

Application Operations Guide
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SAP® Environment, Health, and Safety Management

Component Extension 5.0 for SAP EHS Management



Document History



Caution

Make sure you use the current version of the Application Operations Guide.

The current version of the Application Operations Guide is at service.sap.com/instguides on SAP Service Marketplace.

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Table of Contents

1	Getting Started.....	5
1.1	About this Guide	5
1.2	Global Definitions.....	5
1.3	Important SAP Notes	6
2	Technical System Landscape	7
2.1	Scenario/Component Matrix.....	7
2.2	Related Documentation	7
2.3	SAP NetWeaver (Underlying Software).....	7
3	Monitoring SAP EHS Management.....	9
3.1	Alert Monitoring.....	9
3.2	Detailed Monitoring and Tools for Problem and Performance Analysis.....	9
3.2.1	Trace and Log Files	9
3.2.2	Workload Monitors.....	13
3.2.3	Data Growth and Data Archiving Monitors	16
3.3	Data Consistency.....	16
4	Management of SAP EHS Management.....	18
4.1	Managing the System and SAP NetWeaver	18
4.2	Software Configuration	18
4.3	Administration Tools	18
4.3.1	Application Copy	21
4.3.2	Archiving	21
4.3.3	User Management.....	21
4.3.4	Printing.....	22
4.4	Backup and Restore	22
4.5	Data Transfer	22
4.5.1	Transferring Incident Data from Component Extension for SAP EHS Management	23
4.5.2	Transferring Incident Data from Non-SAP Systems.....	29
4.5.3	Transferring Specification Data from SAP EHS Management as part of SAP ERP.....	30
4.6	Periodic Tasks.....	30
4.6.1	Scheduling of Periodic Tasks	30
4.6.2	Required Manual Periodic Tasks.....	32
4.7	Load Balancing.....	33
5	Software Change Management	36
5.1	Transport and Change Management	36
5.2	Development Requests and Development Release Management	36
5.3	Quality Management and Test Management.....	36
5.4	Support Packages and Patch Implementation	37
6	Troubleshooting	38
6.1	Troubleshooting the Process Foundation	38
6.1.1	Problem: A Process Did Not Start	38
6.1.2	Problem: Process Stopped.....	38
6.1.3	Problem: Inconsistent Data.....	39
6.2	Process Setup and Scheduled Processes	39
6.3	Form Generation with Adobe Document Services	39

6.4	Notifications	40
6.5	Business Warehouse for Analytical Reporting.....	40
6.6	Business Object Processing Framework (BOPF)	40
6.6.1	Tools for BOPF Debugging	40
6.6.2	Hint for Debugging in BOPF.....	42
6.6.3	Software Layer Aware Debugging	42
7	Support Desk Management	44
7.1	Remote Support Setup	44
7.2	Problem Message Handover.....	44
8	Appendix	46
8.1	Related Guides	46
8.2	Related Information.....	46

1 Getting Started



Caution

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

1.1 About this Guide

Designing, implementing, and running your SAP applications at peak performance 24 hours a day has never been more vital for your business success than now.

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. Therefore, you will sometimes also need to refer to other guides such as the Master Guide, Technical Infrastructure Guide, and SAP Library.

Target Groups

- Technical Consultants
- System Administrators
- Solution Consultants
- Business Process Owner
- Support Specialist

1.2 Global Definitions

SAP Application

An SAP application is an SAP software solution that serves a specific business area like ERP, CRM, PLM, SRM, and SCM.

Business Scenario

From a microeconomic perspective, a business scenario is a cycle, which consists of several interconnected logical processes. Typically, a business scenario includes several company departments and involves other business partners. From a technical point of view, a business scenario needs at least one SAP application (SAP ERP, SAP SCM, or others) for each cycle and possibly other third-party systems. A business scenario is a unit which can be implemented separately and reflects the customer's prospective course of business.

Component

A component is the smallest individual unit considered within the solution development lifecycle; components are produced, delivered, installed, and maintained separately.

1.3 Important SAP Notes



Check regularly for updates available for the Application Operations Guide.

Important SAP Notes

For more information regarding important SAP notes, see the Master Guide for SAP Environment, Health, and Safety Management (SAP EHS Management) on the SAP Service Marketplace at <http://service.sap.com/instguides> → SAP Business Suite Applications → SAP EHS Management → Component Extension for SAP EHS Management → Release 5.0

2 Technical System Landscape

2.1 Scenario/Component Matrix

For more information regarding the business scenarios and processes, the system architecture, and required software components, see the Master Guide for SAP Environment, Health, and Safety Management (SAP EHS Management) on the SAP Service Marketplace at <http://service.sap.com/instguides> → SAP Business Suite Applications → SAP EHS Management → Component Extension for SAP EHS Management → Release 5.0.

2.2 Related Documentation

The following table shows where you can find more information about the technical system landscape.

Topic	Guide/Tool	Quick Link on SAP Service Marketplace (service.sap.com)
Application-specific components and industry-specific components such as SAP Financials and SAP Retail	Master Guide	instguides
Technology components such as SAP Web Application Server	Master Guide	instguides
Sizing	Quick Sizer Tool	sizing
Technical configuration	Master Guide	instguides
Scalability	Master Guide	instguides
High availability	Master Guide	instguides
Security	Security Guide	security instguides

2.3 SAP NetWeaver (Underlying Software)

Component Extension for SAP EHS Management 5.0 is based on SAP NetWeaver 7.4 - Application Server ABAP.

For more information about operating the underlying software, see the Technical Operations Manual for SAP NetWeaver on SAP Help Portal at <http://help.sap.com/nw74> → System Administration and Maintenance Information → Technical Operations for SAP NetWeaver.

The following table provides an overview of the links to SAP NetWeaver topics discussed in the Operation Guide.

Table 1: Links to SAP NetWeaver Documentation

Path		Topic Description
http://help.sap.com/nw74 → System Administration and Maintenance Information → Technical Operations for SAP NetWeaver → Administration of Application Server ABAP	→ Monitoring and Administration Tools for Application Server ABAP	General information about monitoring
	→ Monitoring and Administration Tools for Application Server ABAP → Trace Functions	Trace functions
	→ Monitoring and Administration Tools for Application Server ABAP → Monitoring in the CCMS → Workload Monitor	Workload monitoring SAP EHS Management uses the standard SAP NetWeaver workload monitor.
	→ Monitoring and Administration Tools for Application Server ABAP → SAP Printing Guide	Printing PDF forms
http://help.sap.com/nw74 → Security Information → Security Guide	→ User Administration and Authentication	User management
http://help.sap.com/nw74 → System Administration and Maintenance Information → Technical Operations for SAP NetWeaver → Solution Life Cycle Management	→ Software Logistics → Change and Transport System	Transport and change management
	→ Software Logistics → Software Maintenance	Implementing patches
	→ Data Archiving	Data archiving
	→ Solution Monitoring → Monitoring in the CCMS → Data Archiving Monitor	Monitoring data archiving
	→ Application Log (BC-SRV-BAL)	General information about logs

3 Monitoring SAP EHS Management

Monitoring is essential to running and managing SAP technology. The following sections provide information about monitoring specifically for SAP EHS Management.

Recommendation

We recommend that you set up the monitoring infrastructure as described in the Monitoring Setup Guide for SAP NetWeaver 7.0 (2004s) located on SAP Service Marketplace at <http://service.sap.com/instguides> → SAP NetWeaver → SAP NetWeaver 7.0 (2004s) → Operations → Monitoring.

