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Operations Guide for SAP S/4HANA 1610

THE BEST RUN **SAP**

Content

Document History

Version	Date	Description
1.0	October 31, 2016	Initial Version

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 *Technical Operations for SAP NetWeaver* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* .

> i Note
>
> You always find the most up-to-date version of this guide at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 .

The first section of the guide contains generic information, valid for the entire on-premise edition of SAP S/4HANA. The sections starting with SAP S/4HANA Enterprise Management [page 20] 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 also requires 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.
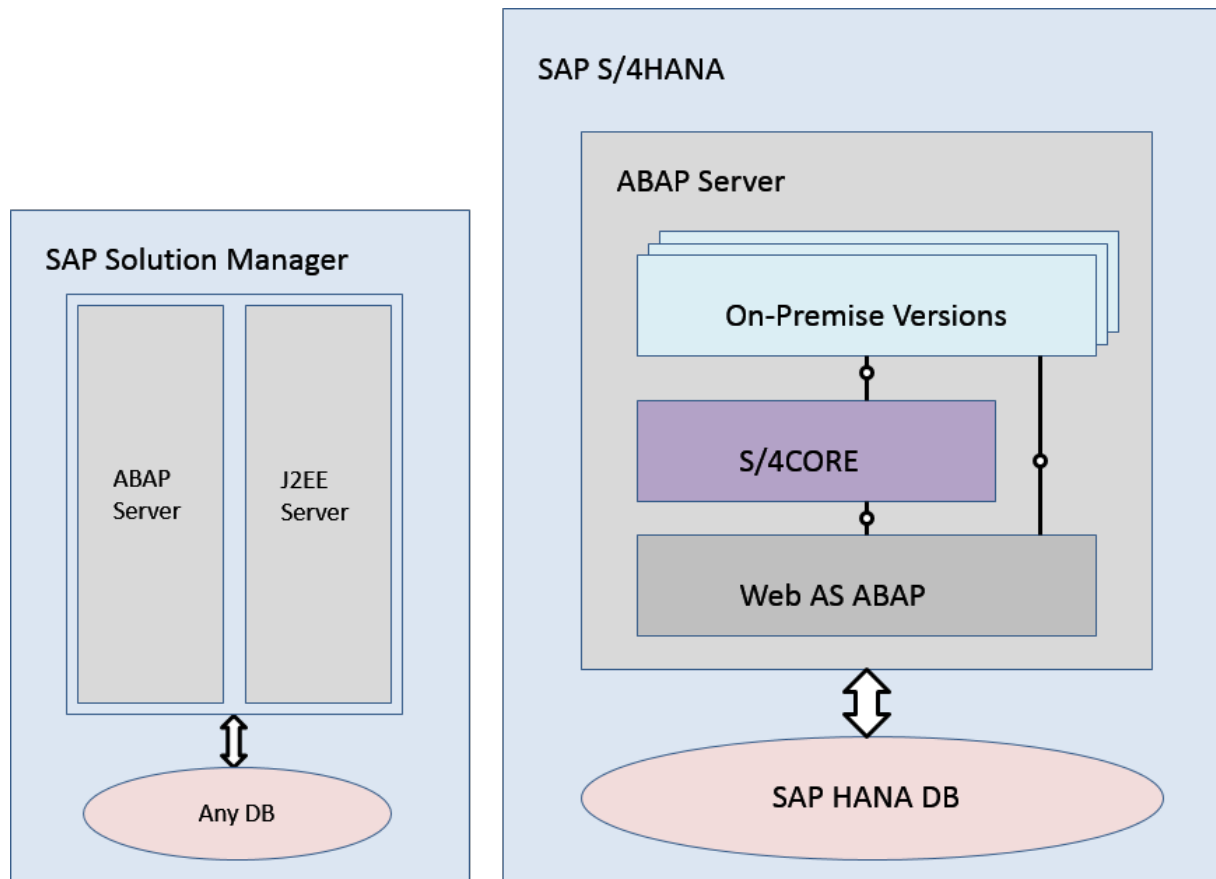
Simple SAP S/4HANA Deployment

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 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 List*.

For more information about the *Simplification List*, see the *Conversion Guide for SAP S/4HANA* at http://help.sap.com/s4hana_op_1610 ⤤ ▷ *Product Documentation* ⤤.
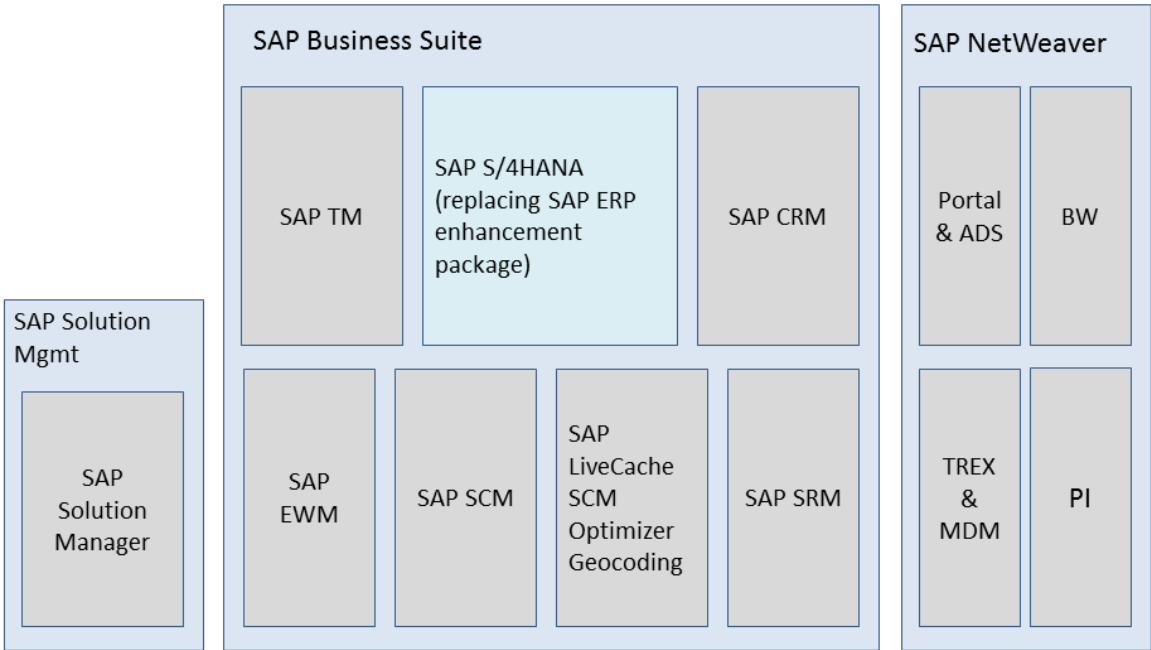
Example SAP Business Suite landscape with an embedded SAP S/4HANA system

