by the CCMS.

For more information about CCMS, the Alert Monitor, and monitoring of data archiving, go to https://help.sap.com/s4hana_op_2020, enter *Monitoring in the CCMS* into the search bar, press Enter, and open the search result with that title.

For more information about how to enable the auto-alert function of CCMS, see SAP Note 617547.

For more information about data archiving, see Data Archiving and Data Aging [page 13].

3.2 Trace and Log Files

Trace and log files are essential for analyzing problems. SAP S/4HANA uses the standard ABAP Platform tools for tracing and logging.

For more information about this topic, go to https://help.sap.com/s4hana_op_2020, enter *Application Log (BC-SRV-BAL)* into the search bar, press Enter, and open the search result with that title.

4 Management of SAP S/4HANA

SAP provides you with an infrastructure to help your technical support consultants and system administrators effectively manage all SAP components and complete all tasks related to technical administration and operation.

For more information about operational topics, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, and open the search result with that title.

4.1 Starting and Stopping

You use the SAP Management Console to stop and start SAP systems based on ABAP Platform, including SAP S/4HANA.

For more information on the SAP Management Console, go to https://help.sap.com/s4hana_op_2020, enter *Starting and Stopping SAP Systems Based on SAP NetWeaver* into the search bar, press Enter, and open the search result with that title.

4.2 Software Configuration

For information about how to do the configuration for SAP S/4HANA, see the guide *Getting Started With SAP S/4HANA* at the SAP Help Portal under https://help.sap.com/s4hana_op_2020 ▶ *Getting Started* ◀.

4.3 Output Management

SAP S/4HANA introduces a new style of output management. Note that other existing frameworks can be used as well, depending on the application.

You make settings for output control in Customizing under ▶ *Cross-Application Components* ▶ *Output Control* ◀.

This is an overview of the required technical setup.

Prerequisites for Output Control

- bgRFC configuration has been set up
- Storage system and category have been maintained

- BRFplus is active and usable
- Adobe Document Services is available (when using Adobe Forms)

bgRFC (Background Remote Function Call)

Output control uses a bgRFC to process output. Therefore, you need to maintain the bgRFC configuration. Otherwise, no output can be performed.

You can perform all the relevant steps in transaction `SBGRFCCONF`. One of the most important steps is defining a supervisor destination, as bgRFC doesn't work without it.

For more information, enter the keyword *bgRFC Configuration* at http://help.sap.com, and refer to SAP Note 2309399 and SAP Note 1616303.

Storage System and Category

Output control needs a defined storage system (content repository) to save the rendered form output as PDF.

To set up the storage system, choose the following navigation option:

SAP Menu	*SPRO* > *Cross-Application Components* > *Document Management* > *General Data* > *Settings for Storage Systems* > *Maintain Storage System*
Transaction Code	`/nOAC0`

You can set up the storage type which fits your needs, for example a SAP System Database, or a HTTP content server (such as fileserver, database, or external archive).

Once the storage system is available, you need to assign it to the predelivered storage category SOMU. To do so, choose the following navigation option:

SAP Menu	*SPRO* > *Cross-Application Components* > *Document Management* > *General Data* > *Settings for Storage Systems* > *Maintain Storage Category*
Transaction Code	`/nOACT`

Select category SOMU. For column *Document Area*, choose SOMU. For column *Content Repository*, choose the content repository you created in the previous step.

Business Rule Framework plus (BRFplus)

Output control uses BRFplus for the output parameter determination. Technically, BRFplus is based on WebDynpro applications. Therefore, you need to set up the according ICF services:

/sap/bc/webdynpro/sap/fdt_wd_workbench	FDT Workbench
/sap/bc/webdynpro/sap/fdt_wd_object_manager	FDT Object Manager
/sap/bc/webdynpro/sap/fdt_wd_catalog_browser	FDT Catalog Browser

For more information, enter the keyword *Active Services in SICF* at http://help.sap.com.

Once you've set up the services, download and install the required BRFplus applications from SAP Note 2248229.

Procedure:

1. Access transaction **BRF+**.
   If required, personalize your screen, and change the user mode from *Simple* to *Expert*.
2. On the *Business Rule Framework plus* screen, choose *Tools* > *XML Import*.
3. On the *Business Rule Framework plus – XML Import* screen, under *File and Transport Request*, browse for the local *.xml files you want to import. You can import the files one after the other.
4. In the *Customizing Request* field, enter an applicable Customizing Request ID.
5. Choose *Upload XML File*.
6. Choose *Back to Workbench*.

Adobe Document Services (ADS)

Applications in SAP S/4HANA ship default form templates implemented as PDF-based print forms with fragments.

They require ADS for rendering. ADS is available as cloud solution or on-premise solution.

The cloud solution is a service provided on SAP Cloud Platform. See SAP Note 2219598 for more information and links to the documentation for the new solution Form Service by Adobe.

For the on-premise solution, you need an AS Java installation (with **ADOBE** usage type) to run ADS.

ADS itself must have version 10.4 (1040.xxx) or higher. This version is delivered with SAP NetWeaver 7.3 EHP1 SP7 (and higher), NW 7.40 SP2 (and higher), and NW 7.50 (all SPs).

You do not necessarily need to use ADS, as output management also supports SAPscript and Smart Forms.

However, special customizing is necessary for these two form technologies, and restrictions apply. For more information, see SAP Notes 2292539 and 2294198.

Printer Setup

Printing is done using the spool. For more information, see the *SAP Printing Guide* at https://help.sap.com/s4hana_op_2020 *Use* > *Product Assistance* > *English* > *Enterprise Technology* > *ABAP Platform* > *Administrating the ABAP Platform* > *Administration Concepts and Tools* > *Solution Life Cycle Management*.

Output control uses the short name of the printer (for example **LP01**), as defined in transaction **SPAD**.

Limitations

- Printing using the spool is not available in release S4CORE 1.00 SP00. If this is the case, please upgrade to S4CORE 1.00 SP01.
- Currently, a PDF is always created for any kind of form.
  This has the following impact:
  - Previewing the document from the spool request is only possible when the device type is **PDF1** or **PDFUC**.
  - Using another device type can lead to alignment issues for SAPscript and Smart Forms.
- Frontend output is not supported, since the output is processed via bgRFC.

Related Information

SAP Note 2228611

4.4 Backup and Recovery

You need to back up your system landscape regularly to ensure that you can restore and recover it in case of failure.

To use an appropriate back up and restore method is one of the most important tasks of the system and database administrator. However, there is no general recommendation for such a method, since it depends on several factors, such as:

- Disaster recovery concept
- Maximum permissible downtime during restore
- Amount of data loss that can be tolerated
- Available budget

For more information about backup and recovery, see:

- Go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Solution Life Cycle Management* > *Backup and Recovery*.
- *SAP HANA Technical Operations Manual* at the SAP Help Portal under http://help.sap.com/hana_platform > *System Administration*

4.5 Load Balancing

SAP S/4HANA uses the standard ABAP Platform functions for load balancing.

For more information about this topic, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, and open the search result with that title.

4.6 Data Archiving and Data Aging

Data Archiving

You can use the data archiving functions to archive any completed business transactions that are no longer relevant for your daily operations, and so significantly reduce the load on the database. SAP S/4HANA uses the functions for archiving provided by ABAP Platform.

For more information about data archiving, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Solution Life Cycle Management*.

For more information about monitoring of data archiving, see Alert Monitoring with CCMS [page 9].

Data Aging

Data aging offers you the option of moving large amounts of data within a database so as to gain more working memory.

You use the relevant SAP application to move data from the current area to the historical area. You control the move by specifying a data temperature for the data. The move influences the visibility when data is accessed. This means that you can perform queries of large amounts of data in a much shorter time.

For more information about data aging (including the prerequisites for enabling it), go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Solution Life Cycle Management*.

For more information about specific SAP S/4HANA data aging objects, see Efficient Logistics and Order Fulfillment [page 39].

5 Business Continuity and High Availability

The term *business continuity* covers all activities performed by system administrators to ensure that critical business functions are available to system users. Strategies for high availability are a subset of business continuity activities, but business continuity is not limited to high availability. Other activities that relate to business continuity include:

- System backup and archiving
- System updates with minimum downtime

SAP S/4HANA uses the standard ABAP Platform functions for high availability and business continuity.

For more information about these topics, see:

- Go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, and open the search result with that title.
- *SAP HANA Technical Operations Manual* at the SAP Help Portal under http://help.sap.com/hana_platform *System Administration*

6 User Management

SAP S/4HANA generally relies on the user management and authentication mechanisms provided with ABAP Platform, in particular the Application Server ABAP and the SAP HANA Platform. Therefore, the security recommendations and guidelines for user administration and authentication as described in the Application Server ABAP Security Guide and SAP HANA Platform documentation apply.

For more information, see:

- Go to https://help.sap.com/s4hana_op_2020, enter *Application Server ABAP Security Guide* into the search bar, press `Enter`, and open the search result with that title.
- *SAP HANA Security Guide* at the SAP Help Portal under http://help.sap.com/hana_platform/ ▶ *Implement* ▶ *Security* ▶

In addition to these guidelines, we include information about user administration and authentication that specifically applies to SAP S/4HANA in the Security Guide for SAP S/4HANA at the SAP Help Portal under https://help.sap.com/s4hana_op_2020 ▶ *Implement* ▶ *Guides* ▶.

7 Software Logistics and Change Management

The tools and processes in *Software Logistics* help you to manage the system landscape in all life cycle phases. Besides initial implementation of an application, the tools also support on-going system optimization and adaptation to evolving demands, as well as implementing additional functions.

> **Note**
>
> Some software logistics tools are delivered and regularly updated with the **Software Logistics Toolset**. For more information about these tools, see the documentation on the SAP Help Portal under http://help.sap.com/sltoolset.

Software Change Management standardizes and automates the distribution of software in system landscapes.

For more information, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Solution Life Cycle Management* > *Software Logistics*.

7.1 Change and Transport Management

SAP S/4HANA uses the ABAP Platform tool **Change and Transport System** (CTS) to organize development projects in ABAP Workbench and customizing, and to then transport the changes between the SAP systems in your system landscape. In addition to ABAP objects, you can transport non-ABAP objects and non-SAP applications in your system landscape.

For more information about the CTS tool, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, and open the search result with that title.

7.2 Support Package and Patch Implementation

We recommend that you implement Support Package Stacks (SP stacks), which are sets of support packages and patches for a specific product version that must be used in a specific combination.

You can find detailed information about the availability of SP-Stacks for SAP S/4HANA at the SAP Support Portal under support.sap.com/sp-stacks. Check the corresponding Release and Information Notes (RIN) before you apply any support packages or patches of the selected SP-Stack. The RIN for SAP S/4HANA 1610 is SAP Note 2346431. See also the Support Package Levels for SAP S/4HANA in SAP Note 2236608.

For more information about the implementation of support packages, see information on the SAP Support Portal under support.sap.com/patches > *SAP Support Packages*.

For more information about the tools for implementing patches, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Solution Life Cycle Management* > *Software Logistics*.

> **Note**
>
> Support package stack (SPS) is equivalent to feature package stack (FPS). The term **feature** indicates that new features are delivered with the FPS, not just bug fixes as with support package stacks.

7.3 Release and Upgrade Management

Corrections for SAP S/4HANA are available in support packages.

8 Troubleshooting

For more information about troubleshooting for systems based on ABAP Platform, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Solution Life Cycle Management*.

9 Support Desk Management

You can set up problem resolution procedures tailored to your requirements. The procedure should integrate your business users, internal support personnel, partners and SAP support.

Remote Support Setup

If you want to use SAP remote services (for example, SAP EarlyWatch or Remote Consulting), or if you would like to permit an SAP support consultant to work directly in your system to make a more precise problem diagnosis, then you need to set up a remote service connection.

For more information about setting up remote service connections to SAP, see:

- SAP Support Portal under support.sap.com/access-support
- Go to https://help.sap.com/s4hana_op_2020, enter *Setting Up Service Connections for SAP Remote Support* into the search bar, press Enter, and open the search result with that title.

Problem Message Handover

SAP S/4HANA uses the functions of the SAP Solution Manager to create internal support messages and to forward them to SAP.

For more information, see the SAP Help Portal under http://help.sap.com/solutionmanager/ *Use* > *Application Help* > *SAP Engagement and Service Delivery*.

To send problem messages to SAP, use the relevant application component in the SAP application component hierarchy.

10 SAP S/4HANA Business Applications

This section of the Operations Guide for SAP S/4HANA contains specific operations information for the functionality included in SAP S/4HANA Enterprise Management.

10.1 Finance

This section of the Operations Guide for SAP S/4HANA contains information about operation tasks specific to Finance.

Archiving and Data Aging

Archiving

For information about archiving in Finance, see *Enterprise Technology* at the SAP Help Portal under https://help.sap.com/s4hana_op_2020 ▶ *Product Assistance* ▶.

Data Aging

To use Data Aging, proceed as follows:

1. Activate Data Aging by entering the profile parameter `abap/data_aging` in the database.
2. Activate the Data Aging business function `DAAG_DATA_AGING` using the switch framework (transaction `SWF5`).
3. Partition the database tables for aging (transaction `DAGPTM`).
4. Activate aging object `FI_DOCUMNT`.
5. Maintain the residence time in Customizing for data object `FI_DOCUMENT` according to company code, account types, and document types.

For more information, see also Data Archiving and Data Aging [page 13]

10.1.1 Specific Monitoring Tools for Settlement Management

This section of the Operations Guide for SAP S/4HANA contains information about monitoring tools specific to Settlement Management.

Condition Contract Management

In Settlement Management, you can create remuneration settlements by using the Post Processing Framework. Depending on the Customizing settings, remuneration settlements are created:

- Automatically in a synchronous or an asynchronous way when a document is saved
- Manually when the *Selection and Processing of Actions* report is run (transaction SPPFP)

The relevant Customizing settings are located in Customizing for *Logistics - General* under *Settlement Management* > *Condition Contract Management* > *Condition Contract* > *Define and Configure Actions*.

The processing status is tracked in the log of the Post Processing Framework.

Selecting Actions with Processing Errors

1. Go to transaction `WCB_SPPFP`.
2. Set the processing time to initial and then select action status **2**.
   After execution, the system displays all actions with processing errors.
3. Use the processing log to analyze the cause of the errors.
   To select actions that have not been processed yet, select action status **0**. By adding the creation date as an additional search parameter, you can find successful actions that have not been processed for a long period of time.

RFC Destination to connect to SAP Commissions

1. Create an RFC Destination of type *G*.
2. Set the host to connect to the SAP Commissions service.
   Ensure that the root points to the service end point, fetching the `CommissionPaymentService.svc/CommissionPayments` entity set.
3. Assign the user ID and password to connect the remote server.
   The SSL should be active with the correct SSL certificate assigned.
4. In Customizing, use *Logistics-General* > *Settlement Management* > *Personnel Settlement Integration* > *Basic Settings for Integration with SAP Commissions* and assign the RFC destination created above.

If the settings in the S/4HANA client proxy configuration for HTTP Client are enabled, then it isalso required to maintain the SAP Commissions domain in the *Filter Entries* field.

10.1.2 Monitoring of the SAP S/4HANA Financial Closing cockpit

This section of the Operations Guide for S/4HANA contains information specific to the monitoring of the SAP S/4HANA Financial Closing cockpit.

Trace and Log Files

Logging and tracing for ABAP components is done using transaction `SLG1`. An application log comprises a log header and a set of messages. The log header contains general data (type, created by/on, etc.). Each log in the database also has the attributes *Object* and *Sub-object*. These attributes describe the application which wrote the log, and classify this application. The *SAP S/4HANA Financial Closing cockpit* uses the following log object and sub-objects:

- Log object
  - FCC (Financial Closing cockpit Log)
- Sub-objects
  - MIG (Financial Closing cockpit Upgrade Messages)
  - SOT (Financial Closing cockpit Schedule Overdue Tasks Messages)
  - STD (Financial Closing cockpit Standard Messages)

10.2 Manufacturing

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Manufacturing.

10.2.1 Production Planning

This section contains information for Production Planning valid for Material Requirements Planning.

10.2.1.1 Material Requirements Planning

This section describes specific operational details that are valid for Material Requirements Planning.

Report for Processing MRP Records

You use the report PPH_SETUP_MRPRECORDS to create and correct MRP records for a given set of plants. It reads material master data such as the MRP type and creates a corresponding MRP record.

You can use this report to create MRP records that are to be used for operative planning. If you want to create MRP records to be used for simulative planning (long-term planning), a second report is available: PPH_SETUP_MRPRECORDS_SIMU.

Prerequisites

The materials in the plant must be relevant for MRP. That is, you must have maintained the MRP views in the material master records of the materials and have set a suitable MRP type.

Features

By selecting the *Regenerative (w. BOM Explosion)* checkbox, you can start the report in regenerative mode meaning that the system automatically sets the net change flag and the BOM explosion flag for each material. Alternatively, you can use the report as a consistency check to update the MRP records - in this case you do not set the *Regenerative (w. BOM Explosion)* checkbox.

Clean Up Total Requirements

Before you can carry out the planning run using MRP Live, you have to make sure that you have no total requirements in your system. Proceed as described below to deal with your total customer requirements and your total dependent requirements.

Procedure

Procedure for dealing with total customer requirements

Originally, there were two alternative ways of transferring customer requirements from Sales and Distribution (SD) to Material Requirements Planning (MRP): Individual requirements and total requirements. Individual requirements are stored in table VBBE, whereas total requirements are stored in table VBBS. Table VBBS stores the total demand for a material, plant, and requirement date. This causes a massive amount of data to be loaded, stored, and aggregated on the database at the same time which, on the one hand, speeds up the demand reading process. However, on the other hand, the data involved is locked for further processing; different sales orders requiring the same material at the same date cannot be posted in parallel, for example. When using an in-memory database such as SAP HANA to execute your planning run, however, total requirements are no longer necessary. Your customer demand is aggregated individually at runtime — without having a negative impact on the performance of your MRP.

1. Check whether you have total customer requirements in the system. Use the data browser (transaction SE16) for table VBBS and check the number of entries in that table.
   - If there are no entries in table , you have no total customer requirements and therefore you do not have a problem. In this case, proceed with step 7.
   - If you have entries in this table, you have total customer requirements and you should proceed with step 2.
2. Check whether you can safely use individual customer requirements. For example, check whether you have custom reports that evaluate table VBBS. These reports should read table VBBE instead.

3. Check the ATP (Available-to-Promise) checking group in Customizing. The ATP checking group defines whether total or individual requirements are created for sales orders.
    - In Customizing for *Sales and Distribution*, under *Basic Functions* > *Availability Check And Transfer of Requirements* > *Availability Check* > *Availability Check with ATP Logic or Against Planning* > *Define Checking Groups* determine the ATP checking groups with total requirements; an ATP checking group with *B* (Totals records per day) in column *TotalSales* or *TotDlvReqs* creates total requirements. If no checking group exists with this entry, the entries you found in table VBBS are meaningless. In this case, proceed with step 7.
    - If such a checking group exists, either delete the ATP checking groups that create total requirements or change their *TotalSales* and *TotDlvReqs* attributes in Customizing from *B* (Totals records per day) to *A* (Single records). This prevents the usage of incorrect ATP checking groups in future. Proceed with step 4.
4. Create and execute the ABAP report `Z_MATERIALS_W_COLLECTIVE_REQS` (transaction SE38) to determine which materials use the ATP checking group that creates total customer requirements. This report finds all the materials with the ATP checking group *01* that creates total requirements. Note that if you have different checking groups that create total requirements, you have to adjust the ABAP report accordingly:

    ```
    data:
      ls_marc type marc.
    select matnr werks from marc into (ls_marc-matnr, ls_marc-werks) where mtvfp
    = '01'.
      write: / ls_marc-matnr, ls_marc-werks.
    ENDSELECT.
    ```

    - If the system does not find any materials, your VBBS records are meaningless. In this case, proceed with step 7.
    - If the system finds materials for which the ATP checking group is *01* , proceed with step 5.
5. For every material found by the report in step 4, open the *MRP 3 View* of the *Material Master* in change mode and select an ATP checking group that creates individual requirements.
6. For each material, execute report `SDRQCR21`, *Recovery of Sales and Delivery Requirements* to recreate the customer requirements.
7. Check whether you have implemented any of the methods of the BAdI `MD_CHANGE_MRP_DATA`. If you have and if the BAdI only adds data to MRP evaluations such as MD04, re-implement your BAdI implementations in BAdI `MD_ADD_ELEMENTS`.

    > **Note**
    >
    > The BAdI `MD_ADD_ELEMENTS` is processed in MRP evaluations such as `MD04` or `MD07` and is processed in the classic MRP transactions `MD01` or `MD02` or if you have set the *Plan in Classic MRP* indicator for the material in the report *Include Material in Classic MRP* (transaction `MD_MRP_FORCE_CLASSIC`). Check which materials require the processing of a BAdI during the MRP run and set the *Plan in Classic MRP* indicator for these materials.

Procedure for dealing with total dependent requirements

1. Now check whether you have a problem with total dependent requirements. Use the data browser (transaction SE16) for table `RQIT` and check the number of entries in that table.
    - If there are no entries in table `RQIT`, you have no total dependent requirements and therefore you do not have a problem. In this case, proceed with step 5.

- If entries exist in this table, you have total dependent requirements and you should proceed with step 2.

2. Create a planning file entry for every material in table `RQID` (transaction `MD20`) and set the *Net change planning* and the *Re-explode BOM* indicators.
3. If you work with repetitive manufacturing, you have to check and, if necessary, switch off the *Aggregate reqmts* indicator in the repetitive manufacturing profiles in Customizing for *Production*. In combination with the collective requirements indicator in the material master, this indicator determines whether dependent requirements are grouped to collective requirements on a daily basis.

   In Customizing for Production, under *Repetitive Manufacturing* > *Control Data* > *Define Repetitive Manufacturing Profiles*, check the *Control data 2* tab for each profile to see whether the *Aggregate reqmts* checkbox is selected. Remove the selection, if necessary.
4. Execute an MRP run which re-explodes all BOMs for the affected materials and creates individual dependent requirements.
5. Create number range *PP* for planned orders, purchase requisitions, and reservations.

Correct the Secondary Persistence of Sales Documents Relevant to ATP

You use the report `ATP_VBBE_CONSISTENCY` if there are too many, too few, or incorrect sales documents (quotation, sales order, scheduling agreement) or delivery requirements in your system. You can detect or check this in the stock/requirements list. These inconsistencies may trigger follow-on errors in planning, procurement (production, purchase order) or document processing (availability check).

This report reads all the sales orders and deliveries with open quantities and compares this information with the available entries on the database. By selecting the *Simulation Mode* checkbox, you can perform this report in simulation. If you do not start the report in simulation mode, all inconsistencies found will be corrected automatically.

10.2.1.2 Production Planning and Detailed Scheduling

List of main monitoring transactions:

Transaction	Description
SMQ1	qRFC Monitor (Outbound Queue)
SMQ2	qRFC Monitor (Inbound Queue)
/SAPAPO/CCR	Comparison and Conciliation Report
/SAPAPO/CPP	CIF Post Processing
/SAPAPO/CC	Core Interface Cockpit
/SAPAPO/OM17	Data Reconciliation

Monitoring of HANA integrated liveCache

Following reports are used to check the liveCache integration and functionality, or to check and to reorganize the liveCache data.

- Transaction /sapapo/om13: It is a basic check of the liveCache configuration and of the most important liveCache relevant settings. The "Versions" section displays the version of the currently installed ABAP Support Package, the current version of the HANA LCAPPS PlugIn ("Current LCA Version") and the version of the installed SQLDBC.
  The *Checks* should be run once after a system installation/upgrade/copy/migration and the alert-marked problems (red traffic light) should be resolved immediately. Click on the corresponding information buttons to display documentation on how to resolve an issue.
- Transaction /SAPAPO/OM03: It provides a brief functional check (should be run once after a system installation/upgrade/copy/migration). Note that this transaction doesn't change or even clean the main window area, but uses only the status-line at the bottom for its output.
- Transaction /SAPAPO/OM17: It provides a collection of consistency checks and repair mechanisms for mainly master data (to be run once in a while, or more frequently for data with occasional new inconsistencies until the root cause isn't found). This transaction checks the consistency of master data in liveCache by comparing this data with the corresponding data stored in SQL tables of SAP HANA. This transaction also provides an option to resolve master data inconsistencies between liveCache objects and HANA database tables.

10.2.2 Project Manufacturing Management and Optimization

This section contains information on Project Manufacturing and Optimization.

List of main transactions

Transaction	Description
PMMO_PEGGING	Execute Pegging Run We recommend you run this transaction in batch mode.
PMMO_DISTRIBUTION	Execute Distribution Run We recommend you run this transaction in batch mode.
PMMO_PEGLOG	Display Application Log for Pegging Run
PMMO_DISLOG	Display Application Log for Distribution Run
PMMO_PEG_CALIBRATION	Execute Calibration for Pegging Run
PMMO_DIS_CALIBRATION	Execute Calibration for Distribution Run
PMMO_DISPLAY_CALIB	Display of Calibration Results
PMMO_RTM	Display Runtime Measurements
PMMO_TMPTAB_CLEANER	Delete Records in PMMO Temporary Tables

Transaction	Description
SLG1	Analyze Application Log Make the following entries: • Object: PMMO_MM • Subobject: GOODS_MOVEMENT

10.3 Sales

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to *Sales*.

10.3.1 Order and Contract Management

10.3.1.1 Sales Contract Management

10.3.1.1.1 Monitoring Tools

This section of the Operations Guide for SAP S/4HANA contains information about monitoring tools specific to *Sales Contract Management*.

Global Trade Management

List of Tools

Tool	Transaction	Use
Trading Contract Synchronization application log	SLG1	• Display logs for queues (in the *External Identification* field, choose object WB2_SYNC)

Tool	Transaction	Use
qRFC Monitor	SMQ1	• Select erroneous queues • Restart queues after errors have been fixed

→ Recommendation

We recommend that you do not to use any time restrictions. You can select the erroneous queues in transaction SMQ1 by using generic search parameters.