The monitoring setup described in the Monitoring Setup Guide is the foundation for the following sections and contains all the information relevant to monitoring the SAP NetWeaver components used in SAP EHS Management. Proficient knowledge of system monitoring and basic knowledge of SAP NetWeaver is required to compose the user-defined SCM monitors recommended within this guide.

3.1 Alert Monitoring

Proactive, automated monitoring is the basis for ensuring reliable operations for your SAP system environment. SAP provides you with the infrastructure and recommendations needed to set up your alert monitoring in Computing Center Management System (CCMS) to recognize critical situations for SAP EHS Management as quickly as possible.

In order to enable the auto-alert mechanism of CCMS, see SAP Note [617547](#).

3.2 Detailed Monitoring and Tools for Problem and Performance Analysis

3.2.1 Trace and Log Files

Trace files and log files are essential for analyzing problems.

3.2.1.1 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	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 Type Use this if you want to get all of the workflows that have a common PCO class.

Note

The PCO class that is used by your process is configured in Customizing under SAP EHS Management → Foundation for EHS Management → Process Foundation → Specify Process Definitions.

3.2.1.2 Process Logs on the User Interface

In most places where SAP EHS Management 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 Security Guide for component extension 3.0 for SAP EHS Management.

3.2.1.3 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 | <-> Internal Access (io_read, io_modify, io_check, io_query)

3.2.1.4 Trace Configuration

Trace configuration is done in the system browser of transaction /BOPF/CONF_UI (feature pack systems) or report /BOPF/TOOL_TRACE_CONFIG (base scope systems).

You can switch the trace on for the 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 switched off. Note that the trace does not work for a BO that is already in use at the time when you activated the trace.

3.2.1.5 Trace Analysis (Transaction ESFUTIL)

The trace data can be analyzed via transaction ESFUTIL.

It is not necessary to activate the ESF trace in order to use the BOPF tracing tool. If both are used in parallel, both the trace data written by the ESF trace and the trace data written by the BOPF trace are written into the same trace file.

Note that if you use the transaction ESFUTIL for the first time, it is necessary to add your user to the user list on the left-hand side of the screen. You are then asked to activate at least one function. You can activate anything after your user has been added and then deactivate it again later if necessary.

3.2.1.6 Trace Analysis (Integration into BOPF Configuration UI)

It is also possible to analyze / view the traces directly from the BOPF workbench. To display all available traces, choose Display Traces in the context menu of your user's data trace activations.

3.2.1.7 Overview of Application Log Objects

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

Table 2 Overview of Application Log Objects

Log Object	Log Subobject	Description
EHFND_FW (Foundation for EHS Management)	GENERAL	General messages for the foundation for EHS Management
	UI_COMMUNICATION	UI communication
	WF_SCHEDULER	General Scheduler Log - displays information about the executions of the scheduler, which scheduled process instances were executed, and which had errors.
	WF_SCHEDULER_ITEM	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 or QM.
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
	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
EHPRC_CP_CORE (Product Compliance Core)	AUTO_CHANGE_PROC	Log for the automated change processing
	AUTO_CHANGE_PROC_DET	Determination of affected objects for automated change processing
	WORKLIST	Log for worklists
	IMDS	Log for IMDS processing

Log Object	Log Subobject	Description
	CPRVDR	Log for Content Provider
	CUSTOMIZING	Log for Customizing
	EMAIL	Log for Email Processing
	BOMBOS	Log for BOMBOS
EHPRC_INTEGRATION (Product Compliance– Integration)	ADMIN	Log for Administrators
	DEV	Log for Developers
Product Compliance		
EHPRC_MIGRATE (Product Compliance - Migration Report)	R_EHPRC_DATA_MIGRATE	Log for Data Migration Report
	R_EHPRC_RMWF_MIGRATE	Log for Registration Management Workflow Migration Report
	R_EHPRC_TASK_MIGRATE	Log for Task Migration Report
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
EHFND_CDC (Continuous Data Collection)	AUTO_TS_CHECK	Log for automatic check of time series

3.2.2 Workload Monitors

For more information about workload monitors, see the link to SAP NetWeaver documentation in Table 1: Links to SAP NetWeaver.

3.2.2.1 Monitoring the Workflow and Process Foundation

The process foundation is essential to the business processes supported by SAP EHS Management. It links together the SAP Business Workflow engine and the BOPF business objects of SAP EHS Management 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

For more information about these tools, see the description in the process foundation section.

For more information about how the process foundation functions, see SAP Help at <http://help.sap.com/> under SAP Business Suite → SAP EHS Management → Component Extension for SAP EHS Management → Component Extension 5.0 for SAP Environment, Health, and Safety Management → Application Help → Foundation for EHS Management → Process Foundation.

3.2.2.2 Monitoring Scheduled Processes

The process scheduler of SAP EHS Management is used for recurring tasks and planned execution of a process instance. You can use the following transactions to monitor the scheduled processes:

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 SAP EHS Management scheduler, you can filter by job name R_EHFND_SCHEDULER_JOB. In addition, you should change the user name parameter to '*' 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.

3.2.2.3 Monitoring Processes for the Business Warehouse (BW)

You can use the following transactions to monitor the BW processes:

Transaction	Description
RSA1	This transaction provides the most important monitoring tool in BW. You can call the tool for a specific BI content object, or open it for a specific DTP or InfoPackage and observe the log messages for the respective data transfer or extraction process.
RSMO	This transaction provides an overview of processes in BW and allows you to navigate to

Transaction	Description
	the corresponding process monitor to check the log messages of the process. We recommend that you allow the system to send e-mail notifications if a step of a process chain fails.
RSPC	This transaction allows you to display the log of process chains. From within this process chain log, it is possible to navigate to a specific process monitor when a step of the process chain fails.
RSBATCH	In this transaction, you can use the Support Tools tab to display logs, such as the following: Short dumps System log Application log Monitor log Job log

3.2.2.4 Monitoring Automated Change Processing for Product Compliance

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.

3.2.2.5 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.

3.2.2.6 SAP NetWeaver Enterprise Search

SAP EHS Management uses the standard functionality provided by SAP NetWeaver Enterprise Search. For more information about how to monitor the Enterprise Search, see SAP Help portal at <http://help.sap.com> → SAP

3.2.2.7 Tasks – Notifications to Integrated Systems

The system documents all notifications for tasks that are sent to integrated systems in the application log. For more information, see the log subobject in Table 2 Overview of Application Log Objects.

The notifications that you have already created can be displayed in the following transactions:

Table 3 Monitoring Transactions for Notifications to Integrated Systems

Notification Type	Transaction
Plant Maintenance Notification (Process Definition: HSS INC_ACTION PM_NOTIFICATION)	IW23
Service Notification (Process Definition: HSS INC_ACTION CS_NOTIFICATION)	IW53
Quality Notification (Process Definition: HSS INC_ACTION QM_NOTIFICATION)	QM03

Interface monitors are essential for analyzing problems with interfaces such as RFC, IDoc, and HTTP.

Monitor tools for these interfaces are:

3.2.3 Data Growth and Data Archiving Monitors

SAP EHS Management uses standard tools for archiving and monitoring data archiving available in SAP NetWeaver and does not require an application-specific tool. For more information, see the links to SAP NetWeaver documentation in Table 1: Links to SAP NetWeaver.