More Information

For more information about SAP Fiori for SAP S/4HANA in a hub deployment, see Landscape Deployment Recommendations for SAP Fiori Front-End Server.

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, see the SAP Help Portal under http://help.sap.com/ s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* ❯ *Technical Operations for SAP NetWeaver* ❯ *Solution Life Cycle Management* ❯ *Solution Monitoring* ◣.

For more information about monitoring with SAP Solution Manager, see the SAP Help Portal under http:// help.sap.com/s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* ❯ *Technical Operations for SAP NetWeaver* ❯ *Solution Life Cycle Management* ❯ *Connecting a Technical System to SAP Solution Manager* ◣.

3.1 Alert Monitoring with CCMS

SAP S/4HANA uses the standard SAP NetWeaver 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, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* ❯ *Function-Oriented View* ❯ *Solution Life Cycle Management* ❯ *Solution Monitoring* ❯ *Monitoring in the CCMS* ◣.

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 12].

3.2 Trace and Log Files

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

For more information about this topic, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* ❯ *Technical Operations for SAP NetWeaver* ❯ *Solution Life Cycle Management* ❯ *Application Log (BC-SRV-BAL)* ◣.

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, see *Technical Operations for SAP NetWeaver* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ⤢ ▐▶ *SAP NetWeaver for SAP S/4HANA* ❭.

4.1 Starting and Stopping

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

For more information on the SAP Management Console, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ⤢ ▐▶ *SAP NetWeaver for SAP S/4HANA* ❭ *Technical Operations for SAP NetWeaver* ❭ *Solution Life Cycle Management* ❭ *Starting and Stopping SAP NetWeaver AS for ABAP and Java* ❭.

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 http://help.sap.com/s4hana_op_1610 ⤢ ▐▶ *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 the HANA 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 the SAP Help portal under http://help.sap.com/s4hana📌 ▷ *<choose a release>* ❯ *SAP NetWeaver for SAP S/4HANA* ❯ *Function-Oriented View* ❯ *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.

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:

- The SAP Help Portal under http://help.sap.com/s4hana_op_1610 *SAP NetWeaver for SAP S/4HANA* *Technical Operations for SAP NetWeaver* *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 SAP NetWeaver functions for load balancing.

For more information about this topic, see *Technical Operations for SAP NetWeaver* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 *SAP NetWeaver for SAP S/4HANA* .

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 SAP NetWeaver.

For more information about data archiving, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 *SAP NetWeaver for SAP S/4HANA* *Technical Operations for SAP NetWeaver* *Solution Life Cycle Management* .

For more information about monitoring of data archiving, see Alert Monitoring with CCMS [page 8].

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), see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* ▶ *Technical Operations for SAP NetWeaver* ▶ *Solution Life Cycle Management* ▶ ..

For more information about specific SAP S/4HANA data aging objects, see Efficient Logistics and Order Fulfillment [page 28].

5   User Management

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

For more information, see:

- *Security Guide for SAP NetWeaver* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ➤ *SAP NetWeaver for SAP S/4HANA* ❯
- *SAP HANA Security Guide* at the SAP Help Portal under http://help.sap.com/hana_platform/ ➤ *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 http://help.sap.com/s4hana_op_1610 ➤ *Product Documentation* ❯.

6 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 SAP NetWeaver functions for high availability and business continuity.

For more information about these topics, see:

- *Technical Operations for SAP NetWeaver* at the SAP Help Portal under http://help.sap.com/ s4hana_op_1610 📂 ▶ *SAP NetWeaver for SAP S/4HANA* ❭
- *SAP HANA Technical Operations Manual* at the SAP Help Portal under http://help.sap.com/hana_platform 📂 ▶ *System Administration* ❭

7 Software Logistics and Change Management

The tools and processes in *Software Logistics* help you to manage the system landscape in all lifecycle 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.

> **i 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, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 *SAP NetWeaver for SAP S/4HANA* *Technical Operations for SAP NetWeaver* *Solution Life Cycle Management* *Software Logistics* .

7.1 Change and Transport Management

SAP S/4HANA uses the SAP NetWeaver 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, see *Technical Operations for SAP NetWeaver* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 *SAP NetWeaver for SAP S/4HANA* .