Generic Search Parameters for Queue Names

Type of Queue	Search Parameter
Completely generic	WB2_TC_*
Generic for purchase side	WB2_TC_M*
Generic for sales side	WB2_TC_V*
Single document on purchase side	WB2_TC_M_[**XXX**] where **XXX** represents the document number (leading zeros have to be considered)
Single document on sales side	WB2_TC_V_[**XXX**] where **XXX** represents the document number (leading zeros have to be considered)

10.3.1.2 Claims, Returns, and Refund Management

10.3.1.2.1 Manage Customer Returns

To use the *Manage Customer Returns* app to process customer returns, you must use the *Accelerated Customer Returns (BKP)* scope item. For more information, see https://rapid.sap.com/bp/scopeitems/BKP.

Ensure that you have accelerated customer returns (order type *CBAR*) configured. Other return types, such as lean returns or consignment returns, are not compatible with the *Manage Customer Returns* app.

10.4 Service

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to *Service*.

10.4.1 Service Operations and Processes

10.4.1.1 Detailed Monitoring and Tools for Problem and Performance Analysis

This section describes the detailed monitoring and tools for problem and performance analysis.

10.4.1.1.1 Log Objects and Subobjects for Application Server ABAP

You can use transaction `SLG1` to analyze object and subobject logs for ABAP based components. To see a complete list of the logs available for S/4HANA Service, enter **`CRM*`** or **`CRMS4*`** in the *Object* field.

Log Objects and Subobjects

Object	Object Text	Grouping	Subgrouping
CRM_ACE	None	Basic Functions	None
CRM_BSP	Blueprint Applications	Basic Functions	None
CRM_DATAARCHIVING	Data Archiving	Basic Functions	None
CRM_DOCUMENT	One Order Document	Basic Functions	None
CRM_EEWA	None	Basic Functions	None
CRM_LOG	None	Basic Functions	None

Object	Object Text	Grouping	Subgrouping
CRM_MPK	Measuring Point Kernel	Basic Functions	None
CRM_UI_PFCG_ROLE	UI PFCG Role	Basic Functions	None
CRMWST	None	Basic Functions	None
CRMXIF	External Interfaces	Basic Functions	None
CRM_CLM	Call List Management	Interaction Center	None
CRM_IC_EVENT	None	Interaction Center	None
CRM_SMF	Service Management Framework	Interaction Center	None
CRM_BP_ASS	Rule-Based Assignment of Employees Responsible	Master Data	None
CRM_BUPA	Business Partner	Master Data	None
CRM_BUPA_HIERARCHY	Business Partner Hierarchy	Master Data	None
CRM_MDM_LOG	None	Master Data	None
CRM_PRODUCT_MAINTAIN	Maintain Product Master Data	Master Data	None
CRM_PRP	Partner/Product Selections	Master Data	None
CRM_CAT	Multilevel Categorization	Service	None
CRM_DWP	Dispatchers Workplace	Service	None
CRM_MASS_CP	None	Service	None
CRM_CC_PT	None	None	None
CRMS4_BSP	Business Solution Portfolio	Service	None
CRMS4_SC	Service Contract Management	Service	None
CRMS4_PS_TOOLS	None	None	None
CRMS4_PS_SOC	None	None	None
CRMS4_PS_NET_RFC	None	None	None
CRMS4_PS_BRFP	None	None	None
CRMS4_PS_ACC	None	None	None

10.4.1.1.2 Monitoring Workflow Events for Business Solution Portfolios

Business Solution Portfolios uses SAP business workflow events to create and update business solution portfolios automatically.

You can use the following tools to monitor the SAP business workflow events, and to find and analyze any problems related to such events:

- *Event Queue Administration* (transaction **SWEQADM**)
- *Event Queue Brower* (transaction **SWEQBROWSER**)

The following SAP business workflow events apply to business solution portfolios:

Object Types and Events to Create Business Solution Portfolios Automatically

Object Category	Object Type	Business Workflow Event	Receiver Type
Class	CL_CRMS4_BSP_WF_EVENT	ONEORDER_CREATED	BEH

Object Types and Events to Remove Items Automatically

Object Category	Object Type	SAP Business Workflow Event	Receiver Type
CL ABAP Class	CL_CRMS4_SERVICE_CONTRACT_WF	ITEMS_DELETED	BEH_BSP
CL ABAP Class	CL_CRMS4_SERVICE_ORDER_WF	ITEMS_DELETED	BEH_BSP
CL ABAP Class	CL_CRMS4_SUBSCR_CONTRACT_WF	ITEMS_DELETED	BEH_BSP

Object Types and Events to Update Renewed Service Contract Items Automatically

Object Category	Object Type	SAP Business Workflow Event	Receiver Type
CL ABAP Class	CL_CRMS4_SERVICE_CONTRACT_WF	ITEMS_CREATED	BEH_BSP
CL ABAP Class	CL_CRMS4_SUBSCR_CONTRACT_WF	ITEMS_CREATED	BEH_BSP

10.4.1.1.3 Interaction Center Analysis Tools

This section describes the analysis tools specific to the interaction center.

10.4.1.1.3.1 E-Mail Response Management System

For SAPconnect alert monitor and trace, use transaction SCOT.

For workflow log and monitor, use transaction SWI1.

For trace information regarding individual e-mails, use the E-Mail Response Management System workbench. Sign in to S/4HANA Service and access the workbench in the `Service Professional` role using either of the following steps:

- Choose *Service Operations* to navigate to the *E-Mails Status: Overview* page.
- Choose *Service Operations* to navigate to the *E-Mail Workbench* page.

To view the e-mail response trace, use transaction `CRM_ERMS_LOGGING`.

10.4.1.1.3.2 Business Communication Broker and Integrated Communication Interface (BCB/ICI)

Trace View

To view the `BCB trace`, use transaction `CRM_ICI_TRACE`.

Trace Level Adjustment

The default is OFF. You can increase the trace level on an individual user basis. To increase the trace level:

1. Choose *System → User Profile → Own Data*.
2. On the *Parameters* tab page, enter `CRM_ICI_TRACELEVEL` as the parameter ID and `XXX` as the parameter value.
3. Save.

10.4.1.1.3.3 Call List Log

You can access the call list log using transaction `SLG1`and object `CRM_CLM`.

10.4.1.1.3.4 SAP Business Workflow

To view the SAP Business Workflow log, use transaction `SWDP`.

10.4.1.2 Administration Tools for Interaction Center

Transaction/Tool	Description	Requirements
E-Mail Response Management System (ERMS) administration	Maintain mail forms: • Sign in to S/4HANA Service using business role `Service Professional`. • Choose *Service Operations* to navigate to the *Mail Forms* page. Maintain rule policies: • Sign in toS/4HANA Service using business role `Service Professional`. • Choose *Service Operations* to navigate to the *Rule Policies* page. Maintain categorization schemas: • Sign in to S/4HANA Service using business role `Service Professional`. • Choose *Home* to navigate to the *Categorization Schemas* page.	RFC loopback node is set up using SAPconnect, and inbound distribution is specified under SAP Business Workflow
SAPconnect (transaction SCOT)	SAPconnect administration required for ERMS	None
SAP Business Workflow (transaction SO28)	Inbound distribution specified for ERMS	None

10.4.1.3 System Copy for Interaction Center

The following configuration needs to be revisited after the system copy:

- Computer Telephony Integration (CTI)

Adjust the RFC configuration for CTI (ICI or SAPphone) according to the new system landscape:

- ICI
  After setting up the connection to the communication software in transaction SM59, assign the newly configured RFC destination to your communication management software system ID in transaction CRMM_BCB_ADM.
- SAPphone
  After setting up the connection to the communication software in transaction SM59, create a telephony server with the newly created RFC destination in transaction SPHB.
  For more information about configuring communication management software, see SAP Solution Manager.

- Transaction Launcher
  - Adjust the logical systems and URLs for the transaction launcher in the new system and configure transaction launcher in Customizing for Service, under *Interaction Center WebClient* > *Basic Functions* > *Transaction Launcher* > *Configure Transaction Launcher (Wizard)*.

10.4.1.4 Periodic Tasks for Interaction Center

You should run all jobs, unless otherwise specified, at times of very low system activity, so as not to affect performance or otherwise disrupt your daily operations. All jobs, unless otherwise specified, can be restarted.

10.4.1.4.1 Scheduled Periodic Tasks

Program / Task	Recommended Frequency	Description
Upload interaction statistics (transaction CRM_CIC_CTI_LOAD)	Daily	Report used to upload statistics data from the communication system (for example, CTI server).
Compile knowledge bases (BSP application CRM_EI_CMP_ADMN)	Not less than 5 min	You set the frequency in the *Indexes* application. You can set the frequency individually for different knowledge bases. This is an administrative background job. It does not influence system availability, but does influence data availability. If, for some reason, the job does not execute, run a full compilation.

10.4.1.4.2 Required Manual Periodic Tasks

Task or Transaction	Description	Recommended Frequency
Delete Reporting Data (CRMD_ERMS_DEL_RDATA)	Removes e-mails from the system. To ensure that non processed items re-main in the system, be sure to select *Extracted Data Only*.	Daily
Compilation	None	If regular delta compilation is scheduled in the *Indexes* application, no manual task is required. This task does not influence system availability, but does influence data availability.

10.4.1.5 Troubleshooting for Interaction Center

This section describes the troubleshooting for the interaction center.

10.4.1.5.1 E-Mail

Technically, e-mail can be handled in SAP S/4HANA Service in the following ways:

- Agent inbox
  To use the agent inbox, complete the following steps:
  - In Customizing for Service, choose *Interaction Center WebClient* > *Basic Functions* > *Communication Channels* > *Define E-Mail Profiles*.
    Enter the profile ID and choose *INBOX* as the e-mail provider.
  - Configure the agent inbox in Customizing for Service under *Interaction Center WebClient* > *Agent Inbox*.
  - Make sure that SAPconnect and SAPoffice are set up correctly.
- Integrated Communication Interface (ICI) / Business Communication Broker (BCB)

To use ICI/BCB, go to Customizing for Service and choose *Interaction Center WebClient* > *Basic Functions* > *Communication Channels* > *Define E-Mail Profiles*.

Enter the profile ID and choose *ICI* as the e-mail provider.

10.4.1.5.2 Simplified ABAP Messaging (SAM)

For more information about troubleshooting, see SAP Note 828884.

10.4.1.5.3 Mandatory SICF Services

For more information about the SICF services that are required for IC WebClient, see SAP Note 1295006.

10.5 Sourcing and Procurement

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Sourcing and Procurement.

10.5.1 Supplier Information and Master Data

This section contains information for Supplier Information and Master Data.

10.5.2 Specific Monitoring Information for Supplier Information and Master Data

Monitoring is essential to running and managing SAP technology. This section provides information about monitoring specifically for *Supplier Information and Master Data*. For more generic information, see Monitoring [page 9].

List of Relevant Transactions

Transaction	Description
SBGRFCMON	Background remote function calls (bgRFCs) are used in Supplier Evaluation to enable asynchronous creation of documents. You can monitor the calls using transaction SBGRFCMON.

Transaction	Description

SLG1	Logging and tracing for ABAP components are done using transaction SLG1. The objects and subobjects of Supplier Information and Master Data have the namespace /SRMSMC/*. These are:
	• SLC: Supplier Evaluation (/SRMSMC/EVAL)
	  • SLC: Group-Based Evaluation (/SRMSMC/EVAL_GRP_BSD)
	  • SLC: Background Processes in Supplier Evaluation (/SRMSMC/EVAL_BGRD_PR)
	• SLC Tasks (Buy Side) (SRMSMC/TSK_BUY)

10.5.3 Scheduled Periodic Tasks

You have to schedule the reports listed below as regular jobs:

List of Periodic Tasks

Program Name / Task	Recommended Frequency
SAPConnect: Start Send Process (RSCONN01)	In short intervals; for example, once in 5 minutes
E-Mail Reminders for Pending Evaluation Responses (/SRMSMC/REM_RESP)	Daily
E-Mail Reminders for Pending Evaluation Responses (/SRMSMC/REM_RESP)	Daily
E-Mail Reminders for Tasks (/SRMSMC/REM_TSK)	Daily
Creation of Evaluation Responses (R_SEV_CREA_RESPONSES)	Does not need to be scheduled periodically; can be started manually if follow-on documents of evaluation requests fail to be created, which causes evaluation requests to remain in status *In Submission*). For more information, see the system documentation of the report.

10.5.4 Specific Troubleshooting for Supplier Information and Master Data

Below you can find solutions to some problems that may occur:

List of Possible Problems

Problem	Suggested Solution
Supplier evaluation requests remain in status *In Submission* because follow-on documents (evaluation responses and evaluation scorecards) are not created.	Start the report *Creation of Evaluation Responses* (`/SRMSMC/R_SEV_CREA_RESPONSES`) manually to create the follow-on documents. For more information, see the system documentation of the report.

10.6 Supply Chain

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Supply Chain.

10.6.1 Efficient Logistics and Order Fulfillment

This section contains information about Efficient Logistics and Order Fulfillment valid for *Basic Warehouse Management (S/4HANA)*.

Data Aging for Material Documents

You can use data aging for your *material transaction documents* (data aging object `MM_MATDOC`). Data aging enables you to perform queries on large numbers of material transaction documents in a shorter time and helps you to avoid using valuable memory for historical data that is rarely used.

Restricted Customizing

There is restricted individual Customizing for the data aging object `MM_MATDOC`. The following system behavior is set by default:

- When starting a data aging run material documents are moved from the current to the historical area in packages of 100,000 material document items by default. You can change the default package size for the data aging procedure in the transaction *Data Aging Objects* (`DAGOBJ`).
- The residence time of the data aging object `MM_MATDOC` in the current area is 2 years by default. You can change the default residence time on a plant level. The relevant Customizing settings are located in the Customizing for *Materials Management* under *General Settings for Materials Management* > *Data Aging* > *Data Aging for Material Documents* > *Define Data Aging for Material Documents*.

- The current posting period and the previous posting period are excluded from the data aging process by default.

For more information also see the section Data Archiving and Data Aging [page 13].

10.6.2 Extended Warehouse Management

This section describes specific operational details that are valid for Extended Warehouse Management (EWM).

> **Note**
>
> If you are using decentralized EWM based on SAP S/4HANA and connected to an SAP ERP system, you need to distribute master data. For more information, see SAP Netweaver on SAP Help Portal at http://help.sap.com/nw. Under *Application Help*, choose *SAP NetWeaver Library: Function-Oriented View* > *SAP NetWeaver Application Server for ABAP Infrastructure* > *Connectivity* > *Components of SAP Communication Technology* > *Classic SAP Technologies (ABAP)* > *IDoc Interface/ALE* > *Administration* > *Administration of ALE Functions* > *Periodic Tasks*.

10.6.2.1 Specific Administration Tools for Extended Warehouse Management

This section of the Operations Guide for SAP S/4HANA contains information about administration tools specific to Extended Warehouse Management.

10.6.2.1.1 Scheduled Periodic Tasks

This section describes all tasks that can be automated and that must be run periodically to keep the application running smoothly. Such tasks may be required on component level and are, therefore, relevant in each scenario that uses the component. Other tasks may be relevant for certain business scenarios only. It is important that you monitor the successful execution of these tasks on a regular basis.

The following table contains the scheduled periodic tasks:

Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
Transaction SARA	Transaction SARA and Definition of Background Jobs	Depends on the archiving object and the database growth	Archives archiving objects (see Data Growth and Data Archiving Monitors [page 53])

Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
Transaction SLG2 (report SBAL_DELETE)	Definition of Background Jobs	Weekly or monthly	Deletes application logs (see Overview of Trace and Log Files [page 51])
Report /SCWM/R_REORG_DATA_CONT	Definition of Background Jobs		Deletes batch processing data from warehouse management monitor
Report /SCWM/PI_COMPL_DELETE	Definition of Background Jobs	Yearly	Deletes physical inventory completeness data sets from the years prior to the last year.
Report RSPPF_SWJCLEAN	Definition of Background Jobs	Weekly or monthly	Deletes technical data from Post Processing Framework (PPF) actions (see SAP Note 1890845)
Report /SCWM/PI_PERS_PPF_DEL	Definition of Background Jobs	Periodicity analogous to archiving periods of the physical inventory documents	Warehouse logistics processing: Deletes PPF action data specific to Extended Warehouse Management (EWM)
Report /LIME/COLLECTION_DELETE	Definition of Background Jobs	Periodicity analogous to archiving periods of the confirmed warehouse tasks	Warehouse logistics processing: Deletes the dispatch message log for goods movements: • Planning System • SAP Business Warehouse • Financial System • Inventory System • External System • S/4HANA Inventory Mngmt • GI_W2IM: *X* • Minimum Age in Days • End Date of Deletion Run: <fill in actual date> All processed records will be deleted

Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
Report `/LIME/BACKGROUND_DELETE_EXEC`	Definition of Background Jobs	Weekly or monthly To delete zero quantities, set no other parameter	Inventory: Deletes database entries for zero stock quantities and, on request, index entries without stock. EWM index tables are as follows: • `/SCWM/STOCK_IW01` • `/SCWM/STOCK_IW02` • `/SCWM/STOCK_IW03` • `/SCWM/STOCK_IW04` The index table entries are only deleted if this is allowed in Customizing. For more information, see Customizing for *SCM Basis* under *Logistics Inventory Management Engine (LIME)* > *Basic Settings* > *Index Tables and Hierarchy* > *Determine Index Tables*.
Report `/SCWM/R_REORG_HU_WO_PRINT`	Definition of Background Jobs	Periodicity analogous to archiving periods of the warehouse tasks	Warehouse logistics processing: Deletes PPF action data specific to EWM
Report `/SCWM/R_EWM_AUDIT_DELETE_DATA`	Definition of Background Jobs	Monthly or yearly	Deletes data that is no longer required for audit purposes
Report `/SCMB/ALEN_ALERT_DELETE`	Definition of Background Jobs	Weekly or monthly	Deletes alerts older than x days
Report `/SCWM/R_BW_COLLECTIVE_RUN`	Definition of Background Jobs	Daily	Transfers extracted data from the following queued remote function call (qRFC) queues to the BI Delta Queue: • WMTB (warehouse task) • WMOB (warehouse order) • WMBB (storage bin) • WMDB (delivery item) • WMVB (value added service)

Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
Report /SCWM/R_PDO_COMPLETE	Definition of Background Jobs	Daily	Completes outbound delivery order items with zero quantity
Report /SCWM/R_REORG_EXCEPTION_SOLVED	Definition of Background Jobs	Monthly or yearly	Warehouse logistics processing: Deletes the object-related history records of exception code processing

The following table contains the scheduled periodic tasks also relevant for decentralized EWM:

Program Name/Task	Recommended Frequency	Detailed Description
Transaction /SCWM/VALUATION_SET	Weekly or monthly, depending on the use of price information in the physical inventory process	Determines and sets prices from SAP ERP

The following table contains scenario-specific scheduled periodic tasks:

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
Advanced Production Integration	Report /SCWM/R_MFG_PDI_COMPLETE	Weekly	Closes unprocessed inbound deliveries from production
Advanced Production Integration	Report RSQIWKEXI	Hourly	Restarts goods movement queues not executed due to temporary material locks (for example if the same material is received by handling unit (HU) for two production orders in parallel production lines)
Queue Alerting	Report /SCWM/R_QRFC_QUEUE_ALERT	Every 30 – 120 minutes	Creates alert for failed qRFC message
Queue Alerting	Report RSALERTPROC	Monthly	Deletes old alerts
Physical Inventory	Report /SCWM/R_WM_ADJUST	Hourly	Posts differences (for example, physical inventory differences) to the SAP ERP system, when you do not want to post the differences manually in the Difference Analyzer.

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
Dock Appointment Scheduling	Report `/SCWM/R_DAS_DELETE`	Monthly	Deletes old SAP Dock Appointment Scheduling time slots and loading appointments
Dock Appointment Scheduling	Report `/SCWM/DSAPP_DES`	Monthly or yearly	Data destruction program for loading appointments
Proof of Delivery	Report `/SCWM/RPOD_IMP` Option Create	Daily	Imports proof-of-delivery (POD) data
Proof of Delivery	Report `/SCWM/RPOD_IMP` Option Delete	Monthly	Deletes POD data
Cartonization Planning	Transaction `/SCWM/ CAPDEL`	Depends on how often planned shipping HUs (PSHUs) are used in the outbound process: weekly, monthly, or yearly	For goods-issue-posted outbound delivery orders, the planned shipping can be deleted. Alternatively you can also delete PSHUs before wave creation with report `/SCWM/R_WAVE_PLAN_BACKGROUND`. To do so, select the *Delete Planned Shipping HUs* checkbox of the report.
Transportation Integration (ERP)	Report `RBDMANI2`	Hourly	Processes Idocs that are not yet posted
Labor Management	Report `/SCWM/R_MS_RESULT_DELETE`	Depends on the usage of measurement services	Labor Management (Analytics): Deletes measurement service results (on the *SAP Easy Access* screen, choose *Extended Warehouse Management* > *Settings* > *Measurement Services* > *Periodic Processing*)
Labor Management	Report `/SCWM/RLM_EWL_COMPLETE`	Daily (hourly if asynchronous completion is active)	Processes incomplete executed workload records
Labor Management Using BRFplus	Report `/SCWM/R_LEAN_TRACE_DELETE`	Daily, weekly, or monthly, depending on the use of BRFplus and the size of the warehouse	Deletes EWM-specific lean trace records for BRFplus

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
Labor Management with Time and Attendance Data	Report /SCWM/R_TATT_UPLOAD	Daily	Uploads time and attendance data
Labor Management with Time and Attendance Data	Report /SCWM/TATT_DES	Monthly or yearly, depending on the growth rate of the time and attendance database table	Deletes time and attendance data using the data destruction object
Labor Management with Time and Attendance Data	Report /SCWM/R_TATT_DELETE	Monthly or yearly, depending on the growth rate of the time and attendance database table	Deletes time and attendance data
Transit Warehouse	Report /SCWM/R_REORG_HU_TW_PPF	Monthly	HU processing in transit warehouse: Deletes PPF action data specific to EWM
Delayed Completion of Inbound Deliveries	Report /SCWM/R_DELETE_DWM_VARI	Daily	Deletes obsolete variants for report /SCWM/R_PRDI_SET_DWM When you schedule the job, ensure that the job to reorganize the background jobs (RSBTCDEL2) deleted the corresponding job logs.
Warehouse Billing	Report /SCWM/WB_SNAPSHOT_DELETION	Monthly	Deletes obsolete snapshot data
Warehouse Billing	Report /SCWM/WB_WBMR_DELETION	Yearly	Deletes obsolete requests for warehouse billing measurements and specifications of warehouse billing measurements
Transit Warehouse	Report /SCWM/R_REORG_HU_TW_PPF	Monthly	HU processing in transit warehouse: Deletes PPF action data specific to EWM

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
SAP Global Batch Traceability in EWM	Report `/SCWM/GBT_R_EVENT_TRANSFER`	Depends on the desired frequency and the number of events that are created during a business day	Transfers the events for HUs, which are relevant for SAP Global Batch Traceability, from EWM to the configured receiver system, which is SAP Global Batch Traceability The data transfer uses Web services runtime for service-oriented architecture (SOA). The communication is based on the notification communication pattern.
SAP Global Batch Traceability in EWM	Report `/SCWM/GBT_R_EVENT_DELETION`	Depends on the run frequency of report `/SCWM/GBT_R_EVENT_TRANSFER`	Deletes events from the EWM-GBT transfer database table that have the status *Transmitted*
Radio Frequency (RF) Log	Report `/SCWM/R_RF_LOG_DELETE`	Monthly	Deletes entries in the RF log

The following table contains the scenario-specific scheduled periodic tasks also relevant if you use decentralized EWM:

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
Distribution of Expected Goods Receipts	Report `/SCWM/ERP_DLV_DELETE`	Daily	Creates and deletes expected goods receipts
Account Assignments	Report `/SCWM/RACC_IMP_ERP_UI`	Daily or weekly, depending on business process and account assignment category	Administrates account assignment data

10.6.2.1.2 Optional Manual Periodic Tasks

This section describes optional manual tasks you can run periodically in order to keep the application running smoothly over time. A manual task needs a user to execute each task, as opposed to scheduled tasks which can be automated using a task scheduler program. Such tasks may be useful on component level and are therefore relevant in each scenario that uses the component. Other tasks may be relevant for certain business scenarios only. It is important that you monitor the successful execution of these tasks on a regular basis.

The following table describes the only optional manual task in Extended Warehouse Management:

Required for Scenarios	Tools Supporting this Task	Recommended Frequency	Description
Dock Appointment Scheduling	Web Dynpro Application / `SCWM/DSSLOT_GEN`	Depends on the usage of time slots in SAP Dock Appointment Scheduling: weekly or monthly	For the creation of time slots in the graphical view of SAP Dock Appointment Scheduling

10.6.2.2 Specific Monitoring Tools for Extended Warehouse Management

Extended Warehouse Management provides the warehouse management monitor as a central place to monitor your business processes from the business and the technical perspective. You can start the monitor on the *SAP Easy Access* screen by choosing *Extended Warehouse Management* > *Monitoring* > *Warehouse Management Monitor* (transaction `/SCWM/MON`).