For more information about periodic tasks required to contain data growth (that is, to reorganize temporary data), see Periodic Tasks.

3.3 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.

Comp. / Data Storage	Check Tool / Method	Detailed Description	Prerequisites
PCBO <-> Business Workflow	Report R_EHFND_WFF_CO RRECT_PCBOS	For more information, see the report documentation.	You have set up the process system correctly, including the process definitions in Customizing under SAP EHS Management → Foundation for EHS Management → Process Foundation → Specify Process Definitions.

4 Management of SAP EHS Management

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.

4.1 Managing the System and SAP NetWeaver

Component Extension for SAP EHS Management 5.0 is based on SAP NetWeaver 7.4 - Application Server ABAP and uses administrative tools from SAP NetWeaver..

For more information about operating the underlying software, see the Technical Operations Manual for SAP NetWeaver on SAP Help Portal at <http://help.sap.com/nw74> → System Administration and Maintenance Information → Technical Operations for SAP NetWeaver.

4.2 Software Configuration

This chapter explains which application components or business processes used by this application are configurable and which tools are available for making adjustments (see 2 Technical System Landscape

Give an overview of the architecture of the components.

Scenario/Component Matrix).

Component Configuration Tools

Component	Configuration Tool(s)	Detailed Description
SAP EHS Management	Customizing activities under SAP EHS Management → Foundation for EHS Management → Process Foundation	Setting up the processes and their corresponding workflows properly ensures that you can collect process data for monitoring.

4.3 Administration Tools

The following table lists the tools that are especially relevant to SAP EHS Management and its components.

Software Component	Transaction/Tool	Detailed Description
BOPF (Business Object Processing)	BOBT	Test UI for BOPF For analysis and change to the runtime data

Software Component	Transaction/Tool	Detailed Description
Framework)		stored in business objects.
	BOB	Customization UI for BOPF For analysis and enhancements of the structure/definition of business objects.
BI /BW	See 3.2.2.3 Monitoring Processes for the Business Warehouse (BW).	
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	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	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 Graphical Workflow Log	Enables you to open the graphical workflow log with the ID of a work item or workflow.
	EHFND_WFF_PRCDEF_CHK	Runs several checks on a process definition.

Software Component	Transaction/Tool	Detailed Description
	Process Definition Check	
	EHFND_WFF_PRCDEF_INF Process Definition Information	Displays detailed technical information about a process definition.
	EHFND_WFF_PRCDEF_LST Process Definition List	Lists the process definitions from the process definitions table (EHFNDC_PROCDEF). You can also access this transaction from the NWBC under Health and Safety → Overview → Processes
	EHFND_WFF_PROCS_CHK Process Instance Check	Runs several checks on a process instance
	EHFND_WFF_PROCS_INF Process Instance Information	Displays detailed technical information about a process instance.
	EHFND_WFF_PROCS_LST Process Instance List	List of process instances for a given process.
	EHFND_WFF_SYSTEM_CHK Process System Check	Runs several checks to see if the system has been correctly setup to use the process foundation.
	EHFND_WFF_TECH_WFIBO Technical Workflow Inbox	Displays the work items of a given user with technical information.
	EHFND_WFF_TECH_WFLOG Technical Workflow Log	Allows direct access to the technical workflow log using ID of a work item or workflow instance.
	EHFND_WFF_WI_INF Technical Information for Work Item	Displays detailed technical information about a work item and its related process.
	Report R_EHFND_WFF_CORRECT_PCBOS	Helps to delete/disable PCBOs which are defective.
	Report R_EHFND_WFF_SHOW_TASK_OF_WFID	Lists all tasks that are used in a workflow template and indicates if they are background tasks.

 Note

To execute the transactions for the process foundation, the PFCG role assigned to your user requires the authorization object EHFND_WFT with activity 16 and the transaction names.

This also authorizes you to access these back-end transactions from the front end, for example, from the process progress log UI.

4.3.1 Application Copy

Since SAP EHS Management data is stored in the SAP ERP database, see the SAP ERP Solution Operation Guide at <http://service.sap.com/instguides> → SAP ERP → SAP ERP 6.0 → Operation → Solution Operation Guide for SAP ERP 6.0.

4.3.2 Archiving

For archiving data, SAP EHS Management makes use of the data archiving function within SAP ERP.

SAP EHS Management provides configuration for the following archiving objects:

Archiving Object	Description	Archived Data
EHHSS_INC	EHS Incidents	Data of the Incident Business Object
EHHSS_RAS	EHS Risk Assessments and Risks	Risk assessments and risks
EHPRC_IMDS	IMDS Documents	Documents attached to IMDS records

The EHHSS_INC archiving object complies with the rules of Information Lifecycle Management (ILM). However, to enable ILM on the EHHSS_INC archiving object, you should install SAP Basis Component release 702 SP11. Otherwise, you can still use the archiving object but it does not comply with the ILM rules.

You can activate ILM in the Switch Framework (transaction SFW5).

For more information about archiving, see the SAP ERP Solution Operation Guide at <http://service.sap.com/instguides> → SAP ERP → SAP ERP 6.0 → Operation → Solution Operation Guide for SAP ERP 6.0

4.3.3 User Management

SAP EHS Management uses the standard SAP NetWeaver functionality for user management, such as creating users with transaction SU01 and creating and using roles with transaction PFCG. For more information about SAP NetWeaver, see Table 1: Links to SAP NetWeaver Documentation.

For more information about user management specifically for SAP EHS Management, see the Security Guide on SAP Service Marketplace at <http://service.sap.com/instguides> → SAP Business Suite Applications → SAP EHS Management → Component Extension for SAP EHS Management → Release 5.0.

For an overview of the information necessary for operating SAP NetWeaver Identity Management, see the Identity Center Operations Guide available on SAP Help Portal at <http://help.sap.com/nw71> → SAP NetWeaver Identity Management 7.1.

4.3.4 Printing

SAP EHS Management uses the standard SAP NetWeaver functionality for printing PDF forms using Adobe. For more information about SAP NetWeaver, see Table 1: Links to SAP NetWeaver Documentation.

4.4 Backup and Restore

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

The backup and restore strategy for SAP EHS Management consists of two parts:

- Backup and restore coverage for each component
- Cross-system data dependencies and handling

The backup and restore strategy for your system landscape should not only consider SAP systems but should also be embedded in overall business requirements and incorporate your company's entire process flow.

In addition, the backup and restore strategy must cover disaster recovery processes, such as the loss of a data center through fire. It is most important in this context that you ensure that backup devices are not lost together with normal data storage (separation of storage locations).

Based on the type of application data contained in a component, a categorization scheme for system components can be used to analyze the backup requirements of any system component and to easily determine an appropriate backup method for this component. Category V is applicable for SAP EHS Management (see Categories of System Components for Backup and Restore).

SAP EHS Management data is stored in the SAP ERP database. Therefore, you can use the appropriate guides of SAP ERP at <http://service.sap.com/instguides> → SAP Business Suite Applications → SAP ERP → SAP ERP 6.0 → Operations → Solution Operation Guide for SAP ERP 6.0.

For more information, see the best practices document Backup and Restore for mySAP at <http://service.sap.com/bp-roadmap> → Operations Implementation → Backup and Restore for mySAP. For more information, see also Categories of System Components for Backup and Restore.

4.5 Data Transfer

This chapter provides information about the transfer of incident data from an add-on system or a non-SAP system to the add-on.