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, see also the SAP Help Portal under http://
help.sap.com/s4hana_op_1610 ➦▮▶ *SAP NetWeaver for SAP S/4HANA* ❯ *Technical Operations for SAP
NetWeaver* ❯ *Solution Life Cycle Management* ❯ *Software Logistics* ▮.

7.3   Release and Upgrade Management

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

8 Troubleshooting

For more information about troubleshooting for SAP NetWeaver based systems, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 *SAP NetWeaver for SAP S/4HANA* > *Technical Operations for SAP NetWeaver* > *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 the SAP Support Portal under support.sap.com/access-support and the SAP Help Portal under http://help.sap.com/s4hana_op_1610

> SAP NetWeaver for SAP S/4HANA > Technical Operations for SAP NetWeaver > Solution Life Cycle Management > Remote Support Setup .

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/ > SAP Solution Manager 7.1 > 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 Enterprise Management

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 http://help.sap.com/s4hana_op_1610 ▶ *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 12]

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.

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`.

> **i 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.

10.3   Sales

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

10.3.1   Specific Monitoring Tools for Sales Contract Management

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)
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)

10.4 Sourcing and Procurement

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

10.4.1 Supplier Information and Master Data

This section contains information for Supplier Information and Master Data.

10.4.2 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 8].

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)

10.4.3 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.

10.4.4 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.

10.5 Supply Chain

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

10.5.1 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 12].

10.5.2 Extended Warehouse Management

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

10.5.2.1 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.

10.5.2.1.1 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 all 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 40])
Transaction SLG2 (report SBAL_DELETE)	Definition of Background Jobs	Weekly/monthly	Deletes application logs (see Overview of Trace and Log Files [page 38])
Report /SCWM/ R_REORG_DATA_CONT	Definition of Background Jobs		Deletes batch processing data from warehouse management monitor

Program Name/Task	Task Scheduling Tool	Recommended Frequency	Detailed Description
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/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 • R/3 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/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	Yearly/monthly	Deletes data that is no longer required for audit purposes
Report `/SCMB/ALEN_ALERT_DELETE`	Definition of Background Jobs	Weekly/monthly	Deletes alerts older than x days
Report `/SCWM/R_BW_COLLECTIVE_RUN`	Definition of Background Jobs		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_WM_ADJUST	Definition of Background Jobs		Posts differences (for example, warehouse task differences) to the system
Report /SCWM/ R_PDO_COMPLETE	Definition of Background Jobs	Daily	Completes outbound delivery order items with zero quantity
Report /SCWM/ R_REORG_EXCEPTION_SOLV ED	Definition of Background Jobs	Yearly/monthly	Warehouse logistics processing: Deletes the object-related history records of exception code processing

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 handling unit (HU) by 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
Dock Appointment Scheduling	Report /SCWM/ R_DAS_DELETE	Monthly	Deletes old SAP Dock Appointment Scheduling time slots and 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

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
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.
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 BEFplus	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 llean trace records for BRFplus
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/ R_TATT_DELETE`	Monthly or yearly, depending on the growth rate of the TATT DB table and the retention needs for TATT entries	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

Required for Scenarios	Program Name/Task	Recommended Frequency	Description
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 request for warehouse billing measurement and specifications of warehouse billing measurement
Transit Warehouse	Report `/SCWM/R_REORG_HU_TW_PPF`	Monthly	HU processing in transit warehouse: Deletes PPF action data specific to EWM

10.5.2.1.2 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

10.5.2.2 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).

10.5.2.2.1 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
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

Interface	Description	Technology Used
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

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 SAP NetWeaver 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 SAP NetWeaver 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.

Interface	Monitor	Description	Prerequisites
Production (Production Material Request)	`SMQ1/SMQ2`	Standard qRFC monitoring as described in the application help for SAP NetWeaver 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 SAP NetWeaver 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 SAP NetWeaver	
Warehouse Billing	`SXMB_MONI`	Standard SAP PI monitoring as described in the application help for SAP NetWeaver	
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 SAP NetWeaver	
Delivery Notifications	`SXMB_MONI`	Standard SAP PI monitoring as described in the application help for SAP NetWeaver	

> **i 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, see http://help.sap.com/s4hana under ▶ *<Your SAP S/4HANA*

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.

10.5.2.3 Overview of Trace and Log Files

Extended Warehouse Management (EWM) uses the application log (part of SAP NetWeaver) 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, see http://help.sap.com/s4hana_op_1610 under ❯ *SAP NetWeaver for SAP S/4HANA* ❯ *View All* ❯ *Function-Oriented View* ❯ *Solution Life Cycle Management* ❯ *Application Log – (BC-SRV-BAL)* ❯.

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

The following table contains all 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.

Log Object	Detailed Description	Activation/Deactivation
/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	
/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* ▌.

Log Object	Detailed Description	Activation/Deactivation
/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.

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 .

10.5.2.4 Data Growth and Data Archiving Monitors

Extended Warehouse Management (EWM) uses the standard tools available in SAP NetWeaver and does not require a component-specific tool. For more information, see the SAP NetWeaver Operations Guide on SAP Service Marketplace at http://service.sap.com/operationsnw75 .

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
Stock Management	Handling Units	WME_HU
Warehouse Logistic Processing	Warehouse Tasks and Goods Movement Documents	WME_TO
	Warehouse Orders	WME_WO
	Waves	WME_WAVE
	Telegram Flows	WME_MFS
	Relevant Resource Data	WME_RSRC

Application Component	Business Object/Document Category	Archiving Object
	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`
Express Shipping Interface	Manifests	`EWM_ESI_MF`
	Parcels	`EWM_ESI_PA`
Warehouse Billing	Warehouse Management Warehouse Billing Measurements	`EWM_WBM`

10.5.2.5 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 35].