10.6.2.2.1 Interface Monitors

Interface monitors are essential for analyzing problems with interfaces such as remote function call (RFC), IDoc, and HTTP. The following table contains all the interface monitors in Extended Warehouse Management (EWM):

Interface	Description	Technology Used
Delivery Processing	Communication based on deliveries or warehouse requests as the foundation for logistics execution in EWM Relevant for all systems	Queued remote function call (qRFC)
Goods Movement	Goods movements that are not directly related to a delivery document Relevant for all systems	qRFC
Production	Asynchronous creation of production material requests based on production and process orders as the foundation for logistics execution in EWM Optional business process	qRFC
BI Data Sources	SAP Business Information Warehouse and EWM	Not applicable

Interface	Description	Technology Used
Transportation Integration (SAP TM)	SAP Transportation Management (SAP TM) and EWM Web services Optional business process	SAP Process Integration (SAP PI) + Web service
Warehouse Billing	SAP TM Web services Optional business process	SAP PI + Web service
Quality Inspection	Integration of quality inspection Optional business process	qRFC
Global Trade Compliance Check	SAP Global Trade Services and EWM Optional business process	RFC, qRFC
Material Flow System	Not applicable	Not applicable
Yard Management	Web services for non-SAP systems Optional interface	SAP PI + Web service
Delivery Notifications	Web services for non-SAP systems Optional interface	SAP PI + Web service
Global Batch Traceability Integration (SAP Global Batch Traceability)	SAP Global Batch Traceability and EWM communication based on events created in EWM	XI + Web service

The monitor tools for these interfaces are as follows:

Interface	Monitor	Description	Prerequisites
Delivery Processing	SMQ1/SMQ2	Standard qRFC monitoring as described in the application help for ABAP Platform Queues beginning with DLVS or DLWS The queue should be monitored within one month as a goods movement can only be posted in the current and previous period (for example, a goods movement sent to the queue on July 15 must be posted on August 31 at the latest).	Create settings for qRFC scheduling and administration in transactions SMQE, SMQS, and SMQR as described in the Integration Guide.
Goods Movement	SMQ1/SMQ2	Standard qRFC monitoring as described in the application help for ABAP Platform Queues beginning with EWM-GOODSMVT, WMPGR, or WMPGI For the monitoring of queues, see row *Delivery Processing* above.	Create settings for qRFC scheduling and administration in transactions SMQE, SMQS, and SMQR as described in the Integration Guide.
Production (Production Material Request)	SMQ1/SMQ2	Standard qRFC monitoring as described in the application help for ABAP Platform Queues beginning with PR	Create settings for qRFC scheduling and administration in transactions SMQE, SMQS, and SMQR as described in the Integration Guide.
BI Data Sources	SMQ1/SMQ2	Standard qRFC monitoring as described in the application help for ABAP Platform Queues beginning with WMBB, WMDB, WMTB, WMOB, or WMVB	
Transportation Integration (SAP TM)	SXMB_MONI	Standard SAP PI monitoring as described in the application help for ABAP Platform	

Interface	Monitor	Description	Prerequisites
Quality Inspection	SMQ1/SMQ2 SWEQADM, SWETYPV, SWELS	Standard qRFC monitoring as described in the application help for SAP NetWeaver Queues beginning with QI, DLVS, DLWS, QINF, WMQF	Create settings for qRFC scheduling and administration in transactions SMQE, SMQS and SMQR as described in the Integration Guide
Warehouse Billing	SXMB_MONI	Standard SAP PI monitoring as described in the application help for ABAP Platform	
Material Flow System	/SCWM/MON (node *Material Flow System* > *Telegram Buffer*)	Communication between EWM and programmable logic controllers (PLCs)	
Yard Management	SXMB_MONI	Standard SAP PI monitoring as described in the application help for ABAP Platform	
Delivery Notifications	SXMB_MONI	Standard SAP PI monitoring as described in the application help for ABAP Platform	
Global Batch Traceability Integration (SAP Global Batch Traceability)	SXMB_MONI	Standard XI monitoring as described in the application help for ABAP Platform	

Note

As an alternative to the technical monitoring, you can monitor the qRFC messages in a business context. In the warehouse management monitor (transaction /SCWM/MON) under node *Tools* > *Message Queue* you can get a list of EWM-relevant queues. The system enriches the list with relevant information for a business user such as the warehouse number and texts. You can use this additional option for monitoring queues without additional configuration. You can also adapt the selection to the needs of your users in Customizing for *Extended Warehouse Management* under *Monitoring* > *Warehouse Management Monitor* > *Message Queue Monitoring*.

You can configure e-mail and SMS alerts for failed queues. Therefore you do not need to monitor the queues actively.

For more information, go to https://help.sap.com/s4hana_op_2020, enter *Message Queue Monitoring* into the search bar, press Enter, and open the search result with that title.

EWM uses the qRFC for internal messages to achieve minimal response time for users who need to work with a high throughput. These queues also need to be monitored. You can do the monitoring as described for the interfaces above, using transaction SMQ2/SMQ1 for queues starting with WM, EWM, or DLV. Alternatively, you can use the warehouse management monitor to display the queues with additional business data as described above.

10.6.2.3 Overview of Trace and Log Files

Extended Warehouse Management (EWM) uses the application log (part of ABAP Platform) to store application errors, warnings, and success messages issued in critical processes (for example, the delivery interface or in user interface (UI) transactions. For UI transactions, the user has to save the application log explicitly.

For general information on application logs, go to https://help.sap.com/s4hana_op_2020, enter *Application Log (BC-SRV-BAL)* into the search bar, press `Enter`, and open the search result with that title.

You can monitor the application logs with transaction `SLG1` or in the warehouse management monitor under *Tools* > *Application Log*.

The following table contains the trace and log files in EWM:

Log Object	Detailed Description	Activation/Deactivation
`/SCWM/DLV_ERP`	Delivery Processing: Stores error messages issued during the queued remote function call (qRFC) communication of deliveries with an expiry time of seven days.	The system saves the log automatically when the qRFC fails. If you need a log for messages that were processed without error for test purposes, you can change the settings in transaction `/SCWM/ERPLOG` (on the *SAP Easy Access* screen choose *Extended Warehouse Management* > *Settings* > *Application Log* > *Configure Log for ERP Messages*.
`/SCMB/PATTERN_UI`	Log for UI messages	Log has to be saved explicitly in the EWM UI transactions.
`/SCWM/WME`	Warehouse Logistics Processing: Log for EWM operations	Log has to be activated with transaction `/SCWM/ACTLOG` (on the *SAP Easy Access* screen choose *Extended Warehouse Management* > *Settings* > *Activate Application Log*). You can activate the application log on sub-object level.
`/SCWM/SHP_RCV`	Site Logistic Processing: Log for shipping and receiving transactions	

Log Object	Detailed Description	Activation/Deactivation
/SCWM/EPD	Labor Management: Log for sending performance documents to human resources (HR)	Log has to be saved explicitly by the user in transaction /SCWM/EPD_TRANSFER (on the *SAP Easy Access* screen choose *Extended Warehouse Management* > *Labor Management* > *Employee Performance* > *Send Performance Document to HR*).
/SCMB/MD	Master Data: Log for deleting supply chain units	
/SCWM/PACKSPEC	Master Data: Log for packaging specifications	The log for the determination analysis has to be activated in transaction /SCWM/PSLOG. The log for uploading packaging specifications has to be saved explicitly by the user in transaction /SCWM/IPU (on the *SAP Easy Access* screen choose *SCM Basis* > *Master Data* > *Packaging Specification* > *Initial Data Transfer of Packaging Specifications*.
PPF	Post Processing Framework	The log is always active. You can deactivate the log for delivery processing in transaction /SCWM/DLVPPFLOG (on the *SAP Easy Access* screen choose *Extended Warehouse Management* > *Delivery Processing* > *Actions* > *Deactivate PPF Log Depending on Warehouse and User*.
/SCWM/CHM	EWM Check Monitor	
/SCWM/DAS	SAP Dock Appointment Scheduling	The log is used for asynchronous processes and reports in SAP Dock Appointment Scheduling. By default it is written for errors and warnings. You can change the activation of the log in transaction /SCWM/DSLOG.

The following table contains the trace and log files in decentralized EWM:

Log Object	Detailed Description	Activation/Deactivation
/SCWM/ACC	Log for import of accounting objects from SAP ERP.	Log must be saved explicitly in transaction /SCWM/ACC_IMP_ERP (on the *SAP Easy Access* screen choose *Extended Warehouse Management* > *Interfaces* > *ERP Integration* > *Administration of Account Assignment Data*).

During the implementation and test phase, or when you need to investigate an issue, you should activate the related logs. Once the system is running smoothly, you can improve the performance if you configure the logs to record only *Important* or *Very Important* messages or deactivate them completely.

For descriptions of the recommended tasks to contain data growth, see Scheduled Periodic Tasks [page 40].

10.6.2.4 Data Growth and Data Archiving Monitors

Extended Warehouse Management (EWM) uses the standard tools available in ABAP platform and doesn't require a component-specific tool. For more information, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, and open the search result with that title.

You can archive the following data in EWM:

Application Component	Business Object/Document Category	Archiving Object
Warehouse Request Processing	Internal Warehouse Requests (Inbound Delivery)	DLV_INB
	Internal Warehouse Requests (Outbound Delivery)	DLV_OUT
	Production Material Requests	DLV_PROD
	Document Info Records - only if using attachments to inbound deliveries. Selection criteria: customized document type, for example SDO	CV_DVS
	Document Info Records - only if using attachments to outbound delivery orders. Selection criteria: customized document type, for example SID	CV_DVS
Stock Management	Handling Units	WME_HU
Warehouse Logistic Processing	Warehouse Tasks and Goods Movement Documents	WME_TO

Application Component	Business Object/Document Category	Archiving Object
	Warehouse Orders	WME_WO
	Waves	WME_WAVE
	Telegram Flows	WME_MFS
	Relevant Resource Data	WME_RSRC
	Value-Added Service Orders (VAS Orders)	WME_VAS
	Physical Inventory Documents	LIME_PI
	LIME Log Entries (goods movements and confirmed warehouse tasks). Periodicity analogous to WME_TO.	LIME_NLOG
Site Logistic Processing	Door Activities	WME_DOOR
	Vehicle Activities	WME_VEH
	Transport Unit Activities	WME_TU
Labor Management	Indirect Labor Tasks	WME_ILT
	Executed Workloads	WME_EWL
	Employee Performance Documents	WME_EPD
	Business Partners (Processors) – only if created originally in Warehouse Management	CA_BUPA
	Change Documents (for Employee Performance Documents and Time & Attendance entries that were deleted manually) can be archived or deleted. Selection criteria: object classes /SCWM/EPD and /SCWM/TATT.	CHANGEDOCU
Express Shipping Interface	Manifests	EWM_ESI_MF
	Parcels	EWM_ESI_PA
Warehouse Billing	Warehouse Management Warehouse Billing Measurements	EWM_WBM
Bin Change Log	Change Documents (for Storage Bins) can be archived or deleted. Selection criteria: object class /SCWM/CD_LAGP.	CHANGEDOCU

Application Component	Business Object/Document Category	Archiving Object
Master Data	Change Documents (for Fixed Bin Assignment) can be archived or deleted. Selection criteria: object class `/SCWM/CD_FIXBIN`.	`CHANGEDOCU`
Production Integration	Change Documents for table `/SCWM/TPSASTAGE` can be archived or deleted. Selection criteria: object class `/SCWM/CD_PSASTG`.	`CHANGEDOCU`
Shipping and Receiving	Change Documents (for Transportation Units, Transportation Unit Assignments, and Vehicles) can be archived or deleted. Selection criteria: object classes `/SCWM/TU`, `/SCWM/TUDLV`, and `/SCWM/VEH`.	`CHANGEDOCU`
	Document Info Records - only if using attachments to transportation unit activities. Selection criteria: customized document type, for example `STA`	`CV_DVS`
Pre-Allocated Stock	Change Documents (for Pre-Allocated Stock) can be archived or deleted. Selection criteria: object classes `/SCWM/CD_PAS`	`CHANGEDOCU`

You can also archive the following data in decentralized EWM:

Application Component	Business Object/Document Category	Archiving Object
Warehouse Logistic Processing	QIE Inspection Documents	`QIE_INSP`

10.6.2.5 Data Consistency

Extended Warehouse Management (EWM) exchanges data with other solutions in SAP S/4HANA using asynchronous messages. Monitor the queued remote function call (qRFC) messages in the system as described in Interface Monitors [page 47].

You can check the consistency of your EWM system using transaction `/SCWM/CHM_PRF` (*Maintain Check Monitor Profile*). The particular checks are documented in the transaction.

10.6.3 Transportation Management

This section of the Operations Guide for SAP S/4HANA, on-premise edition contains information on operations tasks specific to Transportation Management.

10.6.3.1 Trace and Log Files

Trace and log files are essential for analyzing problems. SAP S/4HANA uses the standard ABAP Platform tools for tracing and logging.

The following application logs can be monitored with transaction `SLG1`:

- `/SCMTMS/TMS` (Transportation Management)
- PPF (Post Processing Framework)

Important Trace and Log Files

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Optimizer logs and trace files	rcc_log To display the trace files, choose *Extras* > *Display* > *Log File*.	Check frequently – daily, weekly	Check for Errors	Display and analyze optimizer logs and trace files (see below, following the table)	Basis Support
Changing the detail level of trace files	`/SCMTMS/WDC_TS_ENG_COMF`	Check frequently – daily, weekly	Check for Errors	*System Administration* > *Remote Control and Communication Framework* > *Settings* > *Engine Debug Configuration*	Basis Support
Spool file of optimizer run	`SM37`	As required	Messages in spool file	Check also for application errors after the optimizer run using rcc_log (see above).	Application Support/Job scheduling team

The optimizer logs and trace files are on the server in the directory log of the SAP gateway on which the optimizers are installed (either own server or application, or database server):

- Directory (Windows version): \usr\sap\<SID>\G<GWNr>\log or \usr\sap\<SID>\DVEBMGS<GWNr>\log
- <SID> = SystemID
- <GWNr> = SystemNr (=GatewayNr) for example00

For more information, see SAP Note 391808.

Please note that application log files may include security-relevant and GDPR-relevant information. Therefore, we recommend deleting these files on a regular basis according to local security regulations.

For more information about this topic, go to https://help.sap.com/s4hana_op_2020, enter *Application Log (BC-SRV-BAL)* into the search bar, press `Enter`, and open the search result with that title.

10.6.3.2 Administration Tools

Once you install and configure SAP SCM Optimizer, the following monitors and transactions can be used for administration, analysis, and maintenance.

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
User list for optimizers	`rcc_session`	As required	Not applicable	Displays a user list for optimizers	Basis Support
Versions of optimizers	`rcc_version`	As required	Not applicable	Displays optimizer versions	System monitoring team
Running optimizer processes	`rcc_session`	As required	Not applicable	Display optimizer processes	Basis Support
RFC destinations for optimizers	`SM59` / `rcc_cust`	During installation or after configuration changes	Test connection status to ensure all is OK	Defining and checking optimizer RFC destinations – can also be used to check if optimizer server is online	System monitoring team and Basis Support
Spool file of optimizer run	`SM37`	As required	Messages in spool file	Check also for application errors after the optimizer run using `rcc_log` (see section Trace and Log Files [page 56]).	Application Support / Job scheduling team

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Optimizer server settings	rcc_cust	During installation, or for configuration changes to optimizer servers	Not applicable	Maintain master data for optimization servers.	Basis Support

10.6.3.3 Scheduled Periodic Tasks

You have to schedule the reports listed below as regular jobs:

Standard / Housekeeping Jobs for Transportation Management (TM)

Program Name / Task	Recommended Frequency	Description
Report `POWL_WLOAD`	Once, nightly	All user query (work lists) results within a POWL context are cached into an internal cluster table. Every time a user chooses the refresh link in the worklist, the results of the feeder class method GET_OBJECTS are saved to this cache. The POWL always reads the cache regardless of the Syncsetting in the type repository or query definition. This cache enables the administrator to create a scheduled worklist using the POWL_WLOAD report.
Report `SBAL_DELETE`	Occasionally, for example, monthly	As described in SAP Note 195157, using the application log occupies storage space on the database. To free the database of outdated entries, we recommend that you execute report `SBAL_DELETE` periodically. Recommendation: coordinate with archiving cycles.
Report `/SAPAPO/DELETE_LOCATIONS`	Yearly	Master data: Deletes locations with deletion flag
Report `/SCMTMS/PLN_EXP_DELETE`	Daily	Deletes Optimizer Explanation logs older than x days
Data Aging	Occasionally, for example, weekly	For more information, see the product assistance for **Data Aging in Transportation Management (TM).**

Program Name / Task	Recommended Frequency	Description
Data Archiving	Occasionally, for example, weekly	For more information, see the product assistance for **Archiving in Transportation Management (TM).**

Standard / Housekeeping Jobs for TM Tendering

Program Name/Task	Recommended Frequency	Detailed Description
Report `/SCMTMS/TEND_CONT_PROCESS`	Every 5 to 120 minutes, depending on the minimum response times for carriers in tendering	Processes incoming freight quotations and continues the tendering process after a freight quotation has been received or after the maximum response time for a freight request for quotation is over.
Report `/SCMTMS/TEND_PROCESS_INBOX`	Same frequency as report `/SCMTMS/TEND_CONT_PROCESS`. We recommend that you run this report immediately before `/SCMTMS/TEND_CONT_PROCESS`.	Converts freight quotations that have been received from carriers by e-mail so that the quotations can be processed by report `/SCMTMS/TEND_CONT_PROCESS`. This report is not required if receiving freight quotations by e-mail is not enabled.
Report `/SCMTMS/TEND_NOTIFICATION_MAIL`	Hourly/daily	Instead of notifying a carrier immediately about tendering events by e-mail, the system administrator can choose to send collective e-mails to carriers periodically. Schedule this report to create these notification e-mails.

Standard / Housekeeping Jobs for SCM Optimizer

Program Name/Task	Recommended Frequency	Detailed Description
Report RCC_CLEANUP Transaction RCC_CUST	Daily	This report should be run daily to delete all log entries made by RCC and all external files on remote engine servers for which the log deletion time parameter is set inrcc_cust.
Report `BRCONNECT`	Daily	Calculates BI-relevant optimizer statistics (for Oracle); see SAP Notes 129252 and 421795

10.6.3.4 Trigger Processing

Transportation Management (TM) uses bgRFC (Background Remote Function Call) technology to reliably process asynchronous updates. To use this technology, you need to create a bgRFC inbound destination.

The following configuration steps are required for creating an inbound destination in the TM system:

1. Go to transaction `SBGRFCCONF`.
2. Go to the *Define Inbound Dest.* tab page and choose *Create*.
3. In the *Inb. Dest. Name* field, enter `TM_BGRFC_INBOUND`.
4. Choose *Save* to save the queue prefixes.
5. In the bgRFC Configuration screen, choose *Save* to save your Customizing settings.

10.7 R&D / Engineering

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to R&D / Engineering.

10.7.1 Product Lifecycle Management

This section describes specific operational details that are valid for Product Lifecycle Management (PLM).

10.7.1.1 Specific Monitoring Tools for PLM

This section of the Operations Guide for SAP S/4HANA contains information about monitoring tools specific to Product Lifecycle Management.

Workload Monitors

Product Lifecycle Management uses the standard ABAP Platform workload monitor.

For more information, go to https://help.sap.com/s4hana_op_2020, enter *Workload Monitor* into the search bar, press `Enter`, and open the search result with that title.

Interface Monitors

Interface monitors are essential for analyzing problems with interfaces such as RFC, IDoc, and HTTP. If you create RFC connections for running your PLM system landscape, use standard ABAP Platform tools for monitoring these RFC connections.

For more information, go to https://help.sap.com/s4hana_op_2020, enter *RFC Administration* into the search bar, press Enter, and open the search result with that title.

10.7.1.2 High Availability for PLM

Product Lifecycle Management follows the general high availability (HA) concept for all systems based on ABAP Platform. For more information, see Business Continuity and High Availability [page 15].

In particular, you can protect Product Lifecycle Management from downtimes using redundancy approaches such as installations on at least two different runtime environments or physical machines. A load balancing or dispatching mechanism ensures that in case of a downtime of one runtime or physical machine the remaining ones can handle all requests.

10.7.1.3 Specific Troubleshooting for PLM

If errors occur during the operation of the PLM Web UI applications, we recommend that you create a BCP ticket under the corresponding application component (they all start with PLM-WUI*).

For more information about how to operate SAP NetWeaver Enterprise Search, go to https://help.sap.com/s4hana_op_2020, enter *Administrating the ABAP Platform* into the search bar, press Enter, open the search result with that title, and navigate to *Administration Concepts and Tools* > *Enterprise Search*.

10.7.2 Enterprise Portfolio and Project Management

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Enterprise Portfolio and Project Management.

10.7.2.1 SAP Portfolio and Project Management

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to SAP Portfolio and Project Management.

10.7.2.1.1 Alert Monitoring of Components

To set up the monitoring for Project Management follow the following procedure. Via this monitoring not all components which can be used by Project Management are covered but the most important ones.

1. Go to transaction `RZ20` and create a new monitor: **`Portfolio and Project Management monitor`**.
2. On the top level, create a virtual node for each of the following areas:
   - Adobe Availability
   - Database
   - ABAP WebDynpro
3. On the second level, create rule-based monitors for each area as described in the following table:

Node	Type	Parameter	Value
Adobe Availability	Virtual		
`CCMS_GET_MTE_BY_CLASS`	Rule	*R3System*	**`<CURRENT>`**
		MTEClass	**`GRMG_ADS`**
Database	Virtual		
`CCMS_GET_MTE_BY_CLASS`	Rule	*R3System*	**`<CURRENT>`**
		MTEClass	**`CCMS_DB_mcmtc`**
ABAP WebDynpro	Virtual		
`CCMS_GET_MTE_BY_CLASS`	Rule	*R3System*	**`<CURRENT>`**
		MTEClass	**`WDAClass`**

With SAP Portfolio and Project Management, a monitor template is delivered which you can find in transaction `RZ20` under *SAP Portfolio and Project Monitor Templates* > *SAP Portfolio and Project Management*.

There is no specific alert monitoring functionality for SAP Portfolio and Project Management.

10.7.2.1.2 Detailed Monitoring and Tools for Problem and Performance Analysis

Trace and Log Files

SAP Portfolio and Project Management logs application errors for background reports to transaction `SLG1`. Background reports are executed in the areas of financial integration, migration, import from Microsoft Excel, and versioning. You can display these application logs via the objects `RPM_DOCUMENT`, `RPM_DX`, `RPM_INTEGRATION`, `RPM_MIGRATION`, `RPM_PLANNING`, `RPM_UC`, `RPM_VERSIONING`, `DPR_DX`.

Portfolio Management

All reports that are used to transfer data to other systems, for example to the SAP S/4HANA system, contain logs. You can access these logs directly from the individual reports.

Scenario-Specific Problem Analysis Tools

Invalid Characters in the Project ID

For security reasons, the system does not permit certain characters in the project ID. To avoid these invalid characters, the system checks the project ID entered by the user.

You can start the `DPR_CHECK_CHAR_OF_PROJECT_ID` program to check for existing projects that contain invalid characters. The result list displays all projects whose IDs you need to change.

Comparing Field Controls

You can use the program `DPR_COMPARE_FC` to compare two local Project Management field controls, to export a local field control as Comma Separated Value (CSV) file or to compare a local field control with an external field control that was imported as a CSV file. For more information about the program `DPR_COMPARE_FC`, see the program documentation.

Changing User Settings

You can use the `DPR_CHANGE_USER_SETTINGS` program to update the Project-Management-specific user settings for one user or for all users. The changeable user settings are the same as on the *Personalization* tab in the *personalization object key* column, entry *DPR_USER_SETTINGS* (transaction `SU01`).

For more information about the `DPR_CHANGE_USER_SETTINGS` program, see the program documentation.

Where-Used List for GUIDs

With the program `DPR_GUID_ANALYZE`, you can search all database tables, relevant to SAP Portfolio and Project Management, for entries containing the GUID of a SAP Portfolio and Project Management application object, for example, a project or portfolio element. The program can be used by system administrators, consultants, or developers during problem analysis.

10.7.2.1.3 Scheduled Periodic Tasks

Project Management

The following tasks must be carried out by an administrator.

Standard/Housekeeping Jobs

Program Name/Task	Recommended Frequency	Detailed Description

DPR_REPLICATE_RATES_TO_R3	When you use the accounting integration functions and create new cost or revenue rates within a project for costing	Project Management: You can use this report if you have an accounting system connected to Project Management. The report replicates cost and revenue rates to the accounting system so that they are recognized there. This replication of cost and revenue rates and accounting relevant characteristics has to start for each destination assigned to the corresponding object link for the accounting integration. After replication of cost and revenue rates, maintain the replicated data. You can add valid cost element, activity type and revenue element to the corresponding cost/revenue rates. For more information, see the Product Assistance documentation for SAP Portfolio and Project Management under *Project Management* > *Accounting Integration* > *Controlling* > *Controlling Cockpit* >.
DPR_FIN_GECCO_R3_REPLICATION	When you create new project types or project reasons	Project Management: Replicates project types and project reasons.
DPR_EVE_BATCH_DPO	As needed	Project Management: Allows you to extract data from your projects and display the evaluations in Project Management. You can either plan the extraction of the data or trigger it manually. For more information, see the *Extracting Evaluations for a Project* section of the Configuration Guide for SAP Portfolio and Project Management..

HR_SYNC_PERSON	Daily	Project Management: You use this report only if SAP HR is installed on the same system as Project Management. For more information, see the *From SAP HR to Project Management* section of the Configuration Guide for SAP Portfolio and Project Management.
DPR_QUALI_PERSON_TRANSFER	As needed	Project Management: You use this report only if SAP HR is installed on the same system as Project Management. This program replicates qualifications to the business partner objects. For more information, see SAP Note 1058953.
DPR_CATS_CPR_TRANSF	As needed	Project Management: Integration to the Cross-Application Time Sheet (CATS) You can use this report for transferring the recorded data from CATS to Project Management.

Portfolio Management

Standard/Housekeeping Jobs

Program Name/Task	Recommended Frequency	Detailed Description
RPM_FIN02	Daily	Only when RPM_FICO_DATA_Transfer is not available in SAP S/4HANA
/RPM/PLAN_INT_PREP	As Needed	FI/CO Integration to SAP S/4HANA
RPM_FICO_DATA_TRANSFER	Daily	FI/CO Integration to SAP S/4HANA (improved version). To be executed in in the ERP system. Alternatively, /RPM/FICO_INT_PLANNING can be used (see below).
/RPM/FICO_INT_PLANNING	Daily	FI/CO Integration to SAP S/4HANA (improved version). To be executed in the PPM system. Alternatively, RPM_FICO_DATA_TRANSFER can be used (see above).

10.7.2.1.4 Required Manual Periodic Tasks

The following tasks must be carried out by an administrator.