For more information about migrating incident data from SAP EHS Management as part of SAP ERP to the add-on, see section 5 Migration of Incident Management of the Migration Information guide on SAP Service Marketplace at <http://service.sap.com/instguides> → SAP Business Suite Applications → SAP EHS Management → Component Extension for SAP EHS Management → Release 5.0.

4.5.1 Transferring Incident Data from Component Extension for SAP EHS Management

Component extension 3.0, 4.0, or 5.0 for SAP EHS Management enables you to export incident data to CSV files and then import these files into a target system. This means that you can transfer, at one time, already defined data for one or more incidents, for example from a test system to a productive system. The target system to which you can import the data is component extension 3.0, 4.0, or 5.0 for SAP EHS Management. To import the data files into the target system, you can use the Legacy System Migration Workbench (LSMW).

Due to the specific structure of the incident business object (BO) and the way in which data is stored in it, you must transfer the incident data in several stages. In the different stages, you export and transfer data that is needed for the final transfer of incidents to the target system.

4.5.1.1 Prerequisites

The following prerequisites must be met before you proceed with the transfer of incidents:

- If you perform data transfer for the first time, create an LSMW user profile as an initial step by executing the Maintain Object Attributes step in the LSMW.
- You have specified the following identical data in the source and target systems:
 - Plants
 - Materials
 - Internal and maintenance orders
 - Customizing values for all SAP EHS Management activities
- You have configured the source and the target systems to use the same HR data.
- You have specified the same incident BO structure in the source and target systems.
This means that if the incident BO in the source system contains nodes for customer-specific enhancement data, the corresponding BO in the target system must be enhanced with the same nodes.
- If the source system depends on data that is located in other systems and transferred via RFC connections, you must configure the same RFC connections in the target system.
Establish RFC connections in Customizing for SAP EHS Management under Foundation for EHS Management → Integration → Specify Destinations for Integration.

4.5.1.2 Transferring Location Data

To transfer incidents from a target to a source system, you must transfer the location data first. This ensures the correct handling of locations and that the existing relations remain unchanged during the transfer of incidents.

The location data consists of location entries and a location structure (hierarchy) that organizes these entries. When you transfer location data, you must transfer the location entries first, and then the location structure.

4.5.1.2.1 Exporting Location Data

To export the location entries from SAP EHS Management to a CSV data file, you can use the R_EHFND_LOC_TO_CSV report. To export the location structure, you can use the R_EHFND_LHR_STRUCTURE_TO_CSV report.

1. Start transaction SE38.
2. Execute one of the following reports to export the corresponding data:
 - o Location entries: R_EHFND_LOC_TO_CSV
 - o Location structure: R_EHFND_LHR_STRUCTURE_TO_CSV
3. Enter a name for the CSV file.
Optionally, if you export locations, you can select the entries you want to export.
4. Execute the program.

The location data is taken from the BO nodes and then organized in the CSV files. For more information about the location BO nodes and the stored data, see SAP Note [1733565](#).

4.5.1.2.2 Importing Location Data

Locations

To import the locations into SAP EHS Management, you can use the LSMW. When you import locations, you can use the same data file for multiple imports in the same system. Note that the workbench performs a check and does not import already imported locations again. However, if an error occurs with any of the locations, you can fix the error and use the same file to import that location.

Location Structures

After you import the locations, you can import the location structure using the LSMW. If another location structure exists in the target system, the system merges both location structures.

Location Data Revisions

When you update the location data, you can create revisions of a location or a location structure that include the updated data. The revisions are stored in the system and tagged with the date on which they were created. The consecutive date tags of the location data revisions span a time interval for the specific revision.

When you export location data, all revisions are exported to the CSV file. Then, when you import the location structure, the revisions of the location structure are merged into the target system. If the revisions (time intervals) of the imported structure overlap the revisions of an existing structure, the system merges the structures and creates narrower revisions. Note that in this case, the system merges only the locations that are revised within the newly created interval. Thus, the imported locations may be transferred into a revision that is different from the original.

Example: You want to transfer LOC_STR_A with a revision that spans from 01.01.2012 to 01.02.2012. This revision features a location LOC_A, created on 15.01.2012.

LOC_STR_B with a revision that spans from 14.01.2012 to 01.02.2012 already exists in the target system. During the transfer, the system merges the structures and creates two new revisions: 01.01.2012–13.01.2012 and 14.01.2012–01.02.2012. The location LOC_A is merged in the newly created revision that spans from 14.01.2012 to 01.02.2012.

1. Start transaction LSMW and open one of the following projects and objects, depending on the data you want to import.

- o Locations
Project: LOC_MIGRATION
Object: LOC_IMPORT
 - o Location Structure
Project: LOC_STR_MIGR
Object: LOC_STR_IMPORT
2. Open the *Maintain Fixed Values, Translations, User-Defined Routines* process step and enable or disable a test data transfer.
TEST_RUN - Enables you to execute test import into the target system and error proof the real import at a later stage. Enter X in the Value field to enable a test run.
 3. Open the *Specify Files* process step and provide the import data file.
 4. Execute the rest of the import steps in the following order:
 1. Assign Files
 2. Read Data
 3. Display Read Data
 4. Convert Data
 5. Display Converted Data
 6. Start IDoc Generation
 7. Start IDoc Processing
 8. Create IDoc Overview
 9. Start IDoc Follow-Up

For more information about using the LSMW migration tool, see the documentation for the Legacy System Migration Workbench on SAP Help Portal at <http://help.sap.com/>.

4.5.1.3 Transferring Enhancement Data

You can transfer incident enhancement data from a source system to a target system using the incident data transfer procedure. For more information, see 4.5.1.4 Transferring Incident Data.

The report that you use to export incident data exports the enhancement data as well. However, before you execute the report you must specify the BO nodes that contain the enhancement data. This ensures that the data will be gathered by the report and exported to the CSV file.

You can specify the BO nodes for enhancement data in Customizing for SAP EHS Management under Incident Management → General Configuration → Specify Export Mapping for Data Transfer.

4.5.1.4 Transferring Incident Data

After you transfer the locations data and specify the enhancement data BO nodes, you can proceed with the transfer of incidents from a source system to a target system. Due to the specifics of the incident lifecycle, some of the objects within the incident cannot be transferred directly. The following subsections outline the handling of the incident's objects during the data transfer.

Incident and Workflow Statuses

The status of the transferred incident is preserved in the target system. However, the statuses of the related workflows may differ from the original ones. Note that the incident workflows are not transferred, but new workflows are created in the target system instead.

The bulleted list below outlines the differences in the workflow statuses during the transfer of incidents with the following statuses:

- **New**
The main workflow is not transferred. A new workflow for the incident is created and started. A *Review and Complete* task is sent to the incident manager.
- **In Process**
The workflows are not transferred. A new main workflow for the incident is created and started. A *Review and Complete* task is sent to the incident manager.
If the incident contains any workflows (such as, inquiries, actions, notifications, investigations, and so on) with the status *In Process*, the system creates corresponding workflows with the status *New*.
If the transferred incident contains OSHA or BG regulations, or injured people, report workflows are created for each of the injured people.
- **Closed**
The workflows are not transferred. The recurrent actions with the status *In Process* are transferred with the status *New*. However, only the action definition can be edited.
- **Void**
The workflows are not transferred. New workflows are not created in the target system.
- **Reopened**
The workflows are not transferred. A new main workflow for the incident is created and started. A *Review and Complete* task is sent to the incident manager.
If the incident contains any workflows (for example, inquiries, actions, notifications, and investigations) with the status *In Process*, the system creates corresponding workflows with the status *New*.
- **Incidents without a status.**
You cannot export or import incidents without a status.