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   Enterprise Technology

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

10.6.1 SAP Application Interface Framework

Use

This guide provides an overview of the system operations that are specific to the SAP Application Interface Framework.

Features

The SAP Application Interface Framework provides you with the following options for analyzing system operations:

- Archive data (see Data Archiving [page 42])
- Measure the performance of the SAP Application Interface Framework (see Performance Analysis [page 44])
- Examine interface data for the number of messages and errors (see Index Table Overview [page 46])
- Get an overview of the objects that are used by a specific interface (see Interface Objects Summary [page 47])
- Investigate log content for the changes made to the data messages of the selected interface (see Application Log Content [page 47])
- Display changes made in *Error Handling* to the data messages of the selected interface (see Error Handling Changes Log [page 49])
- The *Data Correction Report* checks for inconsistencies between the Proxy Framework and the SAP Application Interface Framework and corrects them (see Data Correction) [page 49]
- A snapshot takes the content in the statistics tables at a specific point of time (see Generation and Display of Snapshots [page 51])

10.6.1.1 Data Archiving

Use

Data Archiving – a service provided by SAP NetWeaver – removes mass data that the system no longer needs online, but which must still be accessible at a later date, if required, from the database.

In the SAP Application Interface Framework, you can archive the following types of data:

- Data messages
- XML persistence
- Data changes
- Runtime objects
- Application logs
- Structured persistence
- File adapter logs
- Snapshots

Prerequisites

Data in the database can only be archived using archiving objects, which describe the data structure and context. To set up Data Archiving (transaction code `SARA`) for the SAP Application Interface Framework, you enter the name of the SAP Application Interface Framework-specific archiving object /AIF/PERSX in the *Object Name* field on the *Archive Administration: Initial Screen*.

The archiving uses the *Archive Development Kit* (ADK) to provide the archiving object `/AIF/PERSX`, which includes all the necessary archiving programs and defines the structure of the archive file to be written. To maintain the archiving object, use transaction `AOBJ`.

All archiving programs maintained in the archiving object are started using *Archive Administration* (transaction code `SARA`).

Process

In the SAP Application Interface Framework, the archiving process is divided into the following main steps, some of which are optional:

1. Creation of archive files
   In the write phase, the data to be archived is written sequentially into newly created archive files.
   In the SAP Application Interface Framework, the *AIF Data Archiving: Write Program* (`/AIF/PERSX_WRI`) report controls the writing process of the archive files produced by the archiving object `/AIF/PERSX`.You can decide which data should be archived using a variant and a selection screen.
   On the selection screen, you can select the types of data you want to archive. You can further restrict the selection using dates and users. For data messages, XML persistence, structured persistence, data changes, and application logs, you can restrict using the interfaces. In addition, there are many type-specific selection parameters. By defining the package size, you can optimize the performance and memory consumption of the archiving runs. In addition, you can tweak the layout of the resulting logs. You can run the write program of the archiving object in test mode, which means that the program simulates the creation of an archive, based on your selection criteria and other archiving object-specific checks that test the data's suitability for archiving. The program does not create an archive file but does generate statistics about which table entries would be written to the archive and the size and number of archive files that would be created in production mode.
   Once you schedule the write process, you can monitor the corresponding job on the *Job Overview* screen.

> **→ Recommendation**
>
> We recommend that you schedule the archiving as periodic background jobs that run in off-peak hours.

2. Deletion from the database
   The delete program reads the data from the archive files and deletes the data from the database.
   In the SAP Application Interface Framework, you can use the *Archiving of the AIF Persistence: Delete Program* (`/AIF/PERSX_DEL`) report to control the deletion of persistence entries that have been written successfully to an archive file and to generate statistics about the table entries that were deleted.
   If you run the delete program of the archiving object in test mode, data is not deleted from the database as the deletion is only simulated.
   Once you schedule the deletion process, you can monitor the corresponding job on the *Job Overview* screen.

3. Optional: Display of archive files
   You can use the *Archiving of the AIF Persistence: Sequential Read Program* (`/AIF/PERSX_READ`) report to display the data stored in archive files of the archiving object `/AIF/PERSX`. If you double click on a line, more details about the corresponding entry are displayed.

4. Optional: Reloading of archive files
   You can use the *Archiving of the AIF Persistence: Reload Program* (`/AIF/PERSX_REL`) report to reload successfully archived data, produced by the archiving object `/AIF/PERSX`, to the SAP Application Interface Framework tables.
   You can also run the reload program in test mode. The reload is only simulated and there are no changes made to the database.
   Once you select a successfully deleted archiving session, maintain the variant, and schedule the reload process, the corresponding job is displayed on the *Job Overview* screen.

> **→ Recommendation**
>
> We recommend that you use this feature in exceptional circumstances only.

More Information

For more information about archiving, see the SAP Help Portal under *Introduction to Data Archiving (CA-ARC)*.

10.6.1.2 Performance Analysis

Use

You can use *Performance Tracking* (transaction code `/AIF/PERFORMANCE`) to measure the performance of the SAP Application Interface Framework. Using this performance analysis tool, you are able to detect time-consuming routines and processes within the SAP Application Interface Framework.

Using tracking variants available in this transaction, you can track the performance of specific objects, for example, particular interfaces, users, and time ranges within the SAP Application Interface Framework.

