

SAP Advanced Planning and Optimization 7.0 Including Enhancement Package 3

**Using SAP enhancement package 3 for SAP SCM 7.0 or SAP enhancement
package 6/7 for SAP ERP 6.0**



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Typographic Conventions

Table 1

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

Document History

Caution

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

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

Table 2

Version	Date	Description
1.0	2013-08-08	Initial Version
1.1	2014-05-19	Minor enhancements in chapter 1 regarding SAP Fiori References to Scenario & Process Component List (SCL/PCL) deleted (chapters 4.1, 4.4)
1.2	2015-01-30	As of support package 7 for SAP APO 7.0 EHP 3, the following applications are not only supported in an SCM Server installation, but also in an add-on on SAP ERP 6.0 EHP 6/7: <ul style="list-style-type: none">• Applications that use Integrated Product and Process Engineering (iPPE), including the following:<ul style="list-style-type: none">◦ Model Mix Planning (MMP)◦ Rapid Planning Matrix (RPM)◦ Planned Order Management (POM)◦ Action Handler• Planning with classification data (characteristics-dependent planning, variant configuration) and planning with batch data The section <i>Make to Order for OEM</i> was updated accordingly. For more information, see the SAP Notes 2096165 (iPPE) and 2096140 (planning with classification and batch data).

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1 Getting Started

Caution

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

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

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 carry them out. It also refers to documentation required for these tasks. You must use this guide in connection with 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

SAP Advanced Planning and Optimization (SAP APO) provides two deployment options:

- SAP APO **as part of** SAP Supply Chain Management (SAP SCM)
This deployment option requires to use *SAP enhancement package 3 for SAP SCM 7.0* (including SAP APO). *SAP enhancement package 3 for SAP SCM 7.0* is based on *SAP NetWeaver 7.4*.
- SAP APO **as add-on for** SAP Enterprise Resource Planning (SAP ERP)
This deployment option requires to use either *SAP enhancement package 3 for SAP APO 7.0 on SAP enhancement package 6 for SAP ERP 6.0* or *SAP enhancement package 3 for SAP APO 7.0 on SAP enhancement package 6 for SAP ERP 6.0*.
SAP enhancement package 6 for SAP ERP 6.0 is based on *SAP enhancement package 3 for SAP NetWeaver 7.0*.
SAP enhancement package 7 for SAP ERP 6.0 is based on *SAP NetWeaver 7.4*.

SAP Fiori apps

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

1.1 Global Definitions

SAP Application:

An SAP application is an SAP software solution that serves a specific business area like ERP, CRM, PLM, SRM, SCM. It represents a market view on groups of related business scenarios. The delivery of an application contains

SAP components that are essential for implementing all application-related business scenarios, processes and functions. The implementation knowledge is allocated together with an application. For example, the SAP application SAP SCM 7.0 consists of several components such as SAP SCM Basis 7.0, SAP SCM 7.0 Server, and others.

Business Scenario:

From a microeconomic perspective, a business scenario is a cycle which consists of several different interconnected logical processes in time. 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.

1.2 Important SAP Notes



Caution

Check regularly for updates for the Application Operations Guide.

Table 3: Important SAP Notes

SAP Note Number	Title	Comment
100740	Setting up a PCAnywhere connection in the SAP frontend	This note describes how to set up a PCAnywhere connection in the SAP frontend.
592085	Installing the HTTP Connect service	This note describes how to install the HTTP Connect service.
605795	Windows Terminal Server connection in remote support	This note describes how to set up Windows Terminal Server connection in remote support.
617547	RZ20: Sending alerts as mail and SMS	Describes how to use transaction RZ20 to send alerts from the CCMS monitoring architecture as an e-mail, SMS, or other message types to one or several recipients.
1118147 (Only relevant for SAP APO as part of SAP SCM)	Report for deregistering invalid observers in IBINOBS	This note describes how to solve the following problem: there is a large volume of entries is caused by invalid IBINOBS entries; observers which are not used any more.

SAP Note Number	Title	Comment
1228423	APO Planning Run and CIF Activities in parallel	This note describes how to solve the following problem: planning runs of one or several SAP SCM APO applications are scheduled in parallel to data transfer from SAP ERP to SAP SCM via the Core Interface (CIF). Planning runs or CIF updates report (locking) errors, or planning results or CIF updates are inconsistent or incomplete. These errors can be caused by lock collisions because CIF and a planning run might change the same data (in most cases the same order) concurrently.
1330450	Installation of SCM Optimizer Version 10.0	This note describes the implementation of SCM Optimizer 10.0 .