Documents, Links, and Reports

All documents (URLs and attachments) in the incident are transferred to the target system. The reports (generated PDF files) and completed inquiries (with status Reply Received) are transferred to the Documents area of the *Reports/Documents* tab.

Note

Inquiries with open workflows are not transferred. Report forms and the corresponding details are not transferred either but created anew in the target system.

Dependent Objects

Objects that depend on external systems, such as investigation notifications or financial transaction orders, are not transferred directly to the target system. The external dependent objects are transferred only as document attachments (if available). The system cannot transfer the processes related to these objects.

Actions and Tasks

All actions and tasks in the incident (including the actions and tasks created for the dependent objects) are transferred to the target system. Tasks with the status *In Process* are transferred with the status *New*. The status of all other tasks (new, closed, and void) remains the same during the transfer.

4.5.1.4.1 Exporting Incidents

To export the incident data from SAP EHS Management, you can use the R_EHHSS_INC_TO_CSV report.

1. Start transaction SE38.
2. Execute the R_EHHSS_INC_TO_CSV report.
3. Enter a name for the CSV file and select the incidents you want to export.
4. Execute the program.

For more information about the incident BO nodes and the data they store, see SAP Note [1733565_Incident_Data](#). The incident data is taken from the BO nodes and then organized in the CSV files.

4.5.1.4.2 Importing Incidents

To import the incidents into SAP EHS Management, you can use the LSMW.

1. Start transaction LSMW.
 - o Project: INC_MIGRATION
 - o Object: IMPORT_INCIDENT
2. Open the *Maintain Fixed Values, Translations, User-Defined Routines* process step and enable, or disable a test data transfer.
TEST_RUN - Enables you to execute a test import into the target system and error proof the real import at a later stage. Enter X in the Value field to enable test run.
3. Open the *Specify Files* process step and provide the import data file.
4. Execute the rest of the import steps in the following order:
 - o Assign Files
 - o Read Data
 - o Display Read Data
 - o Convert Data
 - o Display Converted Data
 - o Start IDoc Generation
 - o Start IDoc Processing
 - o Create IDoc Overview
 - o Start IDoc Follow-Up

For more information about using the LSMW migration tool, see the documentation for the Legacy System Migration Workbench on SAP Help Portal at <http://help.sap.com/>.

4.5.1.5 Transferring Links

As a final step of the incident transfer, transfer the links between the incidents. Make sure that the linked incidents are already transferred into the target system. The link is not transferred if any of the incidents are missing.

Note

LSMW cannot transfer links between incidents and risk assessments.

4.5.1.5.1 Exporting Links

To export links from SAP EHS Management, you can use the R_EHHSS_INC_LINKI_TO_CSV report.

1. Start transaction SE38.
2. Execute the R_EHHSS_INC_LINKI_TO_CSV report.
3. Enter a name for the CSV file and choose Execute.

For more information about the link BO node and the data stored in it, see SAP Note [1733565](#). The link data is taken from the BO node and then organized in the CSV file.

4.5.1.5.2 Importing Links

To import the links into component extension for SAP EHS Management, you can use the LSMW.

Note

Before you proceed with the transfer of the links, you must specify an RFC connection to the source system in the LSMW.

1. Start transaction LSMW.
 - o Project: INC_MIGRATION
 - o Object: EHSM_LINK_MIGR
2. Open the *Maintain Fixed Values, Translations, User-Defined Routines* process step and enable, or disable a test data transfer.
TEST_RUN - Enables you to execute a test import into the target system and error proof the real import at a later stage. Enter X in the Value field to enable the test run.
3. Open the *Specify Files* process step and provide the import data file.
4. Execute the rest of the import steps in the following order:
 - o Assign Files
 - o Read Data
 - o Display Read Data
 - o Convert Data
 - o Display Converted Data
 - o Start IDoc Generation
 - o Start IDoc Processing
 - o Create IDoc Overview
 - o Start IDoc Follow-Up

For more information about using the LSMW migration tool, see the documentation for the Legacy System Migration Workbench on SAP Help Portal at <http://help.sap.com/>.

4.5.2 Transferring Incident Data from Non-SAP Systems

Component Extension 3.0 for SAP EHS Management enables you to import incident data that was exported from a source, non-SAP system to commonly accepted CSV files. To import the CSV files, you can use the LSMW.

4.5.2.1 Prerequisites

The following prerequisites must be met before you proceed with the transfer of incidents from an external system to component extension for SAP EHS Management:

- If you are transferring data for the first time, create an LSMW user profile as an initial step by executing the *Maintain Object Attributes* step in the LSMW.
- If you used any of the objects below in the incidents you want to import, specify these objects in the target system:
 - Plants
 - Materials
 - Internal and maintenance orders
- In the target system or in the HR system used by the target system, you have specified the information about people included in the incidents.
- You have aligned the incident BO in the target system with the structure of the CSV file.
This also means that if the CSV file contains customer-specific enhancement data, you must enhance the BO in the target system with the corresponding enhancement nodes.
- If the source system depends on other systems' data via connections, you must configure RFC connections in the target system to these systems.
To establish RFC connections, use the following Customizing activity: SAP EHS Management → Foundation for EHS Management → Integration → Specify Destinations for Integration.

4.5.2.2 Structuring the CSV Files

Before you transfer the incident data, you must make sure that the CSV file is structured in a way that the LSMW can read and transfer to the incident BO in the target system. This means that as a prerequisite, you must maintain the file structure and adapt, if necessary, the mapping between the data in the file and the BO fields in LSMW. For more information about the file structure and the BO fields in LSMW, see the following SAP Note: [1733565](#)

4.5.2.3 Transferring Incidents

Similarly to the transfer of incidents between SAP EHS Management systems, you should transfer incident data from third party systems in several stages. In the different stages, you transfer data that is needed for the final transfer of incidents to the target system.

For more information about the data import using LSMW, see the import procedures described in the following sections of 4.5.1 Transferring Incident Data from Component Extension for SAP EHS Management.

1. Importing Location Data
2. Importing Incidents
3. Importing Links

4.5.3 Transferring Specification Data from SAP EHS Management as part of SAP ERP

The component extension for SAP EHS Management (the SAP EHS Management add-on) provides three reports to transfer chemical data from the specification database of SAP EHS Management as part of SAP ERP to the SAP EHS Management add-on system for use in the management of chemicals for health and safety processes and in the risk assessment business process.

If you use the specification database for managing hazardous substances, you can leverage your existing investment and transfer the chemical data from the SAP ERP EHS system to the SAP EHS Management add-on system on a regular basis (see also section 4.6.1).

For more information, see SAP Library on SAP Help Portal at <http://help.sap.com> under SAP Business Suite Applications → SAP EHS Management → Component Extension for SAP EHS Management → Component Extension for SAP EHS Management 5.0 → Application Help → Risk Assessment → Managing Chemicals for Health & Safety Processes → Transferring Data from the Specification Database

4.6 Periodic Tasks

4.6.1 Scheduling of Periodic Tasks

This chapter 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. You can find the mapping in the Scenario / Component Matrix section. 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.