Task or Transaction	Description	Recommended Frequency
SAP Load Generator Use transaction `SGEN` to start the SAP Load Generator.	Project Management: When you call the individual WebDynpro pages that make up Portfolio and Project Management for the first time, you may experience delays. This is because the individual pages are generated at runtime. To avoid this, we recommend that you centrally generate each page once.	After you have installed SAP Portfolio and Project Management for the first time or after an upgrade After importing Support Packages If you have added customer fields to SAP Portfolio and Project Management tables
Activate Internet Communication Framework (ICF) services	If you upgrade or implement a Support Package, the ICF may be deactivated and needs to be activated again. For more information, see the *Data Replication* section of the *Basic Settings* for *Project Management* in SAP Solution Manager.	After you have upgraded or implemented a Support Package
Standard Business Intelligence (BI) reports	To analyze your application data, you can use the standard reports and analysis tools of the SAP NetWeaver BI system.	As needed

Project Management

Task or Transaction	Description	Recommended Frequency
`DPR_EVE_BATCH_DPO`	Project Management: You can use this report to extract data from your projects and display the evaluations in Project Management. You can either plan the extraction of the data or trigger it manually.	As needed
`RPM_FES_AVAILABILITY`	To maintain the availability of resources over a period of time for better performance.	Whenever the availability of a resource changes

Task or Transaction	Description	Recommended Frequency
SHMM	Refresh Shared Memory: Start the transaction and mark the corresponding entry of area CL_DPR_FC_MAP_AREA and choose *Delete all Instances* to delete this shared memory area.	After you have changed the field control Customizing
SARA	To archive a project, specify the archiving object CPROJECTSand process the first step (Write).	As needed
RSIR_CONTENT_UNMARK_PRELIM	You can use this report to delete the temporary document content.	As needed
In the front-end system: *Portfolio and Project Administration* > *Services* > *Replace User / Resource*	You can replace users and resources in multiple objects, relevant subobjects, and in role-task assignments.	As needed

Portfolio Management

Task or Transaction	Description	Recommended Frequency
/RPM/PLANNING_DATA_DELETION	You can use this report to delete financial and capacity data.	As needed
RSIR_CONTENT_UNMARK_PRELIM	You can use this report to delete the temporary document content.	As needed
SARA	To archive Portfolio Management data, specify the respective archiving object RPM* and process the first step (Write).	As needed

10.7.2.1.5 Troubleshooting

For frequently asked questions, see SAP Note 2941639. For more information about performance, see SAP Note 2941643.

For more information about trace files and logs, see section Detailed Monitoring and Tools for Problem and Performance Analysis [page 62].

10.7.2.2 Commercial Project Management

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Commercial Project Management.

10.7.2.2.1 Monitoring

Detailed Monitoring and Tools for Problem and Performance Analysis

Project Workspace supports the use of SAP Business Rules Framework plus (BRFplus) to determine resource and resource type for cost elements and activity types.

Project Issue and Change Management supports the use of SAP Business Rules Framework plus (BRFplus) to:

- Determine business partners for issues and activities
- Determine additional activities for issues
- Find experts for certain activities

It is not recommended to activate these BRFplus traces for long periods of time as they are performance critical.

Procedure:

Trace data can be found in the BRFplus Workbench as follows:

1. Start the `BRFplus` transaction to launch the *BRFplus Workbench*.
2. Switch to the expert mode by choosing the *Personalize User* mode.
3. In the *Tools* menu choose *Lean Trace*.
4. Enter the required BRFplus function using the given selection data.
5. Start the search to see if any trace data is available.

Trace and Log Files

The Project Cost and Revenue Planning application uses the tracing functions of Analysis Office to trace actions performed in the planning workbook (Analysis Office).

You can also activate a trace file for Project Cost and Reveue Planning using the Activate Tracing button on the Financial Planning ribbon. Details of the items are recorded in the trace file (`CACPDFP_TRACE_LOG.log`).

Important Log Files for Project Cost and Revenue Planning

In the CA-CPD-FP component, the following log objects are created in SLG0:

- Log Object ID: `/CPD/PFP`
- Subobject ID: `/CPD/ERP_TRANSFER`
- Subobject ID: `/CPD/IMPORT_DATA`

All the logs created during the transfer uses the log object and the subobject to identify the logs efficiently.

External ID: A unique external ID of the log is created whenever a new version is created. The external ID is used at the time of the creation of the log. The log database contains an index in the fields `OBJECT/SUBOBJECT/LOG` and `EXTENAL ID`. If these fields are specified, the system reads the log from the database, efficiently (without a full table scan).

The application logging infrastructure supports a hierarchical display of logs. The log is shown in a hierarchical format with two levels. To achieve this, all generic messages are added at level 1; and the granular and object-type-specific messages are added at level 2.

Important Trace Files for Project Cost and Revenue Planning

Component	Content	File	Path
Project Cost and Revenue Planning (CA-CPD-FP)	• Queries • Planning functions • Errors • Flow of subroutines and functions	`CACPDFP_TRACE_LOG.log`	Example: \sapdb\data\wrk\db

Activating Trace Files

When you launch the Analysis Office, choose *Activate Tracing* in the *Financial Planning* ribbon. A dialog box prompts you to choose a location to save the trace files (on the local disk). This activates the tracing in the Project Cost and Revenue Planning application. For information about tracing related to Analysis Office, see https://help.sap.com/viewer/p/SAP_BUSINESSOBJECTS_ANALYSIS_OFFICE.

Dsiplaying Trace Files

To display the trace files, you must go to the location specified by you when you had activated the trace file using the *Activate Tracing* button in the *Financial Planning* ribbon.

Deleting Trace Files

You can use the *Delete Trace Log* pushbutton to delete an existing trace file. Note that if you change the name of the trace file from `CACPDFP_TRACE_LOG.log` to something else, you cannot delete the trace log. To create a new trace file, you can choose *Activate Tracing* again.

10.7.2.2.2 Periodic Tasks

This section describes all automatable tasks required to run periodically in order to keep the application running smoothly over time. Such tasks may be required on component level and are therefore relevant in each scenario that uses the component. Other tasks may be relevant for certain scenarios only. It is important that you monitor the successful execution of these tasks on a regular basis.

Scenario-Specific Scheduled Periodic Tasks in Project Cost and Revenue Planning

Required for Scenario	Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
Removes inconsistencies from the BW InfoCube; these may be caused by changes in the project structure	`/CPD/PFP_MAINTAIN_CONSISTENCY`	Transaction SM36	Weekly	If there is any change (deletion of nodes) in the project structure on which the planning has already been done, this report deletes the planned

Required for Scenario	Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
				line items against the deleted node, from the BW InfoCube of Project Cost and Revenue Planning. This removes the inconsistencies caused by changes in the project structure.
Saves cost elements and activity types for a line item (only relevant when planning on cost elements)	`/CPD/PFP_CREATE_COSTELM_ACTTYP`	Transaction SM36	Weekly	When a user creates a new plan record in the planning workbook (Analysis Office), this report determines the cost elements and activitytypes defined in Customizing, and saves this into the BW InfoCube of Project Cost and Revenue Planning.
Updates staffed quantities for a request number from the MRS system to the BW InfoCube (relevant only if MRS integration exists)	`/CPD/PFP_SET_MRS_STAFFED_QTY`	Transaction SM36	Weekly	For each plan record, a document number is generated. The user enters the staffed quantity in the MRS system for a request. This quantity gets reflected in the MRS planning workbook after running this report.
Process chain to compress data of the BW InfoCube (/CPD/PFP_R01)	`/CPD/PFP_PC01`	Transaction RSPC	Weekly	This process chain is used to compress the data of the BW InfoCube before data compression. The process chain closes the open data request and drops and recreates the cube index.

Required for Scenario	Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
To delete plan data for employees who no longer have an active HR master record	`/CPD/PFP_EMP_DATA_CONSISTENCY`	Transaction SM36	Monthly	You can use this report to delete plan data for an employee who no longer has an active HR master record. The report deletes plan data from the InfoCube /CPD/PFP_R01.

10.7.2.2.3 Data Consistency

If related or identical data is stored in multiple places there may be the possibility of inconsistencies (for example, after a restore of a single component). The following table describes how consistency can be verified and how inconsistencies may be repaired.

Component / Data Store	Check Tool / Method	Detailed Description	Prerequisites
Project Cost and Revenue Planning	*Transaction code: RSRT > query /CPD/PFP_MP01_Q0001*	`This report shows the consistency of plan data and the Controlling posting data (if it had been changed) after the transfer to S4CORE. This report only shows the data consistency of work breakdown structure elements.`	The transfer to S4CORE is complete

10.7.2.2.4 Management of BW

The planning cube of Project Cost and Revenue Planning does not depend on data extraction from OLTP tables. It is a real-time cube into which data is directly written into and read from during planning activities. Using real-time data acquisition, new or changes to master data is constantly updated from source master data tables, into the InfoCube. Therefore, physical management of a data warehouse is not a mandatory activity. However, if you have a central BW installation and a local BW client for Commercial Project Management, then it is necessary to monitor both BW systems.

10.7.3 Product Compliance

10.7.3.1 Specific Monitoring Tools for Product Compliance

Monitoring is essential to running and managing SAP technology. The following sections provide information about monitoring specifically for Product Compliance. For more generic information, see Monitoring [page 9].

10.7.3.1.1 Monitoring Processes and Workflows in Product Compliance

10.7.3.1.1.1 Monitoring Scheduled Processes

The process scheduler of Product Compliance is used for recurring tasks. You can use the following transactions to monitor the scheduled processes:

List of Transactions

Transaction	Description
SLG1	Application log
SM37	Job log The scheduler uses a job that is triggered by a product compliance event to do its work. In addition to the application log, you can also find information about the scheduler executions in this transaction. To display only the jobs related to the Product Compliance scheduler, you can filter by job name R_EHFND_PCEP_EVT_QUEUE_WORKER. In addition, you should change the user name parameter to "*" (asterisk), as the jobs are always run under the last user that created a scheduler entry.

10.7.3.1.1.2 Process Logs on the User Interface

In Product Compliance, you can view a list of change events or tasks and the corresponding logs on the user interface using the following apps:

- *Process Product Compliance Events*

- *Process Product Compliance Tasks*

Prerequisites

You have activated event type linkage as described in Customizing using the IMG activity *Product Compliance* > *Foundation for Product Compliance* > *Product Compliance Event Processing* > *Activate Event Type Linkage*.

10.7.3.1.2 Overview of Application Log Objects

The following table contains all the objects and subobjects that are used for the application log in Product Compliance.

List of Log Objects and Subobjects

Log Object	Log Subobject	Description
EHFND_CRRF (Product Safety & Stewardship, Runtime Framework)	KEYUSER	Log for the key user of the Compliance Requirement Runtime Framework of Product Safety & Stewardship
EHFND_PCEP (Product Compliance Event Processing	KEYUSER	Log for the key user of Product Compliance Event Processing
EHFND_PCTP (Product Compliance Task Processing)	KEYUSER	Log for the key user of Product Compliance Task Processing

10.7.3.2 Specific Troubleshooting for Product Compliance

10.7.3.2.1 Troubleshooting Failed Events and Tasks

You can troubleshoot failed events by checking the log of the failed event, correcting the error, and then processing the event again. For events that trigger tasks, all failed tasks must be resolved before the event can be processed successfully.

Troubleshooting Failed Events Without Tasks

Here's how to troubleshoot failed events without tasks. You know an event has not triggered any tasks if the *Task Progress* bar displays “0” in the *Process Product Compliance Events* app.

1. Open the *Process Product Compliance Events* app.
2. Choose the failed event on the *Failed* tab.
3. On the *Product Compliance Event* screen, choose *View Log*.
4. Fix the error or errors described in the log.
5. Open *Process Product Compliance Events* app again.
6. Select the event, and then choose *Process Again*.

Troubleshooting Failed Events with Failed Tasks

Here's how to troubleshoot failed events with tasks. You know that an event has triggered tasks and that at least one task has failed if the *Task Progress* bar displays a percentage other than “0” in the red section.

1. Open the *Process Product Compliance Events* app.
2. Choose the failed event on the *Failed* tab.
3. On the *Product Compliance Event*, choose a failed task.
4. On the *Task* screen, choose *View Log*.
5. Fix the error or errors described in the log.
6. Repeat the previous steps for all failed tasks belonging to the event.
7. On the *Process Compliance Event* screen of the failed event, choose *Process Again* to reprocess all tasks belonging to the event.

10.7.3.2.2 Form Generation with Output Management

Product Compliance uses output management for the generation of safety data sheets.

For more information, see Output Management [page 10]

10.7.3.3 Support Desk Management for Product Compliance

If issues arise when using SAP software, you can get in contact with the SAP support desk.

For general information about SAP support, see Support Desk Management [page 20].

For sending tickets for Product Compliance to SAP, choose one of the following components or subcomponents from the SAP component hierarchy.

- EHS-SUS (Sustainability)
  - EHS-SUS-FND (Sustainability Foundation)

- EHS-SUS-PMA (Product Marketability)
- EHS-SUS-SDS (Safety Data Sheets)
- EHS-SUS-DG (Dangerous Goods)
- EHS-SUS-CNT (Sustainability Content Data)

10.7.4 Product Safety and Stewardship

This section contains operations information about Product Safety and Stewardship for:

- Product Compliance
- Process Industries

10.7.4.1 Product Safety and Stewardship for Process Industries

This section contains information valid for:

- Basic Data and Tools
- Product Safety
- Global Label Management
- Dangerous Goods Management

10.7.4.1.1 Specific Monitoring Tools

Monitoring is essential to running and managing SAP technology. The following sections provide information about monitoring specifically for *Product Safety and Stewardship for Process Industries*. For more generic information, see Monitoring [page 9].

10.7.4.1.1.1 Component-Specific Monitoring

To monitor the availability of Windows Wordprocessor Integration servers (WWI servers) and Expert servers with CCMS, see SAP Note 1061242.

You can monitor the report shipping under *Edit Report Shipping Orders* (transaction `CVD1`). Under *WWI Monitor* (transaction CG5Z), you can monitor the report generation and the report shipping.

You can monitor the status of print requests that are generated in the SAP component *Global Label Management* in the *Labeling Workbench* (transaction `CBGLWB`).

10.7.4.1.1.2 Monitoring and Tools for Problem and Performance Analysis

Log and Trace Files

Use trace files and log files to analyze problems.

Important Log and Trace Files for Report Shipping (EHS-SAF-RSH)

Component	Content	File/Log Object	Path
EHS-SAF-RSH	Logging Report Shipping	Log object `CVDS`	SAP Application Log (transaction `SLG1`)

Important Log and Trace Files for Report Generation (EHS-BD-RDF)

Component	Content	File/Log Object	Path
EHS-BD-RDF	Logging Report Generation	Log object `EHRE`	SAP Application Log (transaction `SLG1`)

To log the report generation, set the environment parameter `REPORT_GENERATION_PROTOCOL` to `X` in the Customizing for *Basic Data and Tools* under *Specify Environment Parameters*.

Important Log and Trace Files for Global Label Management (EHS-SAF-GLM) Component Content

Component	Content	File/Log Object	Path
EHS-SAF-GLM	Logging Global Label Management	Log object `EHGL`	SAP Application Log (transaction `SLG1`)
EHS-SAF-GLM	Logging print requests that are processed in Global Label Management	Log object `EHPR`	SAP Application Log (transaction `SLG1`)

Important Log and Trace Files for Expert (EHS-BD-TLS-EXP)

Component	Content	File/Log Object	Path
EHS-BD-TLS-EXP	RFC log	Rfc*.log	Configured Expert log directory
	RFC trace	Rfc*.trc	Expert installation directory
	EXP log	Exp*.log	Configured Expert log directory
	Windows Event Log	-	Windows Control Panel - Event Viewer
	Dev_trc	dev_rfc.trc	Expert installation directory

Component	Content	File/Log Object	Path
	Application Log	object EHAD	SAP Application Log (transaction `SLG1`)

For more information on Expert logs and traces and how to enable them, see SAP Note 1364100.

Important Log and Trace files for WWI (EHS-BD-RDF-WWI)

Component	Content	File/Log Object	Path
EHS-BD-RDF-WWI	(1) Logging Report Generation	object EHAD	SAP Application Log (transaction `SLG1`)
	(2) WWI err file Trace of one generation	*.err	WWI root directory
	(3) Windows Event Log	-	Windows Control Panel - Event Viewer
	(4) WWI file log	*.log	Windows temp directory
	(5) RFC errors from RFC library	dev_rfc.trc	WWI installation directory
	(6) RFC trace	Rfc*.trc	WWI installation directory

1. To log the report generation, set the environment parameter `REPORT_GENERATION_PROTOCOL` to `X` in Customizing for *Basic Data and Tools* under *Specify Environment Parameters*.
2. To save temporary WWI files including the err file, set **dont_delete** to **1** under **[spool]** in WWI.INI.
   Temporary WWI files are used for error analysis by SAP Support.
   The amount of disk space that is consumed by the temporary WWI files can increase rapidly. For this reason, set **dont_delete** to **0** to switch off this setting.
   For further information, see SAP Note 959195.
3. You can also check the recent generation logs in the Windows Event Log for each WWI service.
4. To enable the WWI file log, set **LogToFile** to **1** under **[Global]** in WWI.INI.
   The WWI file log is mainly used for long-term error analysis and to analyze crashes of WWI.

   > ⚠ Caution
   >
   > The logs can consume a lot of disc space. For this reason, the log to file will slow down the WWI server. For further information, see SAP Note 778684.

5. `dev_rfc.trc` is enabled through Remote Function Call (RFC) by default.
   `dev_rfc.trc` logs RFC connection errors.
6. To enable the RFC traces, set **RFC_TRACE** to **1** in the SAPRFC.INI file of the RFC destination.
   The RFC library logs the complete binary RFC traffic to the file.
   Note that the generated log files consume a lot of disc space. Therefore, set **RFC_TRACE** to **1** in the SAPRFC.INI file when not required.

The WWI logs depend on the trace level that has been configured for WWI. The WWI trace level is configured as parameter -**T** in the WWI service. Trace level ranges from **0** (only fatal errors) to **5** (debug trace) Trace level **3** is set as default.

Workload Monitors

Monitor Details

Component	Monitor	Description	Prerequisites
Windows Wordprocessor Integration (for Product Safety)	*WWI Monitor* (transaction `CG5Z`)	Shows the queue of the report generation and report shipping orders in WWI.	You have configured the WWI generation in Customizing for *Basic Data and Tools* under *Specify Generation Servers*.
Windows Wordprocessor Integration (for print requests in EHS Global Label Management)	*Labeling Workbench* (transaction `CBGLWB`)	You can filter the print request queue by their states.	You have configured the processing of print request in Global Label Management.

Use the following filters in the *Labeling Workbench* to show the print requests in the respective status:

- Print requests bodies to be processes: status AA (Print request body exists)
- Print requests to be created: status ZS (Print request created, not yet processed)
- Print requests to be printed: status ZD (Print request ready for printing)

Other Problem Analysis and Monitoring Tools

Monitor Tool Details

Component	Monitor	Description	Prerequisites
Windows Wordprocessor Integration and Expert	WWI and Expert Server Administration (transaction `CGSADM`)	Here, you can check the configuration and the Windows event log of WWI servers and Expert servers, furthermore you can switch on logging and download log files.	Management Servers are set up (see Customizing for *Basic Data and Tools* under *Set Up Management Server*)
Windows Wordprocessor Integration (for Product Safety)	Job selection (transaction `SM37`)	Shows job logs	Use filter the following filters: • Job Name: **WWI*** • User Name:* • and after event: *

Component	Monitor	Description	Prerequisites
Windows Wordprocessor Integration (for print requests in Global Label Management)	Job selection (transaction SM37)	Shows job logs	Use filter the following filters: • Job Name: **EHSGLM_PRQ*** • User Name:* • and after event: *

Interface Monitors

Interface Details

Interface	Description	Technology Used
REPMAS	Reports are distributed from the product safety system to logistics systems.	IDoc
SUBMAS	Specification data is distributed from the product safety system to logistics systems.	IDoc
PHRMAS	Phrase data is distributed from the product safety system to logistics systems.	IDoc
DANGEROUSGOOD	Dangerous goods data is distributed from the product safety system to logistics systems.	IDoc
WWI*	There are several RFC functions (WWI*) which call the WWI server.	RFC
START_EXPERT_ SYSTEM	Calls the Expert rules engine.	RFC
RMS_SOLVE_RXM	Calls the Expert matrix solver.	RFC

Data Growth and Data Archiving Monitors

Most critical regarding database growth are reports as they consume considerable disc space. The documents are saved in the Document Management System (DMS). If you do not use an external DMS system, data base table DRAO increases in size and consumes considerable space.

To reduce the consumed database space, see SAP Note 586293.

To use data archiving see SAP Notes 915854 and 1093408.

To reduce database space consumed by specification data run report `RC1PHDEL` regularly. Specification data is not deleted by default but marked for deletion. Run report `RC1PHDEL` to delete the data on the database physically.

> **Note**
>
> Consider the applicable data retention policies.

You can define periodic tasks required to contain data growth (that is, to reorganize temporary data).

Data Consistency

If you store related or identical data in different locations, this can cause data inconsistencies, for example, after restoring a single component (such as Windows Wordprocessor Integration or Expert). The following table describes how you can verify data consistency and how you can repair data inconsistencies.

Component / Data Store	Check Tool / Method	Description	Prerequisites
Expert Cache	Initialize cache in transaction `CGSADM`	See *Expert Cache Initialization* documentation	You use the Expert cache.
WWI Print Request Cache	Delete cache	Delete the DMS folder on the WWI server. WWI will refill this cache.	You have configured the Customizing activity *Configure WWI Document Management System*.

10.7.4.1.2 Specific Management Tools

SAP provides you with infrastructure to help your technical support consultants and system administrators effectively manage all SAP components and complete all tasks related to technical administration and operation. The following sections provide information about managing *Product Safety and Stewardship for Process Industries*. For more generic information, see Management of SAP S/4HANA [page 10].

10.7.4.1.2.1 Starting and Stopping

Start and Stop Tools

Software Component	Tool	Description
Windows Wordprocessor Integration (WWI)	Windows Services	Start the watchdog service that is used for WWI (`EhsStart` or `EhsManagementServer`).

Software Component	Tool	Description
Expert	Windows Services	Start the watchdog service that is used for Expert (`EhsStart` or `EhsManagementServer`).

10.7.4.1.2.2 Software Configuration

This chapter explains the configurable components or scenarios that are used by *Product Safety and Stewardship for Process Industries* and the tools that are used to configure the settings.

Component Configuration Tools

Component	Configuration Tool(s)	Description
Windows Wordprocessor Integration (WWI) and Expert	Transaction `CGSADM`	Offers the most commonly used administration and configuration options that are necessary for WWI and Expert.
Windows Wordprocessor Integration (WWI) and Expert	`SvcAdmin.Exe`	Tool to change the Windows service settings.
Windows Wordprocessor Integration (WWI) and Expert	File `Saprfc.ini`	Used to configure the RFC destinations.
Windows Wordprocessor Integration (WWI)	File `WWI.INI`	Used to configure WWI.
Windows Wordprocessor Integration (WWI)	`ConPro.Exe`	WWI configuration program that guides the installation steps you have to proceed manually and that checks the consistency of the configuration.
Expert	`ExpAdmin.Exe`	Used to configure the Expert rule sets and the general Expert settings.

10.7.4.1.2.3 Administration Tools

List of Tools

Software Component	Transaction / Tool	Description	Prerequisites
Windows Wordprocessor Integration (WWI) and Expert	WWI and Expert Server Administration (transaction `CGSADM`)	Offers the most commonly used administration and configuration options that are necessary to implement WWI and Expert.	
Windows Wordprocessor Integration (WWI) and Expert	`SvcAdmin.Exe`	Used to change the Windows service settings.	
Windows Wordprocessor Integration (WWI)	File `WWI.INI`	Used to configure WWI, including the log files.	
Expert	`ExpAdmin.Exe`	Used to configure the Expert rule sets and the Expert settings including the trace levels.	

10.7.4.1.2.4 Periodic Tasks

Scheduled Periodic Tasks for Windows Wordprocessor Integration (WWI) and Expert

Program Name / Task	Task Scheduling Tool	Recommended Frequency	Description
Windows Update	Windows Update	1 / month	Install the Microsoft security updates on the WWI servers and Expert servers

Manual Tasks for Windows Wordprocessor Integration (WWI) and Expert

Task	Tool(s) Supporting this Task	Recommended Frequency	Description
Clean up logs and traces		1 / week	For Expert and WWI clean up the log and trace files as well as temporary WWI files. See *Trace and Log Files*.

10.7.4.1.2.5 Load Balancing

You can determine load balancing from *Product Safety and Stewardship for Process Industries* to Expert servers and WWI servers through Remote Function Call (RFC).

For more information see SAP Note 1061242.

Logging On and Load Balancing Setup / Tools

Scenario(s)	Description	Tools to be Used
Expert	Connect several Expert services to one RFC destination. RFC applies the load balancing automatically.	RFC
WWI	If you use several WWI servers on several RFC destinations, the load balancing is determined by the WWI dispatcher background job.	Customizing
WWI for Global Label Management	If you connect several WWI services to one RFC destination, RFC applies the load balancing automatically.	RFC
WWI for print request processing in Global Label Management	If you connect several WWI services to each RFC destination, RFC applies the load balancing automatically. The load is distributed through several decentralized WWI servers.	RFC Customizing

10.7.4.1.2.6 Management of Outdated Technical Data

For Expert and Windows Wordprocessor Integration (WWI), you must clean up the log and trace files as well as temporary WWI files. For more information, see the section *Log and Trace Files* in Monitoring and Tools for Problem and Performance Analysis [page 76].

10.7.4.1.3 High Availability

Product Safety and Stewardship for Process Industries follows the general high availability (HA) concept for all systems based on ABAP Platform. For more information, see Business Continuity and High Availability [page 15].

HA Setup

Component	Description	HA Setup Description
Windows Wordprocessor Integration (WWI)	Creation and printing of reports	See SAP Note 1061242
Expert	Calculation of secondary specification data	

Each of the above components can be a single point of failure in this scenario. In order to achieve high availability (HA) for the complete scenario, it is required that all components with single point of failures are setup with HA.