2 Technical System Landscape

2.1 Scenario/Component Matrix

For more information regarding the components necessary for business scenarios and processes, see the SAP APO Master Guide on the SAP Service Marketplace at ► service.sap.com/instguides ► *SAP Business Suite Applications* ► *SAP SCM* ► *SAP APO* ► *Using SAP enhancement package 3 for SAP APO Server 7.0* ►.

2.2 Related Documentation

The following table lists where you can find more information about the technical system landscape:

Table 4

Topic	Guide/Tool	Quick Link on SAP Service Marketplace
Application and industry-specific components, such as SAP Financials and SAP Retail	Master Guide	► service.sap.com/instguides ►
Technology components such as SAP NetWeaver	Master Guide	► service.sap.com/instguides ►
Sizing	Quick Sizer Tool	► service.sap.com/sizing ►
Technical configuration	Technical Infrastructure Guide — SAP NetWeaver 7.0 (or 7.4)	► service.sap.com/installNW70 ► or ► service.sap.com/installNW74 ►
Scalability	Technical Infrastructure Guide — SAP NetWeaver 7.0 (or 7.4)	► service.sap.com/installNW70 ► or ► service.sap.com/installNW74 ►
High availability	Technical Infrastructure Guide — SAP NetWeaver 7.0 (or 7.4)	► service.sap.com/installNW70 ► or ► service.sap.com/installNW74 ►
Security	Security Guide	► service.sap.com/securityguide ►

3 Monitoring of SAP Advanced Planning and Optimization (SAP APO)

Within the management of SAP Technology, monitoring is an essential task. This section is therefore devoted strictly to this subject.

For more information about the underlying technology, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703 under ► *SAP NetWeaver* ► *Administrator's Guide* ► *Technical Operations for SAP NetWeaver* or help.sap.com/nw74 under ► *SAP NetWeaver* ► *System Administration and Maintenance Information* ► *Technical Operations for SAP NetWeaver*.

3.1 Alert Monitoring with CCMS

Proactive automatic 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 to recognize critical situations for SAP APO as quickly as possible.

3.1.1 CCMS Monitoring Installation and Setup

SAP APO is technically based on SAP NetWeaver and thus reuses monitoring tools from SAP NetWeaver, such as the Computing Center Management System (CCMS). Therefore, we recommend that you set up the Monitoring Infrastructure as described in the Monitoring Setup Guide for SAP NetWeaver located on SAP Service Marketplace at ► service.sap.com/instguides ► *SAP NetWeaver* ► *SAP NetWeaver 7.0 (Including Enhancement Package 3)* or *SAP NetWeaver 7.4* ► *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 APO. Proficient knowledge of system monitoring and basic knowledge of SAP NetWeaver is required to compose the user-defined APO monitors recommended within this guide.

To enable the auto-alert mechanism of CCMS, see SAP Note [617547](https://support.sap.com/en/notes/617547).

For more information about monitoring, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *Administration of Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP*.

3.1.2 Component-Specific Monitoring

You can use CCMS to monitor the following components:

- SAP SCM Basis
- SAP APO
- SAP liveCache
- SAP SCM Optimizer
- Internet Graphics Service (IGS)

For this purpose, SAP APO provides the following monitor sets, which can be accessed on the *SAP Easy Access* screen, by choosing ► *Tools* ► *CCMS* ► *Control/Monitoring* ► *CCMS Monitor Sets* ► (transaction RZ20):

- SAP SCM Basis Monitor Templates
Comprises the *CIF Master Data Queue Monitor*
- SAP SCM Monitor Templates
Comprises the monitors for SAP APO, SCM Optimizer, and SAP liveCache

i Note

If you use a central monitoring system (CEN) to monitor the above-mentioned components, make sure that this system works with SAP enhancement package 3 for SAP NetWeaver 7.0 (or SAP NetWeaver 7.4). Only then can you use all monitorable data (for example monitoring templates) provided with SAP APO.

For more information about monitoring, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver Library* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *Administration of Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP* ► or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP* ►.

SAP SCM Basis (Part of SCM)

For more information about the monitoring of SAP SCM Basis, see

SAP APO

SAP SCM allows you to monitor CIF and qRFC related values, such as the status of CIF Compare Reconcile (delta report), CIF postprocessing entries, the consumption of planned independent requirements, or an overview of blocked qRFCs, but also SNP related values for master data and time series.

You can start the monitor in the *SAP Easy Access