4.6.1.1 System Jobs

Table 4 Scheduled Periodic Tasks

Program Name/Task	Recommended Frequency	Detailed Description
	Daily	See Customizing activity Schedule Job for

Program Name/Task	Recommended Frequency	Detailed Description
R_EHFND_CHECK_COMPL_EXT_NOTIF		Notification Status Check EHFND_CHECK_COMP_NOT
R_EHFND_SYNCEAM_LOCATION	Daily	See Customizing activity Schedule Jobs for Location Synchronization EHFND_LOC_SYNCEAM
R_EHFND_WFF_UPDATE_STATISTICS	Daily	See Customizing activity Schedule Jobs for Process Statistics EHFND_WFF_STAT
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
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 EHPRC_SCC_JOBS
R_EHPRC_WL_REGCHG_GENERATE	After event: SAP_EHPRC_START_REG_WL_GENERATE	See Customizing activity Setting Up Jobs for Regulatory List Revision
R_EHPRC_WL_REGCHG_POST_PROC	Daily	See Customizing activity Setting Up Jobs for Regulatory List Revision
R_EHPRC_IMDS_DOWNLOAD	Daily	See Customizing activity Set Up Daily Synchronization with IMDS
R_EHPRC_IMP_APPL_BATCH_JOB Variants: <ul style="list-style-type: none"> • IMDS_PURE • IMDS_ORG • IMDS_REQ 	Daily	See Customizing activity Set Up Daily Synchronization with IMDS

Program Name/Task	Recommended Frequency	Detailed Description
<ul style="list-style-type: none"> IMDS_MODUL 		
EHPRC_IMDS_RESULT_DOWNLOAD	Every 10 Minutes	See Customizing activity Set Up Daily Synchronization with IMDS
R_EHPRC_PBB_SUPPL_CHNG_MON	Every 10 Minutes	See Customizing activity Schedule Job for Changes in Supplier and Manufacturer Material Information
<ol style="list-style-type: none"> R_EHFND_PHRASE_TRANSFER R_EHFND_FILL_REGL_BY_EHS_SUBST 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_EHFND_TS_CHECK_EXECUTE	Daily during night but before calendar day is started. (For example, 23:45)	See Customizing activity Schedule Jobs for Executing Check on Time Series

In addition to the standard jobs mentioned in the Technical Operations Manual (see 2.3 SAP NetWeaver (Underlying Software)), you must schedule jobs specific to SAP EHS Management 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.

4.6.1.2 Process Chains for Analytical Reporting

Analytical reporting in SAP EHS Management is based on data in the SAP Business Warehouse (BW) system. In order to update the data in BW on a regular basis, it is necessary to schedule the process chains. For more information, see the documentation in SAP Solution Manager under Solutions/Applications → SAP EHS Management: Business Process Configuration → Scenarios → Asset Safety and Compliance → Keep the People Safe → Business Processes → Managing Incidents → Generate BI Analytical Reports.

4.6.2 Required Manual Periodic Tasks

This chapter describes all manual tasks that need to run periodically in order to keep the application running smoothly over time. In contrast to the scheduled tasks listed above which can be automated using a task scheduler program, manual tasks need to be executed by a person. Manual tasks may be required on component level and are therefore relevant in each scenario that uses the component. You can find the mapping in the Scenario / Component Matrix section. 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.

This chapter describes manual tasks (as opposed to scheduled tasks that the system performs automatically) that you must run periodically to keep the application running smoothly over time. Such tasks may be required on the component level and are therefore relevant in each scenario that uses the component. It is important that you monitor the successful execution of these tasks on a regular basis.

4.6.2.1 Monitoring the Application Log

You should monitor the application log on a regular basis. Problems with the scheduler and other components may be found efficiently with this tool. For more information about monitoring using the application log, see Trace and Log.

4.6.2.2 Cleanup of BW Items

To prevent the database tables from filling up, it is necessary to delete some items (for example, requests in the PSA) on a regular basis.

For more information, see the documentation in SAP Solution Manager under Solutions/Applications → SAP EHS Management: Business Process Configuration → Scenarios → Asset Safety and Compliance → Keep the People Safe → Business Processes → Managing Incidents → Generate BI Analytical Reports.

4.7 Load Balancing

SAP EHS Management uses the standard SAP NetWeaver functionality for logon and load balancing. For more information about network load balancing, see Table 1: Links to SAP NetWeaver Documentation.

Categories of System Components for Backup and Restore

Categories of System Components	Category Properties	Suggested Methods for Backup and Restore	Examples
I	Only software, no configuration or application data	<ul style="list-style-type: none"> - No backup, new installation in case of a recovery or - Initial software backup after installation and upgrade - Backup of log files 	BDOC modeler

Categories of System Components	Category Properties	Suggested Methods for Backup and Restore	Examples
II	Only software and configuration information, no application data	<ul style="list-style-type: none"> - Backup after changes have been applied or - No backup, new installation and configuration in case of a recovery - Backup of log files 	SAP Gateway Comm. Station SAP Business Connector SAP IPC (2.0C)
III	Only replicated application data, replication time is sufficiently small for a recovery	Data: <ul style="list-style-type: none"> - No data backup needed - Backup of software, configuration, log files 	SAP IMS/Search Engine SAP IPC (2.0B) Web server SAP ITS
IV	Only replicated application data, backup recommended because replication time is too long, data not managed by a DBMS	Data: <ul style="list-style-type: none"> - Application specific file system backup or - Multiple instances - Backup of software, configuration, log files 	SAP IMS/Search Engine Web server
V	Only replicated application data, backup recommended because replication time is too long, data managed by a DBMS	Data: <ul style="list-style-type: none"> - Database and log backup or - Multiple instances - Backup of software, configuration, log files 	SAP IPC (2.0B) Catalog Server
VI	Original application data, standalone system, data not managed by a DBMS	Data: <ul style="list-style-type: none"> - Application specific file system backup - Backup of software, configuration, log files 	Web server
VII	Original application data, standalone system, data managed by a DBMS, not based on SAP WebAS	Data: <ul style="list-style-type: none"> - Database and log backup - Backup of software, configuration, log files 	
VIII	Original application data, standalone system, based on SAP WebAS	Data: <ul style="list-style-type: none"> - Database and log backup, application log backup (such as job logs in file 	Standalone SAP R/3

Categories of System Components	Category Properties	Suggested Methods for Backup and Restore	Examples
		system) - Backup of software, configuration, log files	
IX	Original application data, data exchange with other systems, data not managed by a DBMS	Data: - Application specific file system backup, data consistency with other systems must be considered - Backup of software, configuration, log files	
X	Original application data, data exchange with other systems, data managed by a DBMS, not based on SAP WebAS	Data: - Database and log backup, data consistency with other systems must be considered - Backup of software, configuration, log files	SAP liveCache SAP Mobile Workbench
XI	Original application data, data exchange with other systems, based on SAP WebAS	Data: - Database and log backup, application log backup (such as job logs in file system), data consistency with other systems must be considered - Backup of software, configuration, log files	SAP R/3 SAP CRM SAP APO SAP BW

5 Software Change Management

Software change management standardizes and automates software distribution, maintenance, and testing procedures for complex software landscapes and multiple software development platforms. These functions support your project teams, development teams, and application support teams.

The goal of software change management is to establish consistent, solution-wide change management that allows for specific maintenance procedures, global rollouts (including localizations), and open integration with third-party products.

This section provides additional information about the most important software components.