Goals

The goals of the performance optimization process and the *Performance Tracking* transaction include:

- Measuring interface performance in back end systems
- Determining the area for performance improvements (for example, interface-specific logic and mapping logic)
- Defining measures for bottlenecks with most saving potential
- Implementing performance improvement measures
- Confirming the positive impact of performance improvement measures

Features

Scope

The scope of the interface performance measuring is defined for all interfaces via SAP NetWeaver Process Integration and the SAP Application Interface Framework.

The following are measured:

- ABAP Proxy
- Interface-specific logic (for example, value mappings and validations)
- Posting logic (for example, BAPIs)

The following are not measured:

- Legacy extractors
- Transmission of data (for example, file transfer and MQSeries)
- SAP NetWeaver Process Integration

Activities

You can access the *Performance Tracking* report from the SAP Easy Access menu by choosing ▶ *Cross-Application Components* ▶ *SAP Application Interface Framework* ▶ *Administration* ▶ *Tools* ▶ *Performance Tracking* ◀.

Set Up Tracking

In order to track performance, a variant needs to be set up. You can either select a variant that already exists or create a new variant. If you select an existing variant, the corresponding data for the variant is displayed on the screen.

If a variant has not been created, the default values are shown in the selection screen of the transaction and the variant is marked as *Unsaved*. While creating a variant on the selection screen, you can specify a message ID, namespace, interface name, interface version, and the name of the user starting the message. You can also enter the minimum duration and the time range.

You can start tracking by choosing 🖼. You can stop tracking by choosing 🖼.

Analyze Results

Performance issues could arise in the following areas:

- Interface-specific logic
- Posting logic (for example, SAP BAPIs)

Examples of performance issues in above areas and possible solutions for you for these issues are shown in the following table:

Examples of Performance Issues	Possible Solutions
Frequent selection of identical data, for example, function modules that are Customized on an item level	Buffering in hashed internal table
Slow select statements, for example, database index not used	- Usage of database index, if available - Creation of database index, if feasible - Database access via alternative table
Long read access to internal tables	- Usage of sorted or hashed tables - Usage of field symbols
Long runtime of SAP BAPIs	- Check for user exits with poor performance - Redesign of interface if BAPI supports multi-post

10.6.1.3 Index Table Overview

Use

The *Index Tables Overview* report (transaction code `/AIF/IDXTBL`) gives you an overview about the number of messages and the number of errors that exist for each interface of the SAP Application Interface Framework.

Features

On the selection screen of the *Index Table Overview* transaction, you can select the namespace, interface name, and interface version. If you leave those fields blank, all interfaces that exist are selected. In addition, you can decide if only error messages are to be counted or if all existing messages are to be counted.

Activities

You can access the *Index Table Overview* report from the SAP Easy Access menu by choosing ▶ *Cross-Application Components* ▶ *SAP Application Interface Framework* ▶ *Administration* ▶ *Tools* ▶ *Index Table Overview* ▶.

Example

An interface administrator runs the report to check if the message number for each interface is within the expected range. The administrator identifies an unusual high number of messages for one interface and decides to do the following:

- Checks that data archiving is set up for the interface
- Ensures that performance is still good in the error handling
- Runs a performance report
- Checks technical attributes of the corresponding single index table in order to see if it is optimized for such a large number of messages

10.6.1.4 Interface Objects Summary

Use

The *Summary Report* (transaction code `/AIF/CUST_OVERVIEW`) provides an overview of the objects in the SAP Application Interface Framework that are used by a specific interface.

The SAP Application Interface Framework introduces several objects for the development of interfaces, for example, value mappings, fix values, checks, and actions. Since most of these objects are maintained in different locations in the SAP Application Interface Framework, there is no aggregated view of all the objects used by a specific interface. The *Summary Report* provides you with such a consolidated view.

Activities

You can access the *Summary Report* from the SAP Easy Access menu by choosing ▶ *Cross-Application Components* ▶ *SAP Application Interface Framework* ▶ *Administration* ▶ *Tools* ▶ *Summary Report* ▶.

10.6.1.5 Application Log Content

Use

Interface Logs (transaction code `/AIF/LOG`) offers you a specialized view of the transaction to analyze the application log (transaction code `SLG1`). In the specialized view, the log object is predefined as `/AIF/LOG`, so that only application log messages created by the SAP Application Interface Framework are displayed.

Features

On the *Select Interface Logs* screen, you have options to restrict the selection, for example, by using the following:

- *Subobject*
  In the SAP Application Interface Framework, this refers to the namespace and interface name.
- *External ID*
  The message GUID or a file number of the test tool
- *Time Restriction*
  You can define a date and time range.
- *Log Triggered By*
  The user, transaction code, or program that triggered the log
- *Log Class*
  All logs or logs with various degrees of importance

Output

In the upper part of the *Display Interface Log Messages* output screen, the selected application log messages are displayed grouped by the date, time, and user. An icon shows whether the messages have the message type *Information, Warnings*, *Error*, or *Termination* depending on the highest error status of the group. When you select an icon, the number of individual messages for each individual message type is displayed. When you then select an icon, for example, for those with message type *Error*, the details for the individual log messages with message type *Error* are displayed in the lower part of the output screen.

Activities

You can access the *Interface Logs* report from the SAP Easy Access menu by choosing ⟩ *Cross-Application Components* ⟩ *SAP Application Interface Framework* ⟩ *Administration* ⟩ *Log* ⟩ *Interface Logs* ⟩.