10.7.4.1.4 Specific Troubleshooting

For more information on troubleshooting Expert, see SAP Note 1364100.

For more information on troubleshooting Windows Wordprocessor Integration (WWI), see SAP Note 1058521.

10.7.4.1.5 Support Desk Management

If issues arise when using SAP software, you can get in contact with the SAP support desk.

For general information about SAP support, see Support Desk Management [page 20].

For sending problem messages/tickets for *Product Safety and Stewardship for Process Industries* to SAP, choose the appropriate component (or subcomponent) name from the SAP component hierarchy.

Remote Support Setup

To analyze Windows Wordprocessor Integration (WWI) and Expert issues you must set up a remote connection to the underlying Windows servers, for example, by Windows Terminal Services (WTS).

See SAP Note 35010 for setting up remote connections.

Problem Message Handover

Use the appropriate sub-component of *Product Safety and Stewardship.*

10.7.4.2 Product Compliance for Discrete Industries

This section contains information for *Product Safety and Stewardship* valid for Product Compliance for Discrete Industries

10.7.4.2.1 Specific Monitoring Tools for Product Compliance for Discrete Industries

Monitoring is essential to running and managing SAP technology. The following sections provide information about monitoring specifically for *Product Compliance for Discrete Industries*. For more generic information, see Monitoring [page 9].

10.7.4.2.1.1 Trace and Log Files for Product Compliance for Discrete Industries

Trace files and log files are essential for analyzing problems.

SAP Business Workflow Log

You can use the workflow log to inspect workflow instances. You can use either the standard view for end-users or the technical view. The technical view contains additional options for developers and administrators, such as inspecting workflows and work item containers.

To access the workflow log, you can use the following standard transactions to find a workflow:

Transaction Details

Transaction	Description
SWI6	Workflows for Object Use this if you know the ABAP class and key of the PCO that is related to the workflow that you are searching for.
SWI14	Workflows for Object Use this if you want to get all of the workflows that have a common PCO class.

> **Note**
>
> The PCO class that is used by your process is configured in Customizing under *Product Safety and Stewardship* > *Product Compliance for Discrete Industries* > *Foundation for Product Compliance* > *Process Foundation* > *Specify Process Definitions*.

Process Logs on the User Interface

In most places where *Product Compliance for Discrete Industries* uses workflows in the application, you can access the process progress log for this workflow easily from the user interface. You can access the log in the following ways:

- Choose the *See Also* menu to access the progress log for the underlying process.
- Select the status link for a process.

If your user is authorized to use the process tools, you can see pushbuttons on the progress log that take you to the more technical logs. For more information about the required authorizations, see the *Product Compliance for Discrete Industries* specific information in the *Security Guide for SAP S/4HANA* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610_002 ▶ *Product Documentation* ▶.

Tracing BOPF Data

You can use the BOPF data trace to analyze the runtime behavior of BOs. It can be configured to trace the data that flows through certain interfaces between BOPF and its environment. Traces are configured for the following flows of data:

- Service Provider <-> BOPF
- BOPF <-> Buffer
- Buffer Dispatcher <-> Node Buffers (if applicable)
- Buffer <-> Data Access (if applicable)
- BOPF <-> Association, Action, Determination, Query, Validation
- Association, Action, Determination, Query, Validation I <-> Internal Access (io_read, io_modify, io_check, io_query).

Trace Configuration Concept Tags

To configure traces in the *Business Object Processing Framework* (transaction BOBF), proceed as follows:

- In the menu under ▶ *Utilities* ▶ *Settings* ▶ select the checkbox *System Browser* and save your entry.
- In the added *System Browser* option, select *Application Flow & Data Trace* under *Runtime Tools*.
- Open the context menu by clicking the right-hand mouse button and select *Maintain Trace Settings*. Note that you can switch the trace on for different interfaces, specified users, and specified BOs.

> ⚠ Caution
>
> Activating a blank user name activates the trace for all users. Activating a blank BO name activates the trace for all BOs. Do not activate the trace for all users and for all BOs.

After activation, the tool writes trace data until it is deactivated. You should deactivate all of your traces after recording.

> ⓘ Note
>
> The trace does not work for a BO that is already in use at the time when you activate the trace.

Trace Analysis

To analyze or view the traces directly in the *Business Object Processing Framework* (transaction BOBF), proceed as follows:

- In the menu under *Utilities* > *Settings* select the checkbox *System Browser* and save your entry.
- In the added *System Browser* option, select the user for whom you want to view traces in *Application Flow & Data Trace* under *Runtime Tools*.
- Open the context menu by clicking the right-hand mouse button and select *Display Trace*.

Overview of Application Log Objects

The following table contains all the objects and subobjects that are used for the application log in *Product Compliance for Discrete Industries*

List of Log Objects and Subobjects

Log Object	Log Subobject	Description
`EHFND_FW` (Foundation for Product Compliance	`GENERAL`	General messages for the foundation for EHS
	`UI_COMMUNICATION`	UI communication.
	`WF_SCHEDULER`	The General Scheduler Log displays information about the executions of the scheduler, which scheduled process instances were executed, and which had errors.
	`WF_SCHEDULER_ITEM`	The Scheduler Item Log displays detailed information about the execution of scheduled process instances with detailed error information in case of errors.
`EHPRC_CP_CORE` (Product Compliance Core)	`AUTO_CHANGE_PROC`	Log for the automated change processing
	`WORKLIST`	Log for worklists
	`IMDS`	Log for IMDS processing
	`CPRVDR`	Log for Content Provider
	`CUSTOMIZING`	Log for Customizing
	`EMAIL`	Log for Email Processing
	`BOMBOS`	Log for BOMBOS
`EHPRC_PFR` (Product Compliance - Spreadsheet	`ADMIN`	Log for Administrators
	`DEV`	Log for Developers
`EHPRC_PFR` (Product Compliance - Spreadsheet Report)	`ADMIN`	Log for Administrators
	`DEV`	Log for Developers

Log Object	Log Subobject	Description
	PFR_BGR	Log for Background Spreadsheet Reporting
EHPRC_SCC (Product Compliance - Supply Chain Collaboration)	ADMIN	Log for Administrators

10.7.4.2.1.2 Workload Monitors for Product Compliance for Discrete Industries

Monitoring the Workflow and Process Foundation

The process foundation is essential to the business process of *Product Compliance for Discrete Industries*. It links together the SAP Business Workflow engine and the BOPF business objects of *Product Compliance for Discrete Industries*

You can monitor the processes with the following process tools:

- EHFND_WFF_PRCDEF_LST
- EHFND_WFF_PROCS_LST
- EHFND_WFF_TECH_WFIBO

Monitoring Scheduled Processes

The process scheduler of *Product Compliance for Discrete Industries* is used for recurring tasks and planned execution of a process instance. You can use the following transactions to monitor the scheduled processes:

Transaction Details

Transaction	Description
SLG1	Application log
SM37	Job log The scheduler uses a self-rescheduling job to do its work. In addition to the application log, you can also find information about the scheduler executions in this transaction. To display only the jobs related to the *Product Compliance for Discrete Industries* scheduler, you can filter by job name R_EHFND_SCHEDULER_JOB. In addition, you should change the user name parameter to "*" (asterisk) as the jobs are always run under the last user that created a scheduler entry.

For more information about the log objects for the scheduler, see section *Overview of Application Log Objects*.

Monitoring Automated Change Processing

The automated change processing handles relevant changes of compliance data automatically. As long as the affected compliance data is not up to date, it is considered to be pending. The monitoring application shows all pending records and the number of attempts to execute an entry. In case of problems, the user can view the application log for the errors that have occurred.

You can access this monitoring in the application under *Product Safety and Stewardship→ Compliance Worklists → Monitor Changes to Compliance Information*.

Monitoring Campaigns for Product Compliance

Campaigns are used to collate and organize communication with business partners. The monitoring application shows the status of a campaign and of tasks that have been started for the campaign. You can change administrative data, send reminders, send requests, and complete a campaign.

You can access this monitoring in the application under *Product Safety and Stewardship→ Supply Chain Collaboration → Search Campaigns*.

10.7.4.2.1.3 Data Consistency

Data can be inconsistent when related or identical data is stored in multiple places, for example, after you restore a single component. The following table describes how you can verify consistency and how you can repair inconsistencies.

Component / Data Storage	Check Tool / Method	Detailed Description	Prerequisites
PCBO <-> Business Workflow	Report R_EHFND_WFF_CORRECT_PCBOS	For more information, see the report documentation.	You have set up the process system correctly, including the process definitions in Customizing under *Environment, Health, and Safety* > *Foundation for EHS* > *Process Foundation* > *Specify Process Definitions*.

10.7.4.2.2 Specific Management Tools for Product Compliance for Discrete Industries

SAP provides you with infrastructure to help your technical support consultants and system administrators effectively manage all SAP components and complete all tasks related to technical administration and

operation. The following sections provide information about managing *Product Compliance for Discrete Industries*. For more generic information, see Management of SAP S/4HANA [page 10].

10.7.4.2.2.1 List of Administration Tools

The following tools are especially relevant to *Product Compliance for Discrete Industries*.

List of Administration Tools

Software Component	Transaction / Tool	Description
BOPF (Business Object Processing Framework)	BOBT	Test UI for BOPF. For analysis and change to the runtime data stored in business objects.
	BOB	Customization UI for BOPF. For analysis and enhancements of the structure/definition of business objects.
POWL, Work Inbox, Task Management	POWL_ADMIN_COCKPIT	This report is a single point of entry to perform different administrator activities relevant for personal object worklist (POWL) development, Customizing, and testing.
	POWL_D01	You can use this report to delete derived administration queries and user-defined queries. You might want to use the deletion report if administration queries have been changed, but the user has already received a derivation of the old version.
	POWL_D03	Check Consistency of POWL Table Entries.
	POWL_D04	Delete Cached Selection Criteria for Admin Queries.
	POWL_D07	Delete Shadowing Entries: This report deletes derived or user-defined POWL queries created in shadowing mode from the cache, based on application ID or user.
	POWL_WLOAD	Refresh Active POWL Queries: You can use this report to update queries. If you schedule the report as a background job, for example, you can update the queries overnight. Users then have access to the updated data when they start work, without having to refresh the data themselves. This is a way of controlling the server load.

Software Component	Transaction / Tool	Description
Process Setup, Process Scheduler	Report R_EHFND_PSE_DISABLE_ENTRY	The report allows you to disable one entry by providing the ID of the respective process setup as the parameter. The ID of the entry can be found in one of the messages in the scheduler log.
	Report R_EHFND_PSE_DISABLE_ERRONEOUS	The report allows you to disable all entries that have had more than a given number of errors since a given date.
Process Foundation	EHFND_WFF_GRAPH_WFLG	The Graphical Workflow Log enables you to open the graphical workflow log with the ID of a work item or workflow.
	EHFND_WFF_PRCDEF_CHK	The Process Definition Check runs several checks on a process definition.
	EHFND_WFF_PRCDEF_INF	The Process Definition Information displays detailed technical information about a process definition.
	EHFND_WFF_PRCDEF_LST	The Process Definition List shows the process definitions from the process definitions table (EHFNDC_PROCDEF).
	EHFND_WFF_PROCS_CHK	The Process Instance Check runs several checks on a process instance
	EHFND_WFF_PROCS_INF	The Process Instance Information displays detailed technical information about a process instance.
	EHFND_WFF_PROCS_LST	The Process Instance List shows process instances for a given process.
	EHFND_WFF_SYSTEM_CHK	The Process System Check runs several checks to see if the system has been correctly setup to use the process foundation.
	EHFND_WFF_TECH_WFIBO	The Technical Workflow Inbox displays the work items of a given user with technical information.
	EHFND_WFF_TECH_WFLOG	The Technical Workflow Log allows direct access to the technical workflow log using ID of a work item or workflow instance.
	EHFND_WFF_WI_INF	The Technical Information for Work Item displays detailed technical information about a work item and its related process.
	Report R_EHFND_WFF_CORRECT_PCBOS	The report helps to delete/disable PCBOs which are defective.

Software Component	Transaction / Tool	Description
	Report R_EHFND_WFF_SHOW_TASK_OF_WFID	The report lists all tasks that are used in a workflow template and indicates if they are background tasks.

> **Note**
>
> To execute the transactions for the process foundation, the PFCG role assigned to your user requires the authorization object EHFND_WFT with activity 16 and the transaction names.
>
> This also authorizes you to access these back-end transactions from the front end, for example, from the process progress log UI.

10.7.4.2.2.2 Data Archiving

For archiving data, *Product Compliance for Discrete Industries* makes use of the data archiving function within SAP S/4HANA.

Product Compliance for Discrete Industries provides configuration for the following archiving objects:

Application Objects	Provided Deletion Functionality
Worklists for compliance assessment	Archiving object EHPRC_WLCA
Worklists for regulatory changes	Archiving object EHPRC_WLRC
Intenational Material Data Sheets (IMDS)	Archiving object EHPRC_MDS
Compliance data records	Archiving object EHPRC_COD
Campaigns	Archiving object EHPRC_CMP
E-mail assignments	Archiving object EHPRC_PSA
Assessments and BOM transfers	Archiving object EHPRC_PBB

For more information, see also Data Archiving and Data Aging [page 13].

10.7.4.2.2.3 Scheduling of Periodic Tasks

If you have enabled integration into other applications, you have to run the following jobs periodically in order to keep *Product Compliance for Discrete Industries* running smoothly over time.

Periodic Task Details

Program Name/Task	Recommended Frequency	Detailed Description
R_EHFND_WFF_UPDATE_STATISTICS	Daily	See Customizing activity *Schedule Jobs for Process Statistics* (EHFND_WFF_STAT)
R_EHPRC_ACP_WORKLIST_DETERMINE	After event: SAP_EHPRC_ACP_NEW_CHANGE	See Customizing activity *Schedule Jobs for Automated Change Processing* (EHPRC_ACP_JOBS)
R_EHPRC_ACP_WORKLIST_EXECUTE	Every 10 Minutes	See Customizing activity *Schedule Jobs for Automated Change Processing* (EHPRC_ACP_JOBS)
R_EHPRC_ACP_WORKLIST_FUTUR_CHG	Daily during night	See Customizing activity *Schedule Jobs for Automated Change Processing* (EHPRC_ACP_JOBS)
R_EHPRC_SEND_EMAILS	Hourly or even faster	See Customizing activity *Schedule Jobs for Supply Chain Collaboration Process* (EHPRC_SCC_JOBS)
R_EHPRC_WL_REGCHG_GENERATE	After event: SAP_EHPRC_START_REG_WL_GENERATE	See Customizing activity *Schedule Jobs for Regulatory List Revision* (EHPRC_REGL_WL_JOBS)
R_EHPRC_WL_REGCHG_POST_PROC	Daily	See Customizing activity *Schedule Jobs for Regulatory List Revision* (EHPRC_REGL_WL_JOBS)
R_EHPRC_DPP_CLEANUP*	Before every ILM archiving process	The report prepares and verifies data for archiving. Its run needs to be finished before the ILM archiving process starts
R_EHPRC_IMDS_DOWNLOAD	Daily	See Customizing activity *Set Up Daily Synchronization with IMDS* (EHPRC_IMDS_SYNC)
R_EHPRC_IMP_APPL_BATCH_JOB Variants: • IMDS_PURE • IMDS_ORG • IMDS_REQ • IMDS_MODUL	Daily	See Customizing activity *Set Up Daily Synchronization with IMDS* (EHPRC_IMDS_SYNC)
R_EHPRC_IMDS_DOWNLOAD	Every 10 Minutes	See Customizing activity *Set Up Daily Synchronization with IMDS* (EHPRC_IMDS_SYNC)
R_EHPRC_PBB_SUPPL_CHNG_MON	Every 10 Minutes	See Customizing activity *Schedule Job for Changes in Supplier and Manufacturer Material Information* (EHPRC_PBB_JOBS)

**Job Dependencies*

Schedule report R_EHPRC_DPP_CLEANUP with option CDOs check Out of Busines every time before you run the preprocessing and the write program. This report verifies if any CDOs that are marked as end of business are used in any composition or supplier listing. If there are CDOs that are used in a composition or supplier listing, the report changes the lifecycle status to active which prevents the CDO from being archived.

You must schedule jobs specific to *Product Compliance for Discrete Industries* in your system and, where specified, in all the connected SAP systems. All jobs, unless otherwise specified, should be run at times of minimal system activity, so as not to affect performance or otherwise disrupt your daily operations.

10.7.4.2.3 Specific Troubleshooting for Product Compliance for Discrete Industries

The following sections provide information about troubleshooting and error handling for *Product Compliance for Discrete Industries*

For general information, see Troubleshooting [page 19].

10.7.4.2.3.1 Troubleshooting the Process Foundation

Since the process foundation is responsible for implementing your business processes in the system, it may be directly related to problems or problems may be found by analyzing the information available through the process foundation.

Problem: A Process Did Not Start

You can perform the following steps to troubleshoot this problem:

1. Make sure that the process did not really start. Processes that you can schedule may sometimes be delayed even if they are scheduled to run immediately because the process scheduler executes these processes. For more information, see the *Process Setup and Scheduled Processes* section.
2. Ensure that a short dump did not occur in transaction ST22.
3. Use transaction EHFND_WFF_PROCS_LST to search for the instance.
4. If you cannot find the instance there, it may be that the system has not yet established the linkage between the workflow and the PCBO. Usually, this linkage occurs during the call of the START_PROCESSING action of the PCBO through the workflow system. If this call fails or cannot successfully be finished (maybe the PCBO or another important component is currently locked and therefore the process has to wait), you may still find the process by searching for it in transaction SWI14. Note that you will need the name of the PCO class to use this transaction.
5. If you cannot find the process instance, there may be a problem with the system or the process definition.
6. Check if the system is correctly set up for using the process foundation of *Product Compliance* by executing transaction EHFND_WFF_SYSTEM_CHK.
7. If the system is set up correctly, check the process by executing transaction EHFND_WFF_PRCDEF_CHK for the process definition, or checking the status of the process definition in EHFND_WFF_PRCDEF_LST. The system provides information about possible problems.

8. If none of the above helped, you can also look at the event queue browser of SAP Business Workflow (transaction SWEQBROWSER), or the event queue administrator (transaction SWEQADM_1) and check if there were any events that could not be delivered.

Problem: Process Stopped

If a process stopped, you can perform the following steps:

1. Ensure that a short dump did not occur in the workflow execution. The workflow cannot catch these dumps and is not able to recognize that a problem has occurred. You can check for short dumps by analyzing transaction ST22.
2. If a short dump did not occur, execute transaction EHFND_WFF_PROCS_CHK either directly, or by selecting the Checkicon for your process in transaction EHFND_WFF_PROCS_LST. The system runs several checks on the instance and may give you information about what caused the problem.
3. If you still cannot find the problem, you can analyze the workflow log for your process. You can launch the workflow log, for example, from transaction EHFND_WFF_PROCS_LST by choosing the *Log* icon for the respective row.

The following information might be helpful when you troubleshoot the problem:

- Are there any problems with the agent assignment?
  Perhaps the work item could not be assigned to a user.
- Is there any information in the step details of the workflow instance or one of the work items?
  Maybe the workflow is just waiting because the object it is trying to change is currently locked.

Problem: Inconsistent Data

If a workflow or a PCBO instance has been deleted and the other part is still in the system, you can use report R_EHFND_WFF_CORRECT_PCBOS to correct inconsistencies.

10.7.4.2.3.2 Process Setup and Scheduled Processes

Processes that can be scheduled, for example, the processes that you start on the tasks tab in the application are not created directly after you choose the *Start Process* pushbutton; they are launched by the *Product Compliance for Discrete Industries* process scheduler. The scheduler is integrated into the process setup business object when they are due for execution. To avoid problems, ensure that you have activated the event type linkage for scheduled processes. For more information, see Customizing for *Product Compliance for Discrete Industries* under *Foundation* > *Process Foundation* > *Processes* > *Activate Linkage for Scheduled Processes*.

Almost all problems that could occur on execution will be reported in the application log (transaction SLG1) for the scheduler log objects. For more information, see the section *Overview of Application Log Objects* in Trace and Log Files for Product Compliance [page 85].

If there are issues with a scheduled process and the system executes it more than once, you can use reports to disable them. For more information, see List of Administration Tools [page 90] .

10.7.4.2.3.3 Form Generation with Adobe Document Services

To gain comprehensive information about how to troubleshoot the form generation with Adobe Document Services, see SAP Note 944221.

10.7.4.2.4 Support Desk Management

If issues arise when using SAP software, you can get in contact with the SAP support desk.

For sending problem incidents for *Product Compliance for Discrete Industries* to SAP, choose the appropriate component name from the SAP component hierarchy.

> **Note**
>
> For *Product Compliance for Discrete Industries*, the same application components are applicable as for component extension for *SAP EHS Management*.

- EHS-MGM (EHS Management)
  - EHS-MGM-FND (Foundation for EHS Management)
  - EHS-MGM-PRC (Product Compliance)

For general information about SAP support, see Support Desk Management [page 20].

10.8 Asset Management

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Asset Management.

10.8.1 Environment, Health, and Safety

This section of the Operations Guide for SAP S/4HANA contains information for Environment, Health, and Safety valid for:

- Incident Management
- Environment Management
- Health and Safety Management

10.8.1.1 Specific Monitoring Tools for EHS

Monitoring is essential to running and managing SAP technology. The following sections provide information about monitoring specifically for Environment, Health, and Safety. For more generic information, see Monitoring [page 9].

10.8.1.1.1 Monitoring Processes and Workflows in EHS

10.8.1.1.1.1 Monitoring the Process Foundation, Workflows, and Tasks

The process foundation is essential to the business processes supported by *Environment, Health, and Safety*. It links together the SAP Business Workflow engine and the BOPF business objects of *Environment, Health, and Safety* for all the solution's components.

You can monitor the processes with the following process tools:

- `EHFND_WFF_TECH_WFIBO`
- `SWIA`

The process scheduler of *Environment, Health, and Safety* is used for recurring tasks and planned execution of a process instance. You can use the following transactions to monitor the scheduled processes:

List of Transactions

Transaction	Description
`SLG1`	Application log
`SM37`	Job log The scheduler uses a self-rescheduling job to do its work. In addition to the application log, you can also find information about the scheduler executions in this transaction. To display jobs related to the scheduling of *Environment, Health, and Safety* tasks, you can filter by job name `R_EHFND_TDEF_SCHEDULER_JOB`. In addition, you should change the user name parameter to "`*`" (asterisk) as the jobs are always run under the last user that created a scheduler entry. To display only the jobs related to the *Environment, Health, and Safety* scheduler, you can filter by job name `R_EHFND_SCHEDULER_JOB`. In addition, you should change the user name parameter to "`*`" (asterisk) as the jobs are always run under the last user that created a scheduler entry.

For more information about the log objects for the scheduler, see Overview of Application Log Objects [page 99].

10.8.1.1.1.2 SAP Business Workflow Log

You can use the workflow log to inspect workflow instances. You can use either the standard view for end-users or the technical view. The technical view contains additional options for developers and administrators, such as inspecting workflows and work item containers.

To access the workflow log, you can use the following standard transactions to find a workflow:

List of Transactions

Transaction	Description
SWI6	Workflows for Object Use this if you know the ABAP class and key of the adapter that is related to the workflow that you are searching for.
SWI14	Workflows for Object Use this if you want to get all of the workflows that have a common adapter class.

10.8.1.1.2 Tracing BOPF Data

You can use the BOPF data trace to analyze the runtime behavior of BOs. It can be configured to trace the data that flows through certain interfaces between BOPF and its environment. Traces are configured for the following flows of data:

- Service Provider <-> BOPF
- BOPF <-> Buffer
- Buffer Dispatcher <-> Node Buffers (if applicable)
- Buffer <-> Data Access (if applicable)
- BOPF <-> Association, Action, Determination, Query, Validation
- Association, Action, Determination, Query, Validation I <-> Internal Access (io_read, io_modify, io_check, io_query).

Trace Configuration

To configure traces in the *Business Object Processing Framework* (transaction **BOBF**), proceed as follows:

- In the menu under *Utilities* > *Settings* select the checkbox *System Browser* and save your entry.
- In the added *System Browser* option, select *Application Flow & Data Trace* under *Runtime Tools*.
- Open the context menu by clicking the right-hand mouse button and select *Maintain Trace Settings*. Note that you can switch the trace on for different interfaces, specified users, and specified BOs.

> ⚠ Caution
>
> Activating a blank user name activates the trace for all users. Activating a blank BO name activates the trace for all BOs. Do not activate the trace for all users and for all BOs.

After activation, the tool writes trace data until it is deactivated. You should deactivate all of your traces after recording.

> **Note**
>
> The trace does not work for a BO that is already in use at the time when you activate the trace.

Trace Analysis

To analyze or view the traces directly in the *Business Object Processing Framework* (transaction BOBF), proceed as follows:

- In the menu under *Utilities* > *Settings* select the checkbox *System Browser* and save your entry.
- In the added *System Browser* option, select the user for whom you want to view traces in *Application Flow & Data Trace* under *Runtime Tools*.
- Open the context menu by clicking the right-hand mouse button and select *Display Trace*.