The following topics are covered:

- Transport and Change Management - Enables and secures the distribution of software changes from the development environment to the quality assurance and production environment.
- Development Request and Development Release Management – Enables customer-specific maintenance procedures and open integration with third-party products.
- Quality Management and Test Management - Reduce the time, cost, and risk associated with software changes.
- Support Packages and SAP Notes Implementation – Provide standardized software distribution and maintenance procedures.

5.1 Transport and Change Management

All components of SAP EHS Management are client-enabled. For transport and change management issues, the procedures of SAP NetWeaver apply. For more information, see Table 1: Links to SAP NetWeaver Documentation.

5.2 Development Requests and Development Release Management

The standard procedures of SAP NetWeaver apply. See the Technical Operations Manual for SAP NetWeaver on SAP Help Portal under SAP NetWeaver.

5.3 Quality Management and Test Management

You can use the [SAP NetWeaver Development Infrastructure](#) to learn about the various possibilities to test your software changes.

5.4 Support Packages and Patch Implementation

➔ Recommendation

We recommend that you implement Support Package Stacks (SP-Stacks), which are sets of support packages and patches for the respective product version that must be used in the given combination. The technology for applying support packages and patches will not change.

Read the corresponding Release and Information Notes (RIN) before you apply any support packages or patches of the selected SP Stack.

Use the Maintenance Optimizer (transaction DSWP) of the SAP Solution Manager to select, download, and install the required usages, software components, and support packages.

For more information, see the following:

- SAP Service Marketplace at <http://service.sap.com/solman-mopz>
- The documentation for transaction SAINT (SAP Add-On Installation Tool)

For more information about the implementation of support packages as well as possible side effects, see <http://service.sap.com/patches> → SAP Support Packages in Detail.

For more information about the tools necessary for implementing patches, see Table 1: Links to SAP NetWeaver Documentation.

6 Troubleshooting

6.1 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.

6.1.1 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 6.2 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 SAP EHS Management 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.

6.1.2 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 *Check* icon 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.

6.1.3 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.

6.2 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 SAP EHS Management 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 SAP EHS Management under Foundation for EHS Management → 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. See Table 2 Overview of Application Log Objects for the scheduler log objects.

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 chapter 4.3 Administration Tools.

6.3 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](#).

6.4 Notifications

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 under 6.1 Troubleshooting the Process Foundation.

If you are sure that there are no problems with the process, check the monitoring transactions for notifications (see Table 3 Monitoring Transactions for Notifications to Integrated Systems).

Pay special attention to the requirements of these notifications as described in the Customizing activity *Specify Notification Types* (EHFNDC_NOTIF_TYP).

6.5 Business Warehouse for Analytical Reporting

The process chain log (transaction RSPC) shows the status for each step of the process chain. If a step has failed, it is possible to navigate to the respective process monitor that displays more detailed log messages about the failed process.

Usually there are three main types of issues:

1. The process monitor just shows the message "Job terminated in source system". In this case, check if the extractor caused a short dump in the source system.
2. The process seems to run forever. In this case, check if all affected BI content objects are active.
3. The process monitor shows a more specific error message. In this case, the message should give hints for further troubleshooting. Check the long text of the message. Check the data in the different containers, such as PSA, DSO (new data, active data), and InfoCubes.

For more information, see the documentation on Business Intelligence on SAP Help Portal at <http://help.sap.com/nw70/> → SAP NetWeaver Library → SAP NetWeaver by Key Capability → Information Integration by Key Capability → Business Intelligence.

6.6 Business Object Processing Framework (BOPF)

6.6.1 Tools for BOPF Debugging

6.6.1.1 Checkpoint Groups and Checkpoint Group Activation Variants

Single checkpoint groups do not usually need to be activated, because there are numerous checkpoint groups within BOPF. We recommend that you use only the existing checkpoint group activation variants as described in the table below.

The only other important checkpoint group for error analysis is /BOPF/FRW_FLUSH. If you activate this checkpoint group, then internal modifications (done via IO_MODIFY) are executed immediately, rather than being

buffered and executed only when needed. By this direct flush, you can more easily locate a problem caused by an incorrect modification (for example, usage of a wrong NODE_KEY), especially if it happens within a large number of modifications.

6.6.1.1.1 Checkpoint Group Activation Variants

The following activation variants for checkpoint groups are available to help you analyze problems with your model or implementation:

Activation Variant	Description	Scope
/BOPF/ALL	Business Object Processing Framework	All relevant checkpoint groups are activated
/BOPF/ERROR	Business Object Processing Framework - catch errors	All relevant checkpoint groups for errors are activated
/BOPF/WARNING	Business Object Processing Framework - catch warnings	All relevant checkpoint groups for warnings are activated

What does activation mean?

Activating these groups will set the relevant checkpoint groups to BREAK-POINT for all relevant ASSERTIONS. It will not activate any BREAK-POINTS or LOG-POINTS.

Recommendation

We recommend that you always have the checkpoint group activation variant /BOPF/ERROR active. This helps you to detect errors upfront.

6.6.1.2 Debugger Scripts

BOPF provides debugger scripts to improve the error analysis and the debugging experience within BOPF.

You can run the following scripts by selecting the script wrapper tool in the debugger:

- Model GUID Conversion Script
- Script to display model names for GUIDs in the debugger, for example, to display the name of a node for a NODE_KEY available in the debugger.
- Buffer Content Script
- Script to display the current buffer content from any location for a business object node.
- Framework Object Content Script
- Script to display the content of a BOPF framework object (change, message, property) in a readable manner.
- Modification Content Script
- Script to display the content of a modification table in a more convenient way.

6.6.2 Hint for Debugging in BOPF

BOPF translates every exception that is not cached within determinations or actions into a MESSAGE TYPE X. If a BOPF error has occurred, you can find it in transaction ST22.

To debug the error, you can perform the following steps:

1. In ST22, navigate to the 'Active Calls/Events' section to see which class participated in the problem.
2. Set a breakpoint in the class /BOBF/CL_FRW=>SET_APPLICATION_ERROR and rerun the action that led to the problem again.
3. Analyze the call stack, and go back one step.

6.6.3 Software Layer Aware Debugging

You can use software layer aware debugging to define which object sets should be visible during debugging. For example, if you want to debug your application logic, you can deactivate the complete BOPF framework coding within the debugger by activating and using the correct debugger profile.

Example

If you are debugging your determinations and you have activated a profile that excludes the BOPF framework and probably also the buffer and data access layer at the end of a determination, the next debugger step (F5) will take you directly into the next determination.

To activate software layer aware debugging, choose Settings → Change Debugger Profiles / Settings in the new debugger and select the *Debugger Profile Act*. Checkbox. Then choose an existing profile or create a temporary profile.

6.6.3.1 Debugger Profiles

The following profiles are predefined by BOPF to be used directly:

Profile	Name	Description
/BOPF/TOOL_BUFFER	BOPF Buffer Implementation	Profile to debug only buffer calls
/BOPF/TOOL_BUSINESS_CONTENT	BOPF Application Business Content	Profile to debug only business content
/BOPF/TOOL_DATA_ACCESS	BOPF Data Access Implementation	Profile to debug only data access calls
/BOPF/TOOL_DELEGATION	BOPF Delegation Implementation	Profile to debug only delegation calls
/BOPF/TOOL_FRAMEWORK	BOPF Framework	Profile to debug only the BOPF framework

Profile	Name	Description
/BOPF/TOOL_SERVICE_PROVIDER	BOPF Service Provider	Profile to debug only the service provider

7 Support Desk Management

Support Desk Management enables you to set up an efficient internal support desk for your support organization that seamlessly integrates your end users, internal support employees, partners, and SAP Active Global Support specialists with an efficient problem resolution procedure.