More Information

For more information about the application log, see SAP Help Portal at ⟩ *SAP NetWeaver* ⟩ *SAP NetWeaver 7.0 (2004s)* ⟩ *SAP NetWeaver 7.0* ⟩ *SAP NetWeaver 7.0 Library (English)* ⟩ *SAP NetWeaver Library* ⟩ *SAP NetWeaver by Key Capability* ⟩ *Solution Life Cycle Management by Key Capability* ⟩ *Application Log – (BC-SRV-BAL)* ⟩.

10.6.1.6 Error Handling Changes Log

Use

You can use the *Error Handling Changes Log* (transaction code `/AIF/EDCHANGES`) to display the changes made to the data messages of the selected interface or interfaces in *Error Handling*.

Features

You can restrict the selection by namespace, interface name, and version. You can refine the selection by entering a date range or the message ID.

Output

On the output screen, a tree view displays all selected interfaces. When you select a node, the following changes made to the messages are displayed:

- The GUID of the data message
- The field path of the field that was changed by the user
- `LINE_NR` that contains the message index with line numbers
- The new and old value
- The date and time of the modification

Activities

You can access the *Error Handling Changes Log* report from the SAP Easy Access menu by choosing ▶ *Cross-Application Components* ❯ *SAP Application Interface Framework* ❯ *Administration* ❯ *Log* ❯ *Error Handling Changes Log* ◀.

10.6.1.7 Data Correction

Use

There might be inconsistencies between the Proxy Framework and the SAP Application Interface Framework. The *Data Correction Report* (transaction code `/AIF/CORRECTION_REPORT`) checks for inconsistencies and corrects them. A test mode exists that allows you to check for inconsistencies but not to actually correct them. By default, the *Testrun* checkbox is selected.

Features

The following inconsistencies can be fixed:

- There might be inconsistencies between the message status in the Proxy Framework and the single index tables in the SAP Application Interface Framework. These inconsistencies can occur if a message was canceled, deleted, or archived in the Proxy Framework, but the status was not updated in the single index tables of the SAP Application Interface Framework.
- There might be inconsistencies between the message index table and the SAP NetWeaver PI message status. These inconsistencies occur if a message, which ended with errors in the SAP Application Interface Framework, is restarted with the Proxy Framework and processed successfully. In this case, the status in the SAP Application Interface Framework might not be updated.
- If an SAP NetWeaver PI message was deleted or archived, the corresponding application log written by the SAP Application Interface Framework must be deleted. Inconsistencies must be corrected.
- When there are changes made in Customizing for alert recipients, the alert index table might not be updated correctly. Therefore, the table might contain inconsistent records when compared to current Customizing for alert recipients. You can regenerate the messages' statistics to ensure that no inconsistencies exist and the messages' statistics can be compressed.

When running the *Data Correction Report*, the system checks for messages that exist in the message index tables of the SAP Application Interface Framework but not in the Proxy Framework. These are regarded as inconsistent and are deleted from the message index tables of the SAP Application Interface Framework. It is recommended to also delete the corresponding application log messages. Hence, the *Data Correction Report* should be planned as a background job after execution of the deletion or archiving jobs for the Proxy Framework with the following settings:

- *Namespace*, *Interface Name*, and *Interface Version* should be blank
- *Testrun* should not be selected
- *Check/Fix Deleted or Archived Messages* should be selected
- *Check/Fix Application Log* should be selected
- *Regenerate Statistics* should be selected

Activities

You can access the *Data Correction Report* from the SAP Easy Access menu by choosing ▶ *Cross-Application Components* ▶ *SAP Application Interface Framework* ▶ *Administration* ▶ *Tools* ▶ *Correction Report* ▶ .

> → Recommendation
>
> It is recommended that the *Data Correction Report* is run regularly as a background job to ensure that no inconsistencies exist.

> → Recommendation
>
> It is further recommended that you run the *Data Correction Report* after your deletion or archiving job for messages in the Local Integration Engine was executed.

10.6.1.8 Generation and Display of Snapshots

Use

In the SAP Application Interface Framework you are able to generate and display snapshots. A snapshot takes the content in the statistics tables (`/AIF/MSG_STAT` and `/AIF_MSGSTATALL`) at a specific point of time and saves it in separate snapshot tables. The same applies to the message summary table (`/AIF/T_MMSG_IDX`).

Features

Generation of Snapshots

A snapshot can be taken using *Generate Snapshot* (transaction code `/AIF/GENMSGSNAP`). This transaction allows you to create snapshots of statistics and summary data for messages in the SAP Application Interface Framework and track this data over time.

On the *Generate Snapshot* selection screen, select a date for which the snapshot is to be created (this only applies to daily statistics data). You can also select a package size, that is, the size of the packages in which the single messages are processed. Changing the number of the package size could increase or decrease the performance of the report considerably. *1000* is the suggested value for most situations. However, the optimum package size depends on the system hardware and the current system load.

Display of Snapshots

A snapshot can be displayed using *Display Snapshot* (transaction code `/AIF/DISPMSGSNAP`). This transaction allows you to display snapshots of statistics and summary data for messages available in the SAP Application Interface Framework and track this data over time.

There are several ways you can filter for snapshots, for example, ID, creation data, creation user, and the date the snapshot was created.

You can select from the following 4 views:

-
  Lists all the statistics entries for messages available in the system at the time of snapshot creation.

-
  Lists all the message statistics for the *effective date* specified for the snapshot.

-
  Lists all the log message entries available in the system at the time of snapshot creation. Log messages are grouped and their amount cumulated on the basis of namespace, interface name, interface version, recipient namespace, recipient name, message type, message ID, and message number. You can see the message text (with placeholders) and the key fields that were the basis for the determination of the specific recipient.