10.8.1.1.3 Overview of Application Log Objects

The following table contains all the objects and subobjects that are used for the application log in *Environment, Health, and Safety*

List of Log Objects and Subobjects

Log Object	Log Subobject	Description
EHFND_FW (*Foundation for EHS*)	GENERAL	General messages for the *Foundation for EHS*
	UI_COMMUNICATION	UI communication
	WF_SCHEDULER	The *General Scheduler Log* displays information about the executions of the scheduler, which scheduled process instances were executed, and which had errors.
	WF_SCHEDULER_ITEM	The *Scheduler Item Log* displays detailed information about the execution of scheduled process instances with detailed error information in case of errors.
EHFND_INTEGRATION (*Integration Framework*)	EHFND_EXT_NOTIF	Log for notifications to integrated systems, such as *PM*
EHHSS_BO_INC (*Incident Management*)	EHHSS_AIF_INC_INBD	Log for inbound processing of SAP Interactive Forms by Adobe in the incident management application
	EHHSS_HR_ABS	Log for HR absence notifications

Log Object	Log Subobject	Description
EHHSS_BO_RAS (*Risk Assessment*)	EHHSS_AIF_RAS_INBD	Log for inbound processing of SAP Interactive Forms by Adobe in the risk assessment application
EHHSS_BO_HSP (*Health Surveillance Protocol*)	EHHSS_RPT_HSP	Log for the batch report which sends health surveillance protocol proposals to occupational health.
EHFND_REP_FILL (*Chemical*)	FILL_CHM_BY_EHS_SUB	Log for the batch report which transfers chemical substances from *EHS Management* as part of *SAP ERP*.
	FILL_CHM_PHRASES	Log for the batch report which transfers phrases used in the chemical substances.
	FILL_REGL_BY_EHS_SUB	Log for the batch report which transfers regulatory lists
EHENV_EMIS (*Environment Management*)	AUTO_MDEF_CHECK	Scheduler job log for missing and due amounts
	CHK_CALC	Log for check job for approved amounts and calculation triggers

10.8.1.1.4 Tasks - Notifications to Integrated Systems

The system documents all notifications for tasks that are sent to integrated systems in the application log. You can display the created plant maintenance notifications in transaction IW23 (*Display PM Notification*).

10.8.1.2 Specific Management Tools for EHS

SAP provides you with infrastructure to help your technical support consultants and system administrators effectively manage all SAP components and complete all tasks related to technical administration and operation. The following sections provide information about managing *Environment, Health, and Safety*. For more generic information, see Management of SAP S/4HANA [page 10] in the *Getting Started* section.

10.8.1.2.1 List of Administration Tools

The following tools are especially relevant to *Environment, Health, and Safety*.

Software Component	Transaction / Tool	Description
BOPF (Business Object Processing Framework)	BOBT	Test UI for *BOPF*. For analysis and change to the runtime data stored in business objects.
	BOBF	Customization UI for *BOPF*. For analysis and enhancements of the structure/definition of business objects.
POWL, Work Inbox, Task Management	POWL_ADMIN_COCKPIT	This report is a single point of entry to perform different administrator activities relevant for personal object worklist (*POWL*) development, Customizing, and testing.
	POWL_D01	You can use this report to delete derived administration queries and user-defined queries. You might want to use the deletion report if administration queries have been changed, but the user has already received a derivation of the old version.
	POWL_D03	Check Consistency of *POWL* Table Entries.
	POWL_D04	Delete Cached Selection Criteria for Admin Queries.
	POWL_D07	Delete Shadowing Entries: This report deletes derived or user-defined *POWL* queries created in shadowing mode from the cache, based on application ID or user.
	POWL_WLOAD	Refresh Active *POWL* Queries: You can use this report to update queries. If you schedule the report as a background job, for example, you can update the queries overnight. Users then have access to the updated data when they start work, without having to refresh the data themselves. This is a way of controlling the server load.
Process Foundation	EHFND_WFF_GRAPH_WFLG	The *Graphical Workflow Log* enables you to open the graphical workflow log with the ID of a work item or workflow.
	EHFND_WFF_SYSTEM_CHK	The *System Checks for Process Foundation* runs several checks to see if the system has been correctly setup to use the process foundation.
	EHFND_WFF_TECH_WFIBO	The *Technical Workflow Inbox* displays the work items of a given user with technical information.
	EHFND_WFF_TECH_WFLOG	The *Technical Workflow Log* allows direct access to the technical workflow log using ID of a work item or workflow instance.

Software Component	Transaction / Tool	Description
	EHFND_WFF_WI_INF	The *Technical Information for Work Item* displays detailed technical information about a work item and its related process.
	Report R_EHFND_WFF_SHOW_TASK_OF_WFID	The report lists all tasks that are used in a workflow template and indicates if they are background tasks.

> **Note**
>
> To execute the transactions for the process foundation, the PFCG role assigned to your user requires the authorization object *EHFND_WFT* with activity 16 and the transaction names.
>
> This also authorizes you to access these back-end transactions from the front end, for example, from the process progress log UI.

10.8.1.2.2 Data Archiving

For archiving data, *Environment, Health, and Safety* uses the data archiving function within *SAP S/4HANA*.

Environment, Health, and Safety provides configuration for the following archiving objects:

List of Archiving Objects

Archiving Object	Description	Archived Data
EHHSS_INC	*EHS Incidents*	Data of the *Incident* business object
EHHSS_ISR	*EHS Incident Summary Reports*	Data of incident summary reports
EHHSS_RSV	*Risks Revisions*	Data records of risk revisions (partial archiving)
EHHSS_RSK	*Risks*	Data records of risks
EHHSS_RAS	*Risks Assessments*	Data records of risk assessments
EHHSS_SI	*Safety Instructions*	Data records of safety instructions
EHHSS_CEVL	*Control Evaluations*	Data records of control evaluations
EHHSS_CINS	*Control Inspections*	Data records of control inspections
EHHSS_CRPL	*Control Replacements*	Data records of control replacements
EHHSS_SPLC	*Sampling Campaigns*	Data records of sampling campaigns

Archiving Object	Description	Archived Data
EHFND_SPLG	*Samplings*	Data records of samplings
EHFND_CHA	*Chemical Approvals*	Data records of chemical approvals
EHFND_LOCP	*Assignments of Persons to Locations*	Data records of persons who are assigned to locations
EHFND_JOBP	*Assignments of Persons to Jobs*	Data records of persons who are assigned to jobs
EHENV_SCEN	*EHS Compliance Scenarios*	Compliance scenarios and tasks
EHFND_REQT	*EHS Compliance Requirement Tasks*	Tasks assigned to compliance requirements

All archiving objects comply with the rules of *SAP Information Lifecycle Management* (ILM). You can activate ILM in the *Switch Framework* (transaction SFW5).

Form more generic information, see Data Archiving and Data Aging [page 13].

10.8.1.2.3 Tools for Scheduling

If you have enabled integration into other applications, you have to run the following jobs periodically in order to keep *Environment, Health, and Safety* running smoothly over time.

List of Jobs

Program Name/Task	Recommended Frequency	Detailed Description
R_EHFND_SYNCEAM_LOCATION	Daily	See the Customizing activity *Schedule Jobs for Location Synchronization* (EHFND_LOC_SYNCEAM) under one of the following paths that is relevant for you: • *Environment, Health and Safety* > *Incident Management* > *Master Data Configuration* > *Locations* • *Environment, Health and Safety* > *Health and Safety Management* > *Master Data Configuration* > *Locations* • *Environment, Health and Safety* > *Environment Management* > *Master Data Configuration* > *Locations*

Program Name/Task	Recommended Frequency	Detailed Description
R_EHHSS_CHECK_HCM_ABS_CHANGED	Daily	See the Customizing activity *Schedule Jobs for HR Absence Check* (EHHSS_CHECK_HR_ABS) under *Environment, Health and Safety* > *Incident Management* > *Integration* > *Human Resources Integration*.
R_EHHSS_PROPOSE_HSPROTOCOLS	Daily	See the Customizing activity *Schedule Job for Recommending Health Surveillance Protocols* (EHHSS_PROP_HSPROT) under *Environment, Health and Safety* > *Health and Safety Management* > *Risk Treatment* > *Health Surveillance Protocols*.
1. R_EHFND_PHRASE_TRANSFER 2.R_EHFND_FILL_REGL_BY_EHS_SUBST 3. R_EHFND_FILL_CHM_BY_EHS_SUBST	Daily or less frequently	The reports should be executed in this order. See the Customizing activity *Schedule Job for Data Transfer of Chemicals* under *Environment, Health and Safety* > *Health and Safety Management* > *Master Data Configuration* > *Chemicals* > *Data Transfer from EHS Specification Database*.
R_EHENV_MDEF_CHECK_EXECUTE	Daily	See the Customizing activity *Schedule Job for Measurement Checks* (EHENV_MDEF_CHECK_EXE) under *Environment, Health and Safety* > *Environment Management* > *General Configuration*.
R_EHENV_CDEF_AUTO_CALC_JOB	On event SAP_EHFND_AMOUNT_CNG	See the Customizing activity *Schedule Job for Automatic Calculations* (EHENV_CDEF_AUTO_CALC) under *Environment, Health and Safety* > *Environment Management* > *General Configuration*.
R_EHENV_ADEF_AUTO_CALC_JOB	On event SAP_EHFND_AMOUNT_CNG	See the Customizing activity *Schedule Jobs for Automatic Aggregations* under *Environment, Health and Safety* > *Environment Management* > *General Configuration*.
R_EHENV_CDEF_AUTO_CALC_JOB_NP	Daily	See the Customizing activity *Schedule Jobs for Non-periodic Calculations* under *Environment, Health and Safety* > *Environment Management* > *General Configuration*.

→ Recommendation

All jobs should be run at times of minimal system activity, so as not to affect performance or otherwise disrupt your daily operations.

10.8.1.2.4 Transferring Data

Transferring Incident Management Data

You can transfer incident data in the following cases:

- Importing data from non-SAP systems to an SAP *Environment, Health, and Safety* system (component extension releases 3.0 to 6.0, and SAP S/4HANA 1511 and higher releases).
- Transferring data from an *Environment, Health, and Safety* system to another *Environment, Health, and Safety* system (component extension releases 3.0 to 6.0, and SAP S/4HANA releases 1511, 1610, and 1709).
- Transferring data between *Environment, Health, and Safety* systems of SAP S/4HANA 1809 or higher releases.

Transferring Workflows and Tasks

You can transfer workflows and tasks from *Environment, Health, and Safety* systems from any SAP S/4HANA release before SAP S/4HANA 1809 to SAP S/4HANA 1809 or higher releases using the new task management data model.

Transferring Specification Data

You can use three reports to transfer chemical data from the specification database of *SAP EHS Management* as part of *SAP ERP* or of *Product Safety and Stewardship* as part of SAP S/4HANA to the *Environment, Health, and Safety* system for use in health and safety management.

For more information about transferring data from the specification database, see the section *Managing Chemicals for Health and Safety Processes* on the SAP Help Portal at https://help.sap.com/s4hana_op_2020 ▶ *Product Assistance* ◀. Open the product assistance and go to the section on *Environment, Health, and Safety*.

10.8.1.2.5 Tools for Predictive Analytics

The *Emission Forecast* application is enabled for the use of predictive analytics.

For more information on the app, see the app description in the Product Assistance for Environment, Health, and Safety on the SAP Help Portal under Emission Forecast.

For more information on predictive analytics, see Predictive Models and What is a Predictive Scenario?.

10.8.1.3 Specific Troubleshooting for EHS

The following sections provide information about troubleshooting and error handling for *Environment, Health, and Safety*

For general information, see Troubleshooting [page 19].

10.8.1.3.1 Troubleshooting the Process Foundation

Since the process foundation is responsible for implementing your business processes in the system, it may be directly related to problems or problems may be found by analyzing the information available through the process foundation.

Problem: A Process Did Not Start

You can perform the following steps to troubleshoot this problem:

1. Make sure that the process did not really start. Processes that you can schedule may sometimes be delayed even if they are scheduled to run immediately because the process scheduler executes these processes. For more information, see section Setup and Scheduling of Processes and Tasks [page 108].
2. Ensure that a short dump did not occur in transaction `ST22`.
3. Use transaction `EHFND_WFF_PROCS_LST` to search for the instance.
4. If you cannot find the instance there, it may be that the system has not yet established the linkage between the workflow and the PCBO. Usually, this linkage occurs during the call of the *START_PROCESSING* action of the PCBO through the workflow system. If this call fails or cannot successfully be finished (maybe the PCBO or another important component is currently locked and therefore the process has to wait), you may still find the process by searching for it in transaction `SWI14`. Note that you will need the name of the PCO class to use this transaction.
5. If you cannot find the process instance, there may be a problem with the system or the process definition.
6. Check if the system is correctly set up for using the process foundation of EHS by executing transaction `EHFND_WFF_SYSTEM_CHK`.
7. If the system is set up correctly, check the process by executing transaction `EHFND_WFF_PRCDEF_CHK` for the process definition, or checking the status of the process definition in `EHFND_WFF_PRCDEF_LST`. The system provides information about possible problems.
8. If none of the above helped, you can also look at the event queue browser of SAP Business Workflow (transaction `SWEQBROWSER`), or the event queue administrator (transaction `SWEQADM_1`) and check if there were any events that could not be delivered.

Problem: Process Stopped

If a process stopped, you can perform the following steps:

1. Ensure that a short dump did not occur in the workflow execution. The workflow cannot catch these dumps and is not able to recognize that a problem has occurred. You can check for short dumps by analyzing transaction `ST22`.
2. If a short dump did not occur, execute transaction `EHFND_WFF_PROCS_CHK` either directly, or by selecting the Checkicon for your process in transaction `EHFND_WFF_PROCS_LST`. The system runs several checks on the instance and may give you information about what caused the problem.
3. If you still cannot find the problem, you can analyze the workflow log for your process. You can launch the workflow log, for example, from transaction `EHFND_WFF_PROCS_LST` by choosing the Logicon for the respective row.

The following information might be helpful when you troubleshoot the problem:

- Are there any problems with the agent assignment?
  Perhaps the work item could not be assigned to a user.
- Is there any information in the step details of the workflow instance or one of the work items?
  Maybe the workflow is just waiting because the object it is trying to change is currently locked.

Problem: Inconsistent Data

If a workflow or a PCBO instance has been deleted and the other part is still in the system, you can use report `R_EHFND_WFF_CORRECT_PCBOS` to correct inconsistencies.

10.8.1.3.2 Troubleshooting Tasks

Since the process foundation is responsible for implementing your business processes in the system, it may be directly related to problems or problems may be found by analyzing the information available through the process foundation.

Problem: A Process Did Not Start

You can perform the following steps to troubleshoot this problem:

1. Make sure that workflows are correctly set up in your system. To do so, call up transaction `SWU3` and make sure that everything is green.
2. Check that the linkage for the used workflows is active. You can do so in Customizing under *Environment, Health and Safety* > *Foundation for EHS* > *Process Foundation* > *Processes* > *Activate Linkage for Scheduled Processes*. In the standard solution, these workflows have *ABAP class* as an object category and *CL_EHFND_WFF_BASE_ADAPTER* as an object type.

3. Ensure that a short dump did not occur in transaction `ST22`.
4. You may find the workflow by searching for it in transaction `SWI14`. Note that you will need the name of the adapter class to use this transaction.
5. If none of the above helped, you can also look at the event queue browser of SAP Business Workflow (transaction `SWEQBROWSER`), or the event queue administrator (transaction `SWEQADM_1`) and check if there were any events that could not be delivered.

Problem: Process Stopped

If a process has stopped, you can perform the following step:

1. Ensure that a short dump did not occur in the workflow execution. The workflow cannot catch these dumps and is not able to recognize that a problem has occurred. You can check for short dumps by analyzing transaction `ST22` or `SWIA`.

The following information might be helpful when you troubleshoot the problem:

- Are there any problems with the agent assignment?
  Perhaps the work item could not be assigned to a user.
- Is there any information in the step details of the workflow instance or one of the work items?
  Maybe the workflow is just waiting because the object it is trying to change is currently locked.

10.8.1.3.3 Setup and Scheduling of Processes and Tasks

Processes and tasks that can be scheduled are launched by the *Environment, Health, and Safety* task scheduler. The scheduler is integrated into the process setup business object when they are due for execution. Ensure that you have activated the event type linkage for scheduled processes and tasks. For more information, see Customizing for *Environment, Health, and Safety* under *Foundation for EHS* > *Process Foundation* > *Processes* > *Activate Linkage for Scheduled Processes*.

Almost all problems that could occur on execution will be reported in the application log (transaction `SLG1`) for the scheduler log objects. For more information, see Overview of Application Log Objects [page 99].

If there are problems with a scheduled process or task which the system has executed more than once, you can find more information how to resolve them under Troubleshooting the Process Foundation [page 106] and Troubleshooting Tasks [page 107].

10.8.1.3.4 Form Generation with Adobe Document Services

To gain comprehensive information about how to troubleshoot the form generation with Adobe Document Services, see SAP Note 944221.

10.8.1.3.5 Notifications to Integrated Systems

If there are no problems with the process, check the monitoring transactions for notifications. For more information, see the section Tasks - Notifications to Integrated Systems [page 100].

Pay special attention to the requirements of these notifications as described in the Customizing for *Environment, Health, and Safety* under *Foundation for EHS* > *Integration* > *Specify Notification Types*.

10.8.1.4 Support Desk Management for EHS

If issues arise when using SAP software, you can get in contact with the SAP support desk.

For general information about SAP support, see Support Desk Management [page 20].

For sending problem messages/tickets for *Environment, Health, and Safety* to SAP, choose one of the following components (or subcomponents) from the SAP component hierarchy.

- EHS-SUS (Sustainability)
  - EHS-SUS-FND (Sustainability Foundation)
  - EHS-SUS-IM (Incident Management)
  - EHS-SUS-EM (Environment Management)
  - EHS-SUS-HS (Health and Safety Management)

10.8.2 Management of Change

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Management of Change.

10.8.2.1 Monitoring Tools for Management of Change

Monitoring is essential to run and to manage your SAP system. The following sections provide information about monitoring in *Management of Change*. For more generic information, see Monitoring [page 9].

10.8.2.1.1 Tracing and Logging Files

Tracing files and logging files are essential for analyzing problems. SAP S/4HANA uses the standard ABAP Platform tools for tracing and logging.

For more information, see Trace and Log Files [page 9].

Application Logs in Management of Change

The following table contains all objects and subobjects that are used for the application log in Management of Change.

Log Object	Log Subobject	Use
/IAM/COMMON	CATEGORY	In transaction SLG1, you can display messages resulting from access to reference objects using certain object categories. Change requests and activities have object references with categories defined in the Issue and Activity Management layer, for example, FL_ERP (functional location in SAP ERP) and DOC_ERP (document in SAP ERP).
/IAM/COMMON	GTYPE_ACCESS	In transaction SLG1, you can display messages resulting from access to reference objects using certain object types. Change requests and activities have object references with object types defined in the Issue and Activity Management layer, for example EQ (equipment) and FL (functional location).
Change Issue	Issue	In transaction DSLOG, you can display the application log for digital signatures.
Change Activity	Activity	In transaction DSLOG, you can display the application log for digital signatures.

Workflow Event Queues and Traces

Management of Change triggers SAP business workflow events. In order to monitor them, and to find and analyze any problems related to such events, you can use the tools for SAP business workflow event queue administration (transaction SWEQADM) and browsing. The workflow events that are relevant for Management of Change can be found via the following object types:

- For events related to change requests: /MOC/CL_ISSUE_WF_CONNECT
- For events related to activities: /MOC/CL_ACTIVITY_WF_CONNECT

10.8.2.1.2 Other Important Problem Analysis and Monitoring Tools

BRFplus Traces

Management of Change supports the use of SAP Business Rule Framework plus (BRFplus) to do the following:

- Determine business partners for change requests and activities.
- Determine additional activities for change requests by using change request information and question codes.

It is **not recommended** to activate these BRFplus traces for long periods of time as they are performance critical.

10.8.2.2 Specific Management Tools for Management of Change

SAP provides you with infrastructure to help your technical support consultants and system administrators effectively manage all SAP components and complete all tasks related to technical administration and operation. The following sections provide information about managing Management of Change. For more generic information, see Management of SAP S/4HANA [page 10].

10.8.2.2.1 Administration Tools

The following table lists the tools that are relevant to Management of Change.

Software Component	Transaction/Tool	Detailed Description
SAP_BS_FND	Business Object Processing Framework (BOPF) Transaction `/BOPF/CUST_UI`	Customization UI for BOPF for analysis and enhancements of the structure/definition of business objects. For more information, see SAP Note 1457235.
	Business Object Processing Framework (BOPF) Transaction `/BOPF/TEST_UI`	Test UI for BOPF for analysis and change to the runtime data stored in business objects.

Software Component	Transaction/Tool	Detailed Description
SAP_ABA	SAP Business Rules Framework Plus Transaction BRF+	You can carry out more complex business partner determination, activity determination, and expert determination using Business Rule Framework plus (BRFplus). In the BRFplus decision tables you enter parameters, for example, change request type, activity type, plant, country, duration of change, to search more specifically for additional business partners.

10.8.2.2.2 Data Archiving

For archiving data, Management of Change uses the data archiving function within SAP S/4HANA.

Management of Change provides configuration for the following archiving objects:

List of Archiving Objects

Archiving Object	Description	Archived Data
/IAM/ACT	Issue	Activities and their corresponding information
/IAM/ISSUE	Change Request (issue)	Change requests (issues) and their corresponding information

All archiving objects comply with the rules of *SAP Information Lifecycle Management* (ILM). You can activate ILM in the *Switch Framework* (transaction SFW5).

Form more generic information, see Data Archiving and Data Aging [page 13].

10.8.2.3 Support Desk Management for Management of Change

If issues arise when using SAP software, you can get in contact with the SAP support desk.

For general information about SAP support, see Support Desk Management [page 20].

For sending problem messages/tickets for Management of Change to SAP, choose the CA-IAM-MOC (Management of Change) component from the SAP component hierarchy.

10.9 Cross Applications

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Cross Applications.

10.9.1 Master Data Governance

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to MDG.

10.9.1.1 Interfaces

Interfaces use monitor tools that are essential for analyzing problems.

Interface	Monitor	Detailed Description
DRF	DRFLOG	Data Replication Log (SAP GUI)
DRF	DRFRSD	Display Object Replication Status (SAP GUI)
DRF	MDG_BS_WD_RSI_DISPLAY	Display Replication Status Information (Web Dynpro application)
Key Mapping	MDG_ANALYSE_IDM	Display/Search for Key Mapping (SAP GUI)
Key Mapping	MDG_BS_WD_ANALYSE_IDM	Display/Search for Key Mapping (Web Dynpro application)
Data Transfer	MDG_BS_DL_MONITOR_CONF	Data Transfer Monitor (Web Dynpro application)

10.9.1.2 Change Request Analysis

You can analyze change requests in the following ways:

- **Check how Quickly Change Requests are being Processed**
  For any time frame or change request priority, you can quickly identify the extent to which change requests comply with or violate target processing times. If you enable dashboards, you can view this information in an interactive graphical format.
- **Check the Status of Change Requests**
  For any time frame or change request priority, you can get a summary of the numbers of change requests completed and rejected, completed and accepted, and created. You can also get a summary of rejection reasons.

- **Assess your own Involvement with Change Requests**
  For change requests involving you, you can view a graphical summary of the nature of your involvement in a side panel.
- **MDG Track My Requests App**
  With the transactional app MDG Track My Requests, you can display all of your master data requests.

10.9.1.3 Scheduled Periodic Tasks

This section describes all automatable tasks required to run periodically in order to keep the application running smoothly over time. Such tasks may be required on component level and are therefore relevant in each scenario that uses the component. Other tasks may be relevant for certain business scenarios only. It is important that you monitor the successful execution of these tasks on a regular basis.

For MDG, you can plan a periodic report `RBDMIDOC` to trigger ALE outbound tasks based on change pointers.

Scheduled Periodic Tasks for Master Data Governance

Program Name/Task	Recommended Frequency	Detailed Description
DRFLOGDEL (RDRF_DELETE_LOG)	Weekly. More often, if high number of objects are replicated within a week	Deletes the application log data written by DRF as well as DRF internal log information
DRFRSDEL (RDRF_DELETE_REP_STA)	Same as DRFLOGDEL	Deletes the replication status information, but keeps the last record and the last successful record for each object instance/target system
MDGCPDEL (MDG_BS_CHANGE_POINTER_TOOLS)	Different for each object type; depends on whether change pointers are written at all and if yes, how many.	Deletes processed change pointers and by special request, also newly created ones.
DRFOUT	Depends on business case	Execution of data replication;DRFOUT can be used for manual replication as well as for regular planned deferred replication by using change pointers
USMD_EDITION_REPLICATE	On or shortly after the valid-from date (or period) for changes to the relevant business objects.	Ensures the timely replication of changes to edition-based business objects belonging to a data model in cases where the target system does not support time dependency for the relevant business objects.

10.9.1.4 Load Balancing and Background Processing

MDG uses the bgRFC (Background Remote Function Call) to schedule background processing and to parallelize data processing in process steps. MDG also uses bgRFC Configuration for distributing the processing load in systems.

You can monitor this background processing using the SBGRFCMON transaction. For information about the configuration of bgRFC, go to https://help.sap.com/s4hana_op_2020, enter *Parallelization in MDG, consolidation* into the search bar, press `Enter`, and open the search result with that title.

Scenarios	Detailed Description	Tools To Be Used
Data Replication with DRF using transaction DRFOUT	The report allows you to define settings for parallel processing.	Data Replication with DRF, using transaction DRFOUT
Data Export and Data Import	Both data export and data import can be started with multiple parallel processes.	Data Export and Data Import

10.9.1.5 Virus Scan Profile for MDG Request Applications

The virus scan profile `MDG_BS_FILE_UPLOAD/MDG_VSCAN` is used when uploading files to the MDG Request applications.

10.9.2 Enterprise Contract Management

This section of the Operations Guide for SAP S/4HANA contains information on operations tasks specific to Enterprise Contract Management.