For support desk management, you need the methodology, management procedures, and tools infrastructure to run your internal support organization efficiently.

7.1 Remote Support Setup

For information about remote support setup, see SAP Service Marketplace at <http://service.sap.com/access-support>.

For the SAP EHS Management, the standard R/3 support connection is normally sufficient. In very rare cases, the support requires direct access to the optimization server via Windows Terminal Server / Telnet (depending on the operating system you use).

7.2 Problem Message Handover

For information about processing of internal support messages and forwarding them to SAP, see SAP Help Portal at <http://help.sap.com> → SAP Solution Manager → SAP Solution Manager 7.0 → English → Service Desk.

For sending problem messages/tickets to SAP, choose the appropriate component (or subcomponent) name from the SAP component hierarchy:

EHS-MGM SAP EHS Management

- + EHS-MGM-FND Foundation for EHSM
 - + EHS-MGM-FND-WF Workflow Foundation for EHSM
 - + EHS-MGM-FND-FRM Print Forms and Interactive Forms for EHSM
 - + EHS-MGM-FND-EP Portal Content for EHSM
 - + EHS-MGM-FND-BOC EHSM Business Objects, Common Components
 - + EHS-MGM-FND-INT EHSM Integration Objects
 - + EHS-MGM-FND-UI EHSM User Interface, Common Components
 - + EHS-MGM-FND-LOC Location/Location Structure for EHSM
- + EHS-MGM-INC Incident Management
 - + EHS-MGM-INC-REC Incident Recording
 - + EHS-MGM-INC-WF Incident Workflow and Tasks
 - + EHS-MGM-INC-FRM Incident Interactive Forms and Print Forms
 - + EHS-MGM-INC-REP Incident Reporting

+ EHS-MGM-INC-ANA	Incident Analytics, Dashboards, Reports
+ EHS-MGM-RAS	Risk Assessment
+ EHS-MGM-RAS-AEV	Risk Analysis and Evaluation
+ EHS-MGM-RAS-AME	Analysis Methods for Risk Assessment
+ EHS-MGM-RAS-ANA	Analytics and Reports for Risk Assessment
+ EHS-MGM-RAS-FRM	Print Forms and Interactive Forms for Risk Assessment
+ EHS-MGM-RAS-IDN	Risk Identification
+ EHS-MGM-RAS-TMT	Risk Treatment
+ EHS-MGM-RAS-WF	Workflows and Tasks for Risk Assessment
+ EHS-MGM-PRC	Product Compliance
+ EHS-MGM-PRC-IMD	IMDS
+ EHS-MGM-PRC-MAT	Material and Product Structure Assessment
+ EHS-MGM-PRC-REP	Reporting
+ EHS-MGM-PRC-SCC	Supply Chain Collaboration

For an overview of all services provided by SAP EHS Management, see SAP Service Marketplace at <http://service.sap.com/safeguarding> .

8 Appendix

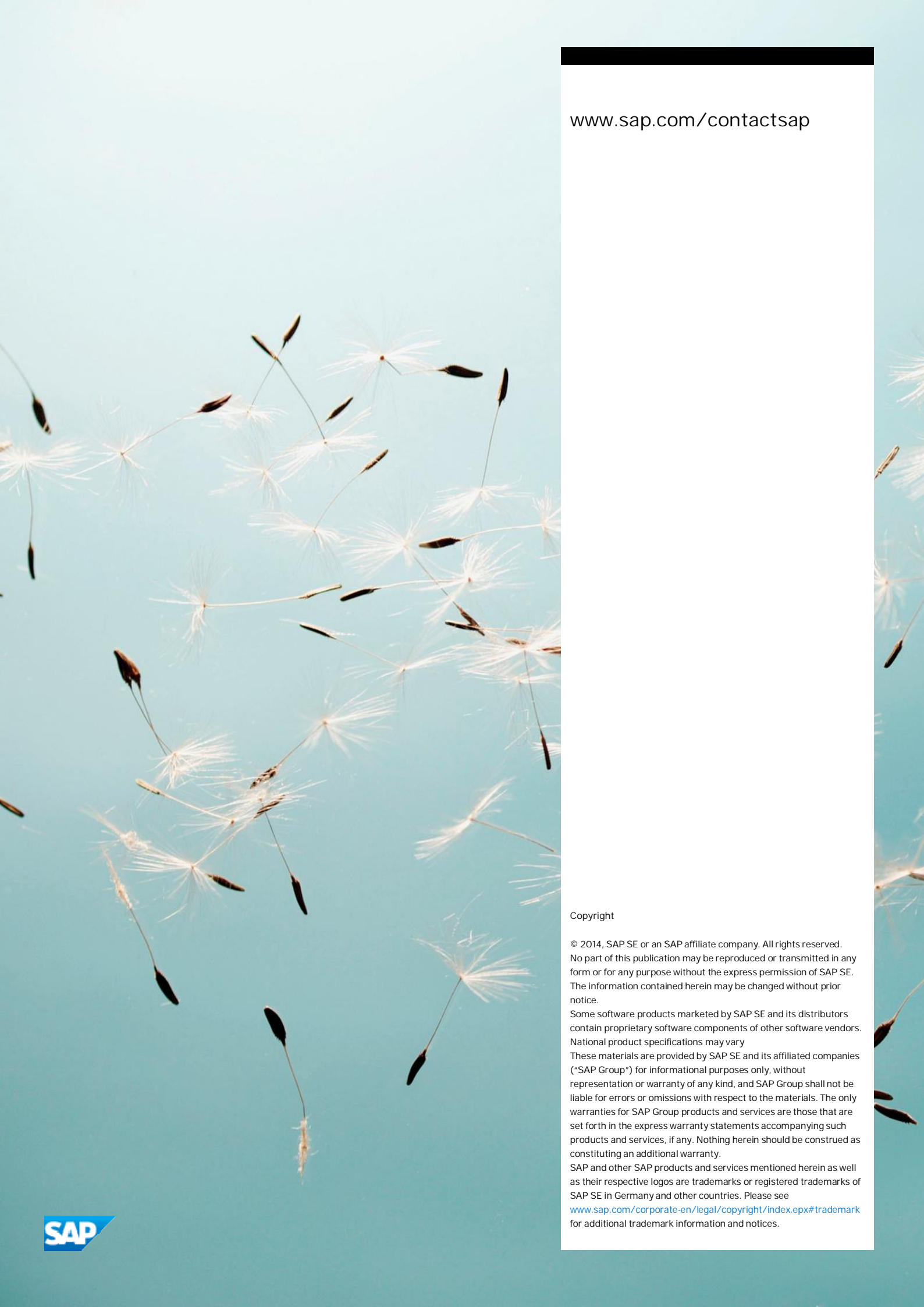
8.1 Related Guides

You can find more information about installation and configuration in the Master Guide.

8.2 Related Information

The following table contains links to information relating to the Application Operations Guide.

Content	Quick Link to the SAP Service Marketplace
Master Guide, Installation Guide and Upgrade Guide	instguides ibc
Related SAP Notes	notes
Released Platforms	platforms
Network Security	securityguide network
Technical Infrastructure	ti
SAP Solution Manager	solutionmanager



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