-
  Shows all the log messages for a specific date, that is, the effective date of the snapshot.

Activities

You can access the reports to generate and display error statistics snapshots from the SAP Easy Access menu by choosing ▶ *Cross-Application Components* ❯ *SAP Application Interface Framework* ❯ *Administration* ❯ *Snapshots* ◀ and *Generate Snapshot* or *Display Snapshot*.

> → Recommendation
>
> It is recommended that *Generate Snapshot* is run daily as a background task.

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 SAP NetWeaver workload monitor. For more information, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ▶ *SAP NetWeaver for SAP S/4HANA* ❯ *Technical Operations for SAP NetWeaver* ❯ *Administration of SAP NetWeaver systems and components* ❯ *Administration of Application Server ABAP* ❯ *Monitoring and Administration Tools for Application Server ABAP* ❯ *Workload Monitor* ◀.

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 SAP NetWeaver tools for

monitoring these RFC connections. For more information, see the SAP Help Portal under http://help.sap.com/ s4hana_op_1610 ⟩ *SAP NetWeaver for SAP S/4HANA* ⟩ *Function-Oriented View* ⟩ *Application Server* ⟩ *Functions and Tools of SAP NetWeaver Application Server* ⟩ *Connectivity* ⟩ *Components of SAP Communication Technology* ⟩ *Classic SAP Technologies (ABAP)* ⟩ *RFC* ⟩ *RFC Administration* ⟩.

10.7.1.2 High Availability for PLM

Product Lifecycle Management follows the general high availability (HA) concept for all SAP NetWeaver based systems. 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, see the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ⟩ *SAP NetWeaver for SAP S/4HANA* ⟩ *Function-Oriented View* ⟩ *Search and Operational Analytics* ⟩ *Enterprise Search* ⟩.

11 SAP S/4HANA LoB Products

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

11.1 Asset Management

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

11.1.1 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

11.1.1.1 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 .

11.1.1.1.1 Monitoring Processes and Workflows in EHS

11.1.1.1.1.1 Monitoring the Workflow and Process Foundation

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_PRCDEF_LST

- EHFND_WFF_PROCS_LST
- EHFND_WFF_TECH_WFIBO

11.1.1.1.1.2 Monitoring Scheduled Processes

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 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 57].

11.1.1.1.1.3 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 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.

> **i Note**
>
> The PCO class that is used by your process is configured in Customizing under ▶ *Environment, Health, and Safety* ❭ *Foundation for EHS* ❭ *Process Foundation* ❭ *Specify Process Definitions* ❭.

11.1.1.1.1.4 Process Logs on the User Interface

In most places where *Environment, Health, and Safety* 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 *Environment, Health, and Safety* specific information in the *Security Guide for SAP S/4HANA* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 ❭ *Product Documentation* ❭.

11.1.1.1.2 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.

> i 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*.

11.1.1.1.3 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.

Log Object	Log Subobject	Description
EHHSS_BO_INC (Incident Management)	EHHSS_AIF_INC_INBD	Log for inbound processing of SAP Interactive Forms by Adobe in the incident application.
	EHHSS_HR_ABS	Log for HR absence notifications.
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	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

11.1.1.1.4 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).

11.1.1.2 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 9] in the *Getting Started* section.

11.1.1.2.1 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.
	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.
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.

Software Component	Transaction / Tool	Description
	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.
	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.

> **i 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.

11.1.1.2.2 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
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_SAC	EHS Environmentally-related tasks	Tasks of category *Action*

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 12].

11.1.1.2.3 Scheduling of Periodic Tasks

You have to run the following job periodically in order to keep *Environment, Health, and Safety* running smoothly over time.

Job 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)

If you have enabled integration into other applications, you have to run the following jobs periodically.

List of Jobs

Program Name/Task	Recommended Frequency	Detailed Description
R_EHFND_CHECK_COMPL_EXT_NOTIF	Daily	See Customizing activity *Schedule Job for Notification Status Check* (EHFND_CHECK_COMP_NOT)
R_EHFND_SYNCEAM_LOCATION	Daily	See Customizing activity *Schedule Jobs for Location Synchronization* (EHFND_LOC_SYNCEAM)
R_EHHSS_CHECK_HCM_ABS_CHANGED	Daily	See Customizing activity *Schedule Jobs for HR Absence Check* (EHHSS_CHECK_HR_ABS)
R_EHHSS_PROPOSE_HSPROTOCOLS	Daily	See Customizing activity *Schedule Job for Proposing Health Surveillance Protocols* (EHHSS_PROP_HSPROT)
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 Customizing activity *Schedule Job for Transfer of Chemical Data*
R_EHENV_MDEF_CHECK_EXECUTE	Daily	See Customizing activity *Schedule Job for Measurement Checks* (EHENV_MDEF_CHECK_EXE)
R_EHENV_CDEF_AUTO_CALC_JOB	On event SAP_EHFND_AMOUNT_CNG	See Customizing activity *Schedule Job for Automatic Calculations* (EHENV_CDEF_AUTO_CALC)

→ Recommendation

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

11.1.1.2.4 Transferring Data

Transferring Incident Data

You can transfer incident data between *Environment, Health, and Safety (EHS)* systems or between an *Environment, Health, and Safety* system and a component extension for *SAP EHS Management* (release 3.0 or higher) system. In addition, you can import incident data from non-SAP systems to an *Environment, Health, and Safety* system.