10.9.2.1 Scheduled Periodic Tasks

Ensure the following automatic jobs are completed:

Program Name/Task
`SAP_LCM_CREATE_DOC_MISSING_AUTH`
`SAP_LCM_CTX_REMOVE_OBS_CATEG`
`SAP_LCM_CTX_STATUS_UPDATE`
`SAP_LCM_DELETE_DMS_FILE`

Program Name/Task
SAP_LCM_GENERIC_MASTER_JOB
SAP_LCM_LCA_AREAS_IMPORT
SAP_LCM_LCA_CATALOGUE_SYNC
SAP_LCM_LCA_DOCSYNC_STS_UPD
SAP_LCM_LCA_EVT_FAIL_EOP_RETRY
SAP_LCM_LCA_EVT_PROC_CHANGE_VAR
SAP_LCM_LCA_EVT_PROC_CRTD_VD_VAR
SAP_LCM_LCA_SCH_PROC_CHANGE_VAR
SAP_LCM_LCA_TMPL_IMPORT
SAP_LCM_LCA_TMPL_REIMPORT
SAP_LCM_LCA_VARIABLE_PROC
SAP_LCM_LCA_VIR_DOC_POLLING
SAP_LCM_LD_DELETE_EVENT
SAP_LCM_LD_DELETE_PERIODIC
SAP_LCM_LT_EVT_DOC_CNT_COPY
SAP_LCM_LT_SEND_EMAIL_REMINDERS
SAP_LCM_LT_STATUS_UPDATE
SAP_LCM_RELTN_USECASE_EVT_BSD
SAP_LCM_RELTN_USECASE_SCHEDULD
SAP_LCM_SYNCHRONIZE_CATEGORIES
SAP_LCM_DOCUSIGN_PROCESS_STATUS

10.10 SAP S/4HANA Industries

10.10.1 Agriculture

10.10.1.1 Agricultural Contract Management

There are certain administrative activities required for the proper functioning of Agricultural Contract Management (ACM). These activities need to be performed periodically as they affect the data integration, data consistency, and system performance. The following activities are specific to this solution:

- Monitoring
- Transport and Change Management

Monitoring

Monitoring is an essential task in ACM. This section describes the information about monitoring activities specific to ACM.

Monitoring of Error Messages

Error messages generated in the various applications that comprise ACM can be viewed from the following tool in the area menu:

SAP Menu > *Agricultural Contract Management* > *Tools* > *Display Application Log*

Monitoring of Queues

Monitoring Tool

Tool	Transaction	Use
bgRFC Monitor	SBGRFCMON	• Select erroneous and locked queues • Delete (all units for) the queue

Queues to be monitored by the above Monitoring Tool

Type of Queue	Search Parameter
Net Dry (Weighted Average Calculation) Net Dry queue is created for loads and unloads into BIN in the following cases: • If the value for constant GC_NETDRY_CALC_QUEUE_MODE is set to *X* in the table /ACCGO/T_CMN_CTS. • If there are locks on BIN by other users when weighted average calculation is started in non-queue mode. The lock is checked twice and weighted average calculation is started in queue mode in the third attempt.	• NETDRY_<**Plant**>_<**Material Name**>_<**Storage Location**>
Snip Quantity on Contract Closure Quantity of contracts will be adjusted automatically on contract closure. The snip quantity queue will be created for the contracts when they are closed from the Fiori application. A single queue will be created for multiple contracts which are selected for closure.	/ACCGO/CNTR_CL

Type of Queue	Search Parameter
Overfill Reversal Overfill Reversal queue is created when applications having an overfill ID are reversed from the: • Manual Application Workcenter • Reverse Application API • Document Flow Workcenter This leads to deletion of the overfill lots distributed against the application document. → Remember • Overfill lots should be created from the settlement (manual overfill lots created directly by the user in a contract are not considered). • The feature switch OF_REV_AT_APP_REV must be enabled in the Customizing for *Logistics (General)* under *Global Trade Management* > *Agricultural Contract Management* > *Basic Settings* > *Org. Level Feature-Switches* > *Activate Feature-Switch*.	/ACCGO/OF_REV_<**Overfill Pricing Lot ID**>
Contract Amendment Contract amendment bgRFC unit is created when a change is made to an amendment-relevant field in the contract. The execution of this bgRFC unit results in a transition of the contract status to *Awaiting Amendment Approval*.	/ACCGO/AMEND_*

Type of Queue	Search Parameter
Underfill Reversal Underfill reversal bgRFC unit is created when the following cases occur: • **Per Delivery** application that had an underfill is reversed. • FDI indicator is unset on an (**Per Contract** or **Per Delivery Period**) application document that had an underfill. → Remember The feature-switch UF_REV_AT_APP_REV must be activated in the Customizing for *Logistics (General)* under *Global Trade Management* > *Agricultural Contract Management* > *Basic Settings* > *Org. Level Feature-Switches* > *Activate Feature-Switch*. The execution of this bgRFC unit results in reversal of the underfill.	/ACCGO/UF_*

Monitoring Tool

Tool	Transaction	Use
qRFC Monitor (Outbound Queue)	SMQ1	• Select erroneous queues • Restart queues after errors have been fixed

Queues to be monitored by the above Monitoring Tool

Type of Queue	Search Parameter
Shadow Trading Contract Creation Shadow (Logistics) Trading Contract (LTC) queue is triggered whenever an order is created from standard transactions or Orchestration Framework (OF). The queues can be checked for any errors after the order is created. Call-off may go into *In-Process* status if the queue is in error or not executed as Call-off queues are dependent on LTC queues.	• WB2_TC_M_<**XXX**> (for purchase side) • WB2_TC_V_<**XXX**> (for sales side) Note Where **XXX** represents the order number (leading zeros must be considered for the order number to be 10 digits in length).

Type of Queue	Search Parameter
Call-Off Call-off queue is responsible for creating a call-off from sales order or purchase order transaction. Creation of a call-off may go into *In-Process* status if the queue is in error or not executed.	• /ACCGO/CO_M_<**XXX**> (for purchase side) • /ACCGO/CO_V_<**XXX**> (for sales side) **Note** Where **XXX** represents the order number (leading zeros must be considered for the order number to be 10 digits in length).

For more information about standard monitoring tools, go to https://help.sap.com/s4hana_op_2020, enter *Monitoring in the CCMS* into the search bar, press Enter, and open the search result with that title.

Transport and Change Management

The standard procedures of ABAP Platform apply for transport and change management issues in ACM.

For more information about these procedures, go to https://help.sap.com/s4hana_op_2020, enter *Change and Transport System* into the search bar, press Enter, and open the search result with that title.

10.10.2 Automotive

10.10.2.1 Vehicle Management System

This section describes specific operational details that are valid for Vehicle Management System

Vehicle Search Using SAP HANA

To search for a vehicle, ensure that the following settings are available:

- Initial setup of SAP HANA enterprise search
  For more details on the initial setup of SAP HANA search, go to https://help.sap.com/s4hana_op_2020, enter *Automatic Configuration Using Task Manager Task Lists* into the search bar, press Enter, and open the search result with that title.
- Establishing connection between enterprise search and SAP HANA

For more information, go to https://help.sap.com/s4hana_op_2020, enter *Creating a Connection Between Enterprise Search and SAP HANA* into the search bar, press `Enter`, and open the search result with that title.

10.10.3 Insurance

10.10.3.1 Policy Management

With Policy Management (FS-PM), you can map the whole life cycle of an insurance contract, starting from the creation of an application, through policy issuance and ongoing contract maintenance, right up to the termination of the contract.

10.10.3.1.1 Interface Monitors

Policy processing frequently triggers activities in other components such as Collections and Disbursements for Insurance (FS-CD) or Incentive and Commission Management for Insurance (FS-ICM). Therefore Policy Management (FS-PM) has to provide data to the interfaces to such components. So that FS-PM customers have the choice of connecting SAP solutions as well as non-SAP systems, these interfaces are implemented in enhancement spots and Business Add-Ins (BAdIs). The default implementations of these BAdIs delivered with Policy Management facilitate the remote connection to the SAP for Insurance solutions.

To ensure proper communication in a productive system landscape, these components are called asynchronously by means of qRFC technology (queued Remote Function Call) although the connected insurance solutions are running in the same technical system as FS-PM.

For more information about qRFC interfaces in FS-PM, search for **`qRFC Interface with Other Components`** in the documentation of SAP S/4HANA.

10.10.3.1.2 Data Consistency

FS-PM uses SAP NetWeaver update function modules in the persistence layer to guarantee transactional correctness. For more information, see SAP note 2682655.

10.10.3.1.3 Scheduled Periodic Tasks

10.10.3.1.3.1 Background Jobs Implemented with FPP

With Framework for Parallel Processing (FPP), you can efficiently execute and analyze business processes containing a high data volume in the following background jobs:

- Updating Policies/Contracts (`/PM0/ABY_FPP_FP_PA`)
- Transferring Cash Flow Documents (`/PM0/ABY_FPP_CFC`)
- Aggregating and Transfering Non Cash Flow Items (`/PM0/ABY_FPP_NCC`)
- Printing Correspondence (`/PM0/ABY_FPP_CORR`)
- Executing Scheduled Resetting Business Transactions (`/PM0/ABY_FPP_REV`)
- Resetting Update Runs (`/PM0/ABY_FP_R`)
- Removing Policy Postdating (BTS) (`/PM0/ABY_FPP_BTS`)
- Import IIS Data (`/MVA/AMY_FPP_IC_IMP`)
- Export IIS Data (`/MVA/AMY_FPP_IC_EXP`)
- Import CIC Data (`/MVA/AMY_FPP_ICDEIMP`)
- Export CIC Data (`/MVA/AMY_FPP_ICDEEXP`)
- Process CIC Data (`/MVA/AMY_FPP_ICDEMSG`)
- Monitoring of Temporary Type Classes (`/MVA/AMY_FPP_TYPCLA`)
- Process Registration Data (AT) (`/MVA/AMY_FPP_RS`)
- Background Processing: Registration (DE) (`/MVA/AMY_FPP_RSD`)
- Central Call - Selection of Annual Report (`/MVA/AMY_FPP_CE`)
- Reversal Due to Vehicle Change (`/MVA/AMY_FPP_CHGVEC`)

For more general information about FPP, search for **`Parallel Processing (FPP)`** in the documentation of SAP S/4HANA.

For more information about the background jobs provided in Policy Management, search for **`Parallel Processing in FS-PM`** in the documentation of SAP S/4HANA.

10.10.3.1.3.2 Postprocessing Errors of Mass Runs

Policy Management uses the Postprocessing Office (PPO) component to postprocess incorrect mass run activities. All the data relevant for postprocessing is combined in a postprocessing order. You can manually process and complete postprocessing orders in the Postprocessing Desktop. You can also complete and delete postprocessing orders using reports.

You access PPO in Policy Management with the following transactions:

- *Display Postprocessing Order* (`/PM0/ABT_PPO_SHOW`)
- *Change Postprocessing Order* (`/PM0/ABT_PPO_SHOW`)

For more general information about FPP, search for **`Postprocessing Office`** in the documentation of SAP S/4HANA.

10.10.3.1.3.3 Cleanup of Interim Tables of FS-CD Interface

Before FS-CD (Collections and Disbursements for Insurance) data is transferred to FS-CD, FS-PM saves this data in interim tables. After the transfer to FS-CD, the data remains in FS-PM and increases in the course of time. This may cause performance problems.

You can use the program `/PM0/ABT_CD_DEL_INTERIM_TABLES` to delete data that has already been transferred from the interim tables.

> ⓘ Note
>
> Schedule the Program `/PM0/ABT_CD_DEL_INTERIM_TABLES` as a recurring job. On initial execution, the runtime may be slightly longer.

10.10.3.1.3.4 Deleting Data in FS-ICM Interface Tables

You can use the program `/PM0/ABT_ICM_DEL_INTERIM_TABLE` to delete data that is no longer required in Policy Management and that has already been transferred to Incentive and Commission Management for Insurance (FS- ICM) in the interface tables `/PM0/ABDTMAPCLUS` and `/PM0/ABDTCLUST`.

10.10.3.1.3.5 Deleting Data in FS-CM Interface Tables

You can use the program `/PM0/ABT_CM_DEL_INTERIM_TABLES` to delete data in the interface table `/PM0/ABDACM` (Claim Information) that is no longer required and has already triggered follow-up processes in Policy Management.

10.10.3.1.3.6 Deleting Correspondence Data

You can use the program `/PM0/ABC_CORR_DEL_TABLE` to clean up the data records of the correspondence table (`/PM0/ABDCCORR`). This data is not required for further processing in FS-PM and can be deleted as long as there are no associated correspondence documents in the Documents table (`/PM0/ABDCDOCU`).

10.10.3.1.3.7 Deleting Data in FS-RI Interface Tables

You can use the program `/PM0/ABT_RI_DEL_INTERIM_TABLE` to delete the data for the interface to Reinsurance Management (FS-RI) that you no longer need in Policy Management. The program deletes the data records in the following interface tables:

- `/PM0/ABDTRIDATA`
- `/PM0/ABDTTRALLOC`
- `/PM0/ABDTTRIPREM`
- `/PM0/ABDTTRSEQ`
- `/PM0/ABDTTRSPLIT`

You can start the program on the *SAP Easy Access* screen under *Insurance* > *Policy Management* > *In-Force Business Management* > *Periodic Processing* > *Clean Up FS-RI Interface Data*. For more information, see the program documentation.

10.10.3.1.4 Manual Periodic Tasks

- Checking Application and Job Log of a Batch Run
  After each background job in Parallel Processing (FPP) (see Background Jobs Implemented with FPP [page 122]), you must check the application and job log of the background job. To access the logs, choose *Application Logs* or *Job Logs* in the relevant program.
  To analyze the application log independent of the background job started, start the *Analyze Application Log* (`SLG1`) transaction.
- Checking Outbound Queue for qRFC
  Check the outbound queue for qRFC regularly (with transaction `SMQ1`).
- Checking Postprocessing Orders
  The system creates postprocessing orders for specific errors. You must check these postprocessing orders regularly.
  You can access these postprocessing orders with the transactions *Display Postprocessing Order* (`/PM0/ABT_PPO_SHOW`) and *Change Postprocessing Order* (`/PM0/ABT_PPO_PROC`).

10.10.3.2 Claims Management

With Claims Management for Insurance, you can manage the entire claims process, from first notifcation of loss to claims adjustment and financial reporting.

10.10.3.2.1 Interface Background Jobs

Claims Management provides claim data to other modules, such as Collections and Disbursements (FS-CD), General Ledger (FI-GL), and SAP Reinsurance Management (FS-RI). Below you can find a list of programs that can be set up as background jobs to periodically send claims data to the respective downstream modules.

- `ICL_CF_CASE_RESERVE2LOT`
  This program creates the reserve lot for all the claims with reserve movements for the day.
- `ICL_CF_LOT2GL`
  This program posts the reserve lot created in the program `ICL_CF_CASE_RESERVE2LOT` to the general ledger.
- `ICL_CF_RECOVERY_FETCH`
  This program reports cash receipts to the Claims Management system.
- `ICL_RIDATA_UI`
  This program sends claim/loss data and settlement data to the SAP Reinsurance Management (FS-RI) system.
  It consists of the following parts:
  - It creates the preliminary loss.
  - It creates the preliminary loss accounts.

For more information, see the system documentation for the relevant program.

10.10.3.2.2 Mass Processing in Claims

You can use the Insurance Mass Processing (IMP) Manager for mass processing in Claims Management. Using the IMP Manager you can define triggers for subsequent processing and trigger them as soon as a certain target date is reached. You can set any target date of your choice. The triggers are processed by means of scheduled background jobs. Call transaction `ICL_TOUCH_MASS` to schedule and start the runs for mass activities.

For more information, search for **`Mass Processing`** in the documentation of SAP S/4HANA.

10.10.3.2.3 Repetitive Payments

You can generate an individual repetitive payment manually or automatically using the program `ICLH_REPREIMB_GENERATE`.

For more information, search for **`Use of Repetitive Payments`** in the documentation of SAP S/4HANA.

10.10.3.3 Insurance Product Engine msg.PMQ

With the product engine msg.PMQ, you can define and calculate insurance products. msg.PMQ consists of the following:

- PMQ.Designer
  Development and Test of product data with PMQ.Designer are carried out on the client computer of the particular user. PMQ.Designer works file-based, this means that all product data are stored as files in the file system of the client computer. Users solely work on those local data.
  For the central administration and the exchange of product data between users, PMQ.Designer must be configured for distributed work and be connected with a version control system. Users retrieve a local copy of the product data status from the version control system. Subsequently they can work at the same time and independently of each other without influencing each other. For providing modifications of the product data, at first they have to be transferred back to the version control system. Only then, they can be seen and again be retrieved by other users.
  All changes that are transferred to the version control system are saved separately (historization) and can be reproduced and examined in chronological sequence. As needed, changes may be rolled back and older status may be restored.
  Modern version control systems support the simultaneous provisioning of several versions of product data. This functionality is being used in the product development process with PMQ.Designer, e.g. for separately managing the actual development version and all already released product data versions (releases).
  If PMQ.Designer has been configured for example for Apache Subversion (SVN), then the product development for a completely new release takes place in the development line (trunk) of an SVN repository. Users retrieve the development line locally and make local changes and transfer those changes back to the repository until the development is finished. After completion of the development, the status for release gets separated from the development line. That is done by creating a release branch. Releases are represented in an SVN repository by branches. After branching, the development line and the release branch may be processed further independently from each other.
  When a release shall be created and delivered, the product data from a release branch typically are retrieved on a dedicated computer and are brought to the msg.PMQ deployment. The result is the provisioning of product data as C runtime compilate respectively as content archive (QAR). This provisioning process may also be automated via batch processes, e.g. for execution in a continuous integration environment.
- MSGPMCON
  The msg.PM Connection is used to import product data from C runtime compilates into a SAP system, and in the later process to send requests from Policy Management (FS-PM) to TOMATOSJ. During import, the product data are checked on compliance with required conventions.
- TOMATOSJ
  TOMATOSJ executes calculations on product data for requests from FS-PM. The product data have to be present in the file system as content archives (QAR files) and be accessible for the running TOMATOSJ XSA instances. All content archives have to be stored below a central content directory. The location of the contents directory is freely selectable, but the path has to be specified at the time of installation of TOMATOSJ. Content archives of a content that belong together are to be bundled in a specific hierarchy of subdirectories in the contents directory. The directory names of the hierarchy contain the export ID that is used for addressing the content archives in calculation requests, as well as the activation date, from which day on the content archive shall be available for calculations. TOMATOSJ scans the content of the contents directory periodically for changes and provides the recognized content archives for calculations automatically.

TOMATOSJ can use external tables for retrieving data from SAP HANA databases during calculations, if they have been defined in the content. The access to those databases is technically realized by JDBC connections. The login credentials for those connections already have to be configured during the installation of TOMATOSJ.
TOMATOSJ calculations and the returned result sets may be modified by request options.

For more information, see the attachments in the SAP Note 2635846.

10.10.4 Prepayment Agreements

There are certain administrative activities required for the proper functioning of Prepayment Agreements. These activities need to be performed periodically as they affect the data integration, data consistency, and system performance.

10.10.4.1 bgRFC Configuration Setting

The stop date for calculating interest is determined based on the date type (for example, goods receipt date, inbound delivery date and so on) specified in the *Stop Interest Date* field in a prepayment agreement.

Usually the actual stop interest date is captured synchronously during the processing of the relevant document, whereas the date is captured asynchronously if there is an error, for example, if an object is locked.

To revert to capturing the date synchronously and to retrigger the failed transactions, you have to set up Remote Function Call (RFC).

To do this, you can execute the program `PPMGCO_REP_TRIGGER_SETUP_BGRFC` (*Setup RFC Destination and bgRFC Inbound Destination*).

It will set up the background RFC inbound configuration by creating an RFC destination `PPMGCO_BGRFC_INBOUND` on the specified logon/server group.

10.10.5 Public Services

10.10.5.1 Investigative Case Management

This section describes specific operational details that are valid for Investigative Case Management (ICM).

Data Archiving

ICM supports data archiving and deletion techniques using standard ILM objects for all its entities. The customers can setup the data archiving functions regularly to archive any completed Leads, Cases, Activities or Incidents along with their master data (Persons, Objects, Locations) that are no longer relevant for their daily operations. This significantly reduces the load on the database and improves the applications performance

> ### Note
>
> ICM relationship table `CRMD_ICM_REL` is one of the fastest growing tables. It is therefore recommended to keep a close watch on the growing table size and have recurring jobs to archive or delete the data that are no longer required.

For more information about data archiving ICM entities, go to https://help.sap.com/s4hana_op_2020, enter *Archiving ICM Entities* into the search bar, press `Enter`, open the search result with that title.

Security Monitoring

ICM extensively supports restrictive access mechanisms and monitoring tools to help customers keep their information secure. However, tools like read access logging (RAL) or Hana Audit logging may produce large amount of log data daily. This may hamper the system performance if not cleaned up regularly.

Keeping a disciplined and strict access mechanisms among users is highly recommended for a healthy secure system. ICM security guide contains the authorization mechanism that customers can setup to derive different roles and security profiles.

For more information about different security and data protection support in ICM, see *Data Protection and Privacy* at the SAP help portal under https://help.sap.com/s4hana_op_2020 ▶ *Product Documentation* ▶ *Security Guide* ▶ *SAP S/4HANA Industries* ▶ *Public Services* ▶ *Public Sector* ▶ *Investigative Case Management* ▶.

Define Sequence of Cross-Object Search Parameters

In cross-object search, sequence of the search parameter plays a major role in search response time. For each ICM entity based on the frequent search patterns, customers can fine tune the search parameter sequence using the Customization. For more information, see cross-object search parameters in Customizing for *Service* under ▶ *Industry-Specific Solutions* ▶ *Public Sector* ▶ *Investigative Case Management* ▶ *General Settings* ▶ *Define Sequence of Cross-Object Search Parameters* ▶.

> ### Note
>
> Cross-object search is not supported for Manage Objects and Manage Locations apps.

Periodic Expunge Report Schedule

Expunging of the relationships can be achieved by scheduling the execution of the report `RCRM_ICM_REL_EXPUNGE` at regular intervals. On a successful action, the report also deletes personal data for expunged relationships. This special capability of ICM would complement the standard archiving technique.

11 Business Network Integration

SAP S/4HANA currently supports integration scenarios with the Ariba Network and with SAP Fieldglass.

11.1 Monitoring Business Network Integration: Overview

To monitor the integration of SAP S/4HANA with a business network, you have the following options, depending on your connectivity type:

- Output Management (only for **outbound** messages)
- Web Services Monitor (transaction `SRT_MONI`) - only for **direct** connectivity and connectivity via HANA Cloud Integration (HCI)
- Integration Engine: Monitor (transaction `SXMB_MONI`) - only for **mediated** connectivity via Process Integration (PI), therefore only available for the Ariba Network
- Application Interface Framework (AIF) - (**optional** component)

In addition, the application log (transaction `SLG1`) records the message exchange between SAP S/4HANA and the business network.

For error handling, you can use Forward Error Handling (FEH).

11.1.1 Monitoring of cXML Messages

Output Management (Only for Outbound Messages)

In the output management, you can monitor as well as cancel or resend messages for which the transfer to the Ariba Network has failed or has been performed with errors.

Starting point is the application itself, where you can display the output status and the output processing log. For example, in the *Manage Purchase Orders* app under *Output Items*, you can click *Open Action Menu* > *Show Application Log*. This takes you to the *Log Details*, where you can display the XML message ID. You can use this ID to find specific messages in various monitoring tools.

Web Service Monitor - (for Direct Connectivity and Connectivity via HCI)

In the Web Service Monitor (transaction `SRT_MONI`), you can monitor both inbound and outbound cXML messages. To monitor the messages exchanged with the business network, you have to filter for cXML messages. You do this on the *Standard Selection* tab: Under *Sender Information* and under *Receiver Information*, enter **`cXML*`** in the *Interface Name* field.

To cancel or restart messages for which an error has occurred in the transfer, you can use the *Actions* button.

You can use the report *Send Status Update for Canceled Inbound Messages* (`ARBFND_SEND_STATUS_CANCELLED`) to discard messages: The report selects messages that you have canceled manually in transaction `sxmb_moni` (*Integration Engine: Monitor*) and transfers the *Failed* status to the business network.

Integration Engine: Monitoring (Only for Ariba Network Using Mediated Connectivity)

In *Integration Engine: Monitoring* (transaction `SXMB_MONI`, you can monitor both inbound and outbound cXML messages. Double-click *Monitor for Processed XML Messages*. To filter for messages exchanged with the business network, you have the following options:

- On the *Standard Selection Criteria* tab, under *Sender Information* and under *Receiver Information*, enter **`http://sap.com/xi_ARBFND1`** in the *Interface Namespace* field.
- On the *Standard Selection Criteria* tab, under *Sender Information* and under *Receiver Information*, enter **`cXML*`** in the *Interface Name* field.

Informing the Ariba Network About Discarded Messages

If you do not use Forward Error Handling or SAP Application Interface Framework (AIF), you can use the report *Send Status Update for Canceled Inbound Messages* (`ARBFND_SEND_STATUS_CANCELLED`) to inform your suppliers on the Ariba Network about discarded messages: The report selects messages that you have canceled manually in the *Web Service Monitor* (transaction `SRT_MONI`) or in transaction the *Integration Engine: Monitor* (transaction `sxmb_moni`) and transfers the *Failed* status to the Ariba Network.

SAP Application Interface Framework (AIF)

You can use the SAP Application Interface Framework (AIF) to monitor cXML messages and perform related troubleshooting activities. AIF enables you to monitor different mechanisms for data exchange, such as XML, IDOC, etc.

In AIF, you can monitor the following cXML messages:

- All **inbound** cXML messages that are received in SAP S/4HANA.
- All **outbound** messages that are sent via **direct** connectivity or via HANA Cloud Integration (**HCI**).

For outbound messages that are sent via mediated connectivity, you have to use the monitoring tools provided by the middleware.

To display cXML messages in transaction *Monitor and Error Handling* (`/AIF/ERR`), you have to specify a namespace, for example the default namespace `/BNARB`.

In the *Monitor and Error Handling* transaction, you can do the following:

- Restart messages that were transmitted with errors.
- Edit the message payload.
- Display the same information as in the *Application Log* (transaction `SLG1`).
- Cancel messages.
  If you cancel inbound messages, the “Failed” status is transferred to the business network, informing the business partner about the cancellation of the message.

More Information

For more information about AIF, see:

- The sections about the SAP Application Interface Framework in this guide
- The user assistance for the SAP Application Interface Framework in SAP S/4HANA. It is available on SAP Help Portal at help.sap.com/erp.

11.1.2 Application Log

The application log (transaction `SLG1`) records all messages sent to or received from the Ariba Network or SAP Fieldglass. The log entries are listed under the `CXML_INTEGRATION` object. Note that log entries created in releases earlier than SAP S/4HANA 1610 can be found under the log object `ARIBA_INTEGRATION`.

There are four subobjects for further filtering:

- *INBOUND*
  The SAP S/4HANA system processes all messages belonging to the namespace http://sap.com/XI/ARBFND1 and the below defined interfaces. Corresponding entries are written to the application log. You can review the processing status of the entries. Note:
  - Messages that have been **pushed** into the SAP S/4HANA system by middleware create an entry only with the subobject *INBOUND*.
  - Messages that have been **polled** from a business network directly or via HCI into SAP S/4HANA have entries both under the *INBOUND* and the *POLLING* subobjects.
- *POLLING*
  If you run the integration with the business network through direct connectivity or via HCI, you must schedule a polling job, also known as Polling Agent, to retrieve messages. Each time the polling job runs, it writes an entry in the application log, listing the message type and timestamp when the system has polled. After messages have been polled from the business network, the log entry lists all message IDs (XML ID and payload ID) that have been retrieved and put in the queue for message processing.
  For more information about the polling jobs, see the documentation available in Customizing for Business Network Integration under the following paths:
  - *Integration with the Ariba Network* > *Framework Settings* > *Direct Connectivity Settings* > *Schedule Polling Agent*.
  - *Integration with SAP Fieldglass* > *Framework Settings* > *Direct Connectivity Settings* > *Schedule Polling Agent*.

- *OUTBOUND*
  Every message leaving the SAP S/4HANA system writes an entry to the application log with the subtype *OUTBOUND*. For direct connectivity and HCI, there are two entries:
  - An entry for the creation of the cXML message
  - An entry indicating whether the message has been transferred to the business network successfully.

Search in the Application Log

For inbound and outbound messages you can filter the application log entries by object and subobject as described above. To search for specific entries, you can enter a business object ID, a payload ID, or a XML message ID - preceded and followed by an asterisk (*) - in the *External ID* field.

Since many entries are created in the application log to record the message exchange with business networks, we recommend that you optimize your settings for archiving your application log.

For more information about this topic, go to https://help.sap.com/s4hana_op_2020, enter *Application Log (BC-SRV-BAL)* into the search bar, press `Enter`, and open the search result with that title.

11.1.3 Forward Error Handling

You can use Forward Error Handling (FEH) to monitor errors and to perform related troubleshooting activities.

In FEH, you can monitor errors that have occurred during transfer of the following cXML messages:

- All **inbound** messages that have been received in SAP S/4HANA.
- All **outbound** messages that have been sent via **direct** connectivity or via HANA Cloud Integration (**HCI**).

For outbound messages that are sent via mediated connectivity, you have to use the monitoring tools provided by the middleware.

Prerequisites

To use FEH, you have to define a resolution strategy that specifies whether and how processes are executed again or ended after errors or conflicts occur. You can define, for example, the periods during which a certain error can be corrected by automatically repeating the process. For more information, see Customizing for Cross-Application Components under *Processes and Tools for Enterprise Applications* > *Enterprise Services* > *Error and Conflict Handler* > *Define Resolution Strategy*. For business network integration, the component `BNS-ARI-SE-FND` is available for which you create the resolution strategy.

Postprocessing Desktop

A postprocessing order is created in FEH when there is an error in either inbound or outbound processing. Use *Error and Conflict Handler: Process Postprocessing Orders* (transaction `ECH_MONI_SEL`) to analyze the error.

The following table provides an overview of the business objects and the corresponding cXML messages for which errors may occur. Note that the "business objects" in the sense of FEH correspond to cXML message types.

"Business object", also referred to as "Business Process" in FEH	cXML Message Type
`ARBFNDOADP`	This object is used for error handling of **all outbound** cXML message types.
`ARBFNDCONF`	`ConfirmationRequest`
`ARBFNDSHIP`	`ShipNoticeRequest`
`ARBFNDINVC`	`InvoiceDetailRequest`
`ARBFNDSRVE`	`ServiceEntryRequest`
`ARBFNDCCPAYP`	`CopyRequestPaymentProposalRequest`
`ARBFNDQTEM`	`QuoteMessage`

Postprocessing Desktop: Edit Order

For troubleshooting, double-click a postprocessing order to edit the details. In the *Postprocessing Desktop – Edit Order: Details* screen you can perform the following actions to resolve the error:

- **Repeat**
  The *Repeat* action restarts the processing of the cXML message. This is usually done after you have resolved an error. For example, you may have changed the business object or the payload, or a temporary system issue has been resolved.
- **Display or change payload**
  To resolve an error, it may be necessary that you change the payload of a cXML message. You can make the required authorization settings in Customizing for Cross-Application Components under *General Application Functions* > *Error and Conflict Handler* > *Authorization for Payload Editor*.
  Use the *Details* icon in the message table to navigate from the Postprocessing Desktop to the application log, where you can display further information.
- **Confirm**
  The *Confirm* action changes the order status in the Postprocessing Office to *Completed*. You normally use this option if an inbound cXML message could not be transferred and you have applied the changes to the business document manually.
- **Discard**

The *Discard* action changes the order status in the Postprocessing Office to *Completed* and sends a StatusUpdateRequest cXML message to the Ariba Network to set the acknowledgement status of the corresponding Ariba document to *Failed*.

12 Central Procurement

With *Central Procurement*, you can integrate your SAP S/4HANA system or SAP S/4HANA Cloud system (which acts as a hub system) with other enterprise resource planning systems in your system landscape (for example, SAP S/4HANA, SAP S/4HANA Cloud, or SAP ERP) to offer centralized procurement processes over your entire system landscape. SAP S/4HANA currently supports integration with EHP 6 for SAP ERP 6.0 and higher, and SAP S/4HANA 1709 and higher, as connected systems.

Central Procurement offers the following scenarios:

- *Central Requisitioning*
  This scenario gives employees a unified shopping experience where they can create self-service requisitions in the hub system. They can, for example, select materials from the catalogs with desired sources of supply. This scenario also enables you to confirm the ordered goods in the hub system.
- *Central Purchase Contracts*
  This scenario allows you to create, change, and display contracts created centrally in the hub system. You can distribute the central purchase contracts to the connected systems, allowing purchasers from various parts of a company in different locations to take advantage of the negotiated terms and conditions.
- *Central Purchasing*
  This scenario gives you a single point of access to display and manage purchasing documents centrally. These documents can be those created in the hub system or documents extracted from the connected systems. This scenario provides the flexibility of connecting several systems across an organization and performing the procurement processes centrally.

You can perform monitoring and error handling in the hub system and in the connected systems to ensure that processes run seamlessly.

12.1 Monitoring and Error Handling in the Hub System

12.1.1 Monitoring in the Hub System

You can use the SAP Application Interface Framework in the hub system to monitor the integration of the hub system with the connected systems.

12.1.1.1 Enable SAP Application Interface Framework

You can use the SAP Application Interface Framework to monitor XML messages and perform related troubleshooting activities.

To enable the SAP Application Interface Framework, you must perform the following steps:

1. Enter transaction `/nSE38` in the hub system.
2. Enter the program name `MM_PUR_HUB_AIF_CONF`.
3. Run the program.

In the program log, you can then check that the configuration for the SAP Application Interface Framework has been enabled.

You now need to perform the following tasks:

- Monitor XML Messages [page 137]
- View XML Messages [page 138]
- Assign Recipients [page 138]

Monitor XML Messages

In the SAP Application Interface Framework, you can monitor the following XML messages if you have the role `SAP_BR_ADMINISTRATOR` assigned to your user:

- All inbound XML messages received in the hub system
- All outbound XML messages sent from the hub system

The inbound XML messages are the following:

XML Message	Scenario
`PurchaseRequisitionReplicationConfirmation_In`	This XML message is received in the hub system to confirm that a purchase requisition has been replicated in the connected system.
`PurchaseRequisitionSourcingNotification_In`	This XML message is received in the hub system to confirm that a purchase order has been created in the connected system.
`PurchaseContractDistributionConfirmationRequest_In`	This XML message is received in the hub system to confirm that the distribution request sent by the hub system was successful (contract was created successfully) or returned errors.

The outbound XML messages are the following:

XML Message	Scenario
`PurchaseRequisitionReplicationRequest_Out`	This XML message is triggered when a purchase requisition is created in the hub system and is sent for replication to the connected system.

XML Message	Scenario
`PurchaseContractDistributionReplicationRequest_Out`	This XML message is triggered when a central purchase contract is created in the hub system and is distributed to the connected systems.

View XML Messages

You can use the **Message Dashboard** in the SAP Fiori launchpad to display the XML messages. For more information, see the *SAP Application Interface Framework for Business Users* → *Interface Monitor* section of the Application Help for SAP Application Interface Framework on SAP Help Portal.

To view these messages in the connected systems, perform the following steps in the **Monitoring and Error Handling** transaction:

1. Go to transaction `/AIF/ERR`.
2. In the *Namespace* field, enter **`/MMHUB`**.
3. Choose *Execute*.
4. Perform either of the following tasks:
   - Restart the inbound messages that were sent with errors to the hub system.
   - Cancel the messages.

Assign Recipients

To monitor the errors in the **Message Dashboard**, you can assign users to recipients. Assigned users can receive notifications on SAP Fiori Launchpad if the notification center is enabled. For more information on how to enable the notification center and configure the notifications for the hub system, see Enable Notifications on SAP Fiori Launchpad [page 139].

To assign recipients in *Central Requisitioning*, proceed as follows:

1. Launch the **Assign Recipients** app.
2. Specify the namespace.
   The default namespace is `/MMHUB`.
3. Enter a message type for each recipient. The recipients for alerts are as follows:
   - `PROC_APPL` (Procurement Application Errors)
   - `PROC_TECH` (Procurement Technical Errors)
4. Choose *Execute*.
5. Specify a message type that defines the type of message to be included in an alert for each user. For example, *Application Error* or *Warning*. Additionally, you can assign your user to the recipient.
   After you have completed the steps above, you can get an overview of the users assigned to a recipient. You can also make new assignments.
6. Save your entries.

To assign recipients in *Central Purchase Contracts*, proceed as follows:

1. Launch the **Assign Recipients** app.
2. Specify the namespace.
   The default namespace is `/MMCCM`.
3. Enter a message type for each recipient. The recipients for alerts are as follows:
   - `CCM_APPL` (Central Purchase Contracts Application Errors)
   - `CCM_TECH` (Central Purchase Contracts Technical Errors)
4. Choose *Execute*.
5. Specify a message type that defines the type of message to be included in an alert for each user. For example, *Application Error* or *Warning*. Additionally, you can assign your user to the recipient.
   After you have completed the steps above, you can get an overview of the users assigned to a recipient. You can also make new assignments.
6. Save your entries.

More Information

For more information, see SAP Application Interface Framework on SAP Help Portal.

12.1.2 Error Handling in the Hub System

12.1.2.1 Enable Notifications on SAP Fiori Launchpad

You can configure notifications in the hub system to ensure that a user receives notifications about any failed actions. To enable notifications in the notification center on your SAP Fiori launchpad, you must perform the steps below in the hub system:

1. Log on to the hub system.
2. Enter transaction `SPRO`.
3. Go to *SAP NetWeaver* > *Notification Channel* > *Notification Channel Provider Enablement* > *Administration* > *Notification Provider Settings* > *Manage Notification Provider*.
4. Click *New Entries*.
5. Enter **`PROC_HUB_NOTIF_PROVIDER`** as *Notification Provider ID*.
6. Select *Is Active?*.
7. Save your entries.

Additionally, you must configure the following settings:

- To enable the notification center for receiving notifications, see the *Notification Channel* section in the SAP Gateway Foundation documentation for SAP NetWeaver 7.5 on SAP Help Portal.
- To enable the notification center for a specific user, you need to create a custom PFCG role. For more information, see the *Setup of Catalogs, Groups, and Roles in the SAP Fiori Launchpad* section of the implementation information for SAP Fiori on SAP Help Portal. You must assign the catalog `/UI2/CONFIG_NOTIFICATION` to this new role, as the properties to enable notifications are delivered using this catalog.

- To display and create notifications, you must have the authorization objects `S_RFC` and `S_RFCACL`. These authorization objects are delivered using the following role templates:
  - `/IWNGW/RT_USER_PRODU`
  - `/IWNGW/RT_USER_CONSU`

  You need to assign the templates above to the custom role that you have created.

  > **Note**
  >
  > If any actions fail during the import of sources of supply from the connected systems, only the user who has scheduled the job to extract the sources of supply receives notifications.

12.2 Monitoring and Error Handling in the SAP ERP System

12.2.1 Monitoring in the SAP ERP System

You can monitor the integration of SAP S/4HANA with SAP ERP in the SAP ERP systems depending on the connectivity type. The following table provides an overview of the monitoring tools and the respective transactions that can be used to monitor the connected systems:

Connectivity Type	Monitor	Transaction
Direct Connectivity	Web Services	`SRT_MONI`
Mediated Connectivity Using Process Integration (PI)	Integration Engine	`SXMB_MONI`

12.2.1.1 Monitor Web Services for Direct Connectivity

You can access the **Web Service Monitor** and monitor both inbound and outbound XML messages using transaction `SRT_MONI`. To monitor messages sent from the connected systems, you can filter based on the request or user by following the steps below:

1. Enter transaction `SRT_MONI`.
2. Go to the *Standard Selection* tab.
3. In the *Interface Name* field in the *Sender Information* and *Receiver Information* group boxes, enter the request you want to monitor.

12.2.1.2 Monitor Integration Engine for Mediated Connectivity

Using transaction `SXMB_MONI`, you can access *Integration Engine: Monitoring* and monitor both inbound and outbound XML messages by following the steps below:

1. Double-click *Monitor for Processed XML Messages*.
2. Go to the *Standard Selection Criteria* tab to filter for messages exchanged with the business network.
3. In the *Interface Namespace* field in the *Sender Information* and *Receiver Information* group boxes, enter http://sap.com/xi/HubERPI or enter the request you want to monitor.
4. Cancel or restart messages where an error has occurred in the transfer.

12.2.1.3 Messages to Be Monitored

The XML messages that you can monitor in the SAP ERP system are listed in this section.

The outbound XML messages are the following:

XML Message	Scenario
`PurchaseRequisitionReplicationConfirmation_Out`	This XML message is sent from a connected system to the hub system to confirm that a purchase requisition has been replicated in the connected system.
`PurchaseRequisitionSourcingNotification_Out`	This XML message is sent from a connected system to the hub system to confirm that a purchase order has been created in the connected system.
`PurchaseContractDistributionConfirmationRequest_Out`	This XML message is sent from a connected system to the hub system to confirm that the distribution request sent by the hub system was successful (contract was created successfully) or returned errors.

The inbound XML messages are the following:

XML Message	Scenario
`PurchaseRequisitionReplicationRequest_In`	This XML message is received in the connected system to replicate the purchase requisition created in the hub system.
`PurchaseContractDistributionReplicationRequest_ In`	This XML message is received in the connected system to create a purchase contract or scheduling agreement based on the central purchase contract in the hub system.

12.2.2 Error Handling in the SAP ERP System

The following sub-sections are only relevant for the *Central Requisitioning* scenario.

You can use Forward Error Handling (FEH) for error handling in SAP ERP systems.

Additionally, you can configure the alerts in the HUBERPI add-on in Central Procurement to receive e-mail notifications about any failed actions. The HUBERPI add-on is used for the integration of SAP S/4HANA with SAP ERP.

You can use transaction `SLG1` to view the logs related to the automatic creation of purchase orders from purchase requisitions.

12.2.2.1 Activate Forward Error Handling

You can use Forward Error Handling (FEH) to monitor errors and to perform related troubleshooting activities in the connected systems.

In FEH, you can monitor the errors that occurred during the transfer of inbound messages. These are the messages that were received in SAP ERP systems using direct connectivity or mediated connectivity.

Prerequisites

To use FEH, you must activate it in all connected systems. For more information, see Customizing for *Cross-Application Components* under *General Application Function* > *Error and Conflict Handler* > *Activate Error and Conflict Handler*.

In addition, you can define a resolution strategy that specifies whether and how processes are executed again, or ended after errors or conflicts occur. You can define, for example, the periods during which a certain error can be corrected by automatically repeating the process.

For more information, see Customizing for *Cross-Application Components* under *General Application Function* > *Error and Conflict Handler* > *Define Resolution Strategy*.

You can use the component `CA-SOA-ESM_ERP-PUR` if you need to create a resolution strategy for the integration of SAP S/4HANA with SAP ERP.

12.2.2.2 Monitoring and Resolving Errors Using Postprocessing Desktop

You can use the Postprocessing Desktop in FEH to monitor and correct errors in inbound processing.

A postprocessing order is created in FEH when an error occurs in inbound processing. Use *Error and Conflict Handler: Process Postprocessing Orders* (transaction `ECH_MONI_SEL`) to analyze

the error. The errors may occur for the business object `PURREQ009` and the XML messages `PurchaseRequisitionReplicationRequest_In`. To view the errors, enter the business process `PURREQ009` and component `CA-SOA-ESM_ERP-PUR`.

Postprocessing Desktop: Edit Order

For troubleshooting, double-click a postprocessing order to edit its details. On the *Postprocessing Desktop Edit Order: Details* screen, you can perform the following actions to resolve an error:

- **Repeat**
  The *Repeat* action restarts the processing of the XML message. This is usually done after you have resolved an error. For example, you may have changed the business object or the payload, or a temporary system issue has been resolved.
- **Display or change payload**
  To resolve an error, it may be necessary to change the payload of an XML message. You can make the required authorization settings in Customizing for *Cross-Application Components* under *General Application Functions* > *Error and Conflict Handler* > *Authorization for Payload Editor*. To change the payload, follow the steps below:
  1. Choose *Process*, add comments, and double-click *Change*.
  2. Choose *Save* after making the required changes.
  3. Choose *Repeat*. The Repeat action restarts the processing of the XML message.
  4. Click the *Details* icon in the message table to navigate from the **Postprocessing Desktop** to the application log, where you can display further information.
- **Confirm**
  The *Confirm* action changes the order status in the **Postprocessing Desktop** to *Completed*. You normally use this option if an inbound XML message could not be transferred and you applied the changes to the business document manually.
- **Discard**
  The *Discard* action changes the order status in the **Postprocessing Desktop** to *Completed* and sends a *PurchaseRequisitionReplicationConfirmation* message to the hub system to notify the employee.

12.2.2.3 Configure E-Mail Notifications

A user receives notifications using e-mail for the pre-configured alerts about any failed actions. The following alert categories are pre-configured in the HUBERPI add-on:

Alert Category	Description
PR_REPLICATION_FAILS	Failure while replicating a PR to the connected system
NO_AUTH_MAT_GRP_PLANT	No authorization to extract the Sources of Supply
NO_AUTH_MAT_GRP	No authorization to extract the Sources of Supply

Alert Category	Description
NO_AUTH_PLANT	No authorization to extract the Sources of Supply
PR_TO_PO_FAILURE	Failure during automatic conversion of a PR to a PO

To receive notifications, you can configure recipients by following the steps below:

1. Enter transaction `ALRTCATDEF`.
2. Choose the alert category classification for which you want to configure the recipients.
3. Choose either *Fixed Recipients* or *Recipients via User Roles* to maintain a user.

12.2.2.4 View the Application Log

Use transaction `SLG1` to access the application log. This log records all messages that are issued during the automatic conversion of a purchase requisition to a purchase order. These log entries are listed under the `MMPUR_S4PR_AUTOPO` object.

Filter the Application Log

You can filter the application log entries for inbound and outbound messages by entering a business object, as mentioned above. Because many entries are created in the application log to record the message exchange with the connected systems, we recommend that you optimize your settings for archiving your application log. For more information, see the *Application Log – User Guidelines* section of the Application Log documentation for SAP NetWeaver 7.5 on SAP Help Portal.

12.3 Monitoring and Error Handling in the SAP S/4HANA System

12.3.1 Monitoring in the SAP S/4HANA System

This section provides information on how to perform monitoring and error handling in the SAP S/4HANA system or SAP S/4HANA Cloud system that acts as the connected system. You can use the SAP Application Interface Framework in the connected system to monitor the integration of the hub system with the connected system.

12.3.1.1 Enable SAP Application Interface Framework

You can use the SAP Application Interface Framework to monitor XML messages and perform related troubleshooting activities.

To enable the SAP Application Interface Framework, you must perform the following steps:

1. Enter transaction `/nSE38` in the SAP S/4HANA system, which acts as the connected system.
2. Enter the program name `MM_PUR_HUB_BE_AIF_CONF`.
3. Run the program.

In the program log, you can then check that the configuration for the SAP Application Interface Framework has been enabled.

You now need to perform the following tasks:

- Monitor XML Messages [page 137]
- View XML Messages [page 138]
- Assign Recipients [page 138]

Monitor XML Messages

In the SAP Application Interface Framework, you can monitor the following XML messages if you have the role `SAP_BR_ADMINISTRATOR` assigned to your user:

- All inbound XML messages received in the connected system.
- All outbound XML messages sent from the connected system.

The inbound XML messages are the following:

XML Message	Scenario
`PurchaseRequisitionReplicationRequest_In`	This XML message is received in the connected system to replicate a purchase requisition created in the hub system.
`PurchaseContractDistributionReplicationRequest_In`	This XML message is received in the connected system to create a purchase contract or scheduling agreement based on the central purchase contract in the hub system.

The outbound XML messages are the following:

XML Message	Scenario
`PurchaseRequisitionReplicationConfirmation_Out`	This XML message is sent from a connected system to the hub system to confirm that a purchase requisition has been replicated to the connected system.

XML Message	Scenario
`PurchaseRequisitionSourcingNotification_Out`	This XML message is sent from a connected system to the hub system to confirm that a purchase order has been created in the connected system.
`PurchaseContractDistributionConfirmationRequest_Out`	This XML message is sent from a connected system to the hub system to confirm that the distribution request sent by the hub system was successful (contract was created successfully) or returned errors.

View XML Messages

You can use the **Message Dashboard** on SAP Fiori launchpad to display the XML messages. For more information, see the *SAP Application Interface Framework for Business Users → Interface Monitor* section of the Application Help for SAP Application Interface Framework on SAP Help Portal.

To view these messages in the connected system, perform the following steps in the **Monitoring and Error Handling** transaction:

1. Go to transaction `/AIF/ERR`.
2. In the *Namespace* field, enter the following:
   - `/MMHUB` for *Central Requisitioning*
   - `/MMCCM` for *Central Purchase Contracts*
3. Choose *Execute*.
4. Perform either of the following tasks:
   - Restart the inbound messages that were sent with errors to the hub system.
   - Cancel the messages.

Assign Recipients

To monitor the errors in the **Message Dashboard**, you can assign users to recipients. Additionally, these users can receive notifications on SAP Fiori launchpad if the notification center is enabled. For more information on how to enable the notification center and configure the notifications for the hub system, see Enable Notifications on SAP Fiori Launchpad [page 139].

To assign recipients in *Central Requisitioning*, proceed as follows:

1. Launch the **Assign Recipients** app.
2. Specify the namespace.
   The default namespace is `/MMHUB`.
3. Enter a message type for each recipient. The recipients for alerts are as follows:
   - `PROC_APPL` (Procurement Application Errors)
   - `PROC_TECH` (Procurement Technical Errors)

- `SOS_APPL` (SOS Extraction Application Errors)
- `SOS_TECH` (SOS Extraction Technical Errors)

4. Choose *Execute*.
5. Specify a message type that defines the type of message to be included in an alert for each user. For example, *Application Error* or *Warning*. Additionally, you can assign your user to the recipient.
   After you have completed the above steps, you can get an overview of the users assigned to a recipient. You can also make new assignments.
6. Save your entries.

To assign recipients in *Central Purchase Contracts*, proceed as follows:

1. Launch the **Assign Recipients** app.
2. Specify the namespace.
   The default namespace is `/MMCCM`.
3. Enter a message type for each recipient. The recipients for alerts are as follows:
   - `CCM_APPL` (Central Purchase Contracts Application Errors)
   - `CCM_TECH` (Central Purchase Contracts Technical Errors)
4. Choose *Execute*.
5. Specify a message type that defines the type of message to be included in an alert for each user. For example, *Application Error* or *Warning*. Additionally, you can assign your user to the recipient.
   After you have completed the above steps, you can get an overview of the users assigned to a recipient. You can also make new assignments.
6. Save your entries.

More Information

For more information, see SAP Application Interface Framework on SAP Help Portal.

12.3.2 Error Handling in the SAP S/4HANA System

12.3.2.1 Enable Notifications on SAP Fiori Launchpad

You can configure notifications in the connected SAP S/4HANA system to ensure that a user receives notifications about any failed actions. You need to perform the steps below in the connected system to enable notifications in the notification center on your SAP Fiori launchpad:

1. Log on to the SAP S/4HANA system.
2. Enter transaction `SPRO`.
3. Go to *SAP NetWeaver* > *Notification Channel* > *Notification Channel Provider Enablement* > *Administration* > *Notification Provider Settings* > *Manage Notification Provider*.
4. Click *New Entries*.
5. Enter **`PROC_BE_NOTIF_PROVIDER`** as the *Notification Provider ID*.
6. Select *Is Active?*.

7. Save your entries.

Additionally, you need to configure the following settings:

- To enable the notification center for receiving notifications, see the *Notification Channel* section in the SAP Gateway Foundation documentation for SAP NetWeaver 7.5 on SAP Help Portal.
- To enable the notification center for a specific user, you need to create a custom PFCG role. For more information, see the *Setup of Catalogs, Groups, and Roles in the SAP Fiori Launchpad* section of the implementation information for SAP Fiori on SAP Help Portal. You must assign the catalog `/UI2/CONFIG_NOTIFICATION` to this new role, as the properties to enable notifications are delivered using this catalog.
- To display and create notifications, you must have the authorization objects `S_RFC` and `S_RFCACL`. These authorization objects are delivered using the following role templates:
  - `/IWNGW/RT_USER_PRODU`
  - `/IWNGW/RT_USER_CONSU`

  You must assign the templates above to the custom role that you have created.

> **Note**
>
> If any actions fail during the import of sources of supply from the connected systems, only the user who has scheduled the job to extract the sources of supply receives notifications.

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