For more information about transferring incident data between SAP systems or importing incident data from non-SAP systems, see information about *Incident Management* at the SAP Help Portal under http:// help.sap.com/s4hana_op_1610 *Product Assistance* . Open the product assistance and go to the section on *Environment, Health, and Safety*.

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* at the SAP Help Portal under http://help.sap.com/s4hana_op_1610 *Product Assistance* . Open the product assistance and go to the section on *Environment, Health, and Safety*.

11.1.1.3 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 18].

11.1.1.3.1 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 *Process Setup and Scheduled Processes*.
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.

11.1.1.3.2 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 *Environment, Health, and Safety* 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 *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 57].

If there are problems 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 58].

11.1.1.3.3 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👈.

11.1.1.3.4 Notifications to Integrated Systems

If there are problems with the notification processes to integrated systems, you should first make sure that the process itself is working correctly. See the steps in the section Troubleshooting the Process Foundation [page 63].

If you are sure that 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 58].

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* ❯ .

11.1.1.4 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 19].

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-MGM (EHS Management)
  - EHS-MGM-FND (Foundation for EHS Management)
  - EHS-MGM-INC (Incident Management)
  - EHS-MGM-ENV (Environment Management)
  - EHS-MGM-RAS (Risk Assessment / Health and Safety Management)

> i Note
>
> For *Environment, Health, and Safety*, the same application components are applicable as for component extension for *SAP EHS Management*.

11.2   Cross Applications

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

11.2.1 Master Data Governance

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

11.2.1.1 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)

Interface	Monitor	Detailed Description
Data Transfer	MDG_BS_DL_MONITOR_CONF	Data Transfer Monitor (Web Dynpro application)

11.2.1.2 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.

11.2.1.3 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

Program Name/Task	Recommended Frequency	Detailed Description
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.

11.2.1.4 Load Balancing

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.

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

11.2.1.5 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.

11.3 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 http://help.sap.com/s4hana_op_1610 ⤳ ▶ *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 12]

12 SAP S/4HANA LoB Products for specific industries

SAP S/4HANA LoB Products for specific industries enhance core functions of SAP S/4HANA Enterprise Management to provide industry specific business benefit for your line of business (LoB). Please note that you might need a separate license. For further information, please contact your SAP Account Executive.

13   SAP S/4HANA Compatibility Packs

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

13.1   R&D / Engineering

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

13.1.1 Product Safety and Stewardship

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

- Product Compliance
- Process Industries

13.1.1.1 Product Safety and Stewardship for Product Compliance

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

13.1.1.1.1 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 Discrete Industries*. For more generic information, see Monitoring [page 8].

13.1.1.1.1.1 Trace and Log Files for Product Compliance

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.

> **i 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 ↗▌▶ *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.

> i 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
	PFR_BGR	Log for Background Spreadsheet Reporting
EHPRC_SCC (Product Compliance - Supply Chain Collaboration)	ADMIN	Log for Administrators

13.1.1.1.1.2 Workload Monitors for Product Compliance

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*.

13.1.1.1.1.3 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_COR-RECT_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* ◀.

13.1.1.1.2 Specific Management Tools for Product Compliance

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 9].

13.1.1.1.2.1 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.

Software Component	Transaction / Tool	Description
	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.
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.

Software Component	Transaction / Tool	Description
	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_COR-RECT_PCBOS	The report helps to delete/disable PCBOs which are defective.
	Report R_EHFND_WFF_SHOW_TAS K_OF_WFID	The report lists all tasks that are used in a workflow template and indicates if they are background tasks.

> **i 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.

13.1.1.1.2.2 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 object:

Object Details

Archiving Object	Description	Archived Data
EHPRC_IMDS	IMDS Documents	Documents attached to IMDS records

For more information, see also .

13.1.1.1.2.3 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_IMDS_DOWNLOAD	Daily	See Customizing activity *Set Up Daily Synchronization with IMDS* (EHPRC_IMDS_SYNC)

Program Name/Task	Recommended Frequency	Detailed Description
`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`)

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.

13.1.1.1.3 Specific Troubleshooting for Product Compliance

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

For general information, see .

13.1.1.1.3.1 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 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.

13.1.1.1.3.2 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 71].

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 76] .

13.1.1.1.3.3 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 .

13.1.1.1.4 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.

> i 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 19].

13.1.1.2 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

13.1.1.2.1 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 8].

13.1.1.2.1.1 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`).

13.1.1.2.1.2 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
	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

Component	Content	File/Log Object	Path
	(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: *****
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.

> **i 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*.

13.1.1.2.2 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 9].

13.1.1.2.2.1 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`).
Expert	Windows Services	Start the watchdog service that is used for Expert (`EhsStart` or `EhsManagementServer`).

13.1.1.2.2.2 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.

13.1.1.2.2.3 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.	

13.1.1.2.2.4 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*.

13.1.1.2.2.5 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

13.1.1.2.2.6 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 83].

13.1.1.2.3 High Availability

Product Safety and Stewardship for Process Industries follows the general high availability (HA) concept for all SAP NetWeaver based systems. 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.

13.1.1.2.4 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 .

13.1.1.2.5 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 19].

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.*

14 Business Network Integration

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

14.1 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).

14.1.1 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.

14.1.2 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, search for the phrase "Application Log – User Guidelines (BC-SRV-BAL)" in the documentation of SAP NetWeaver at http://help.sap.com.

14.1.3 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*.

Important Disclaimers and Legal Information

Hyperlinks

Some links are classified by an icon and/or a mouseover text. These links provide additional information.
About the icons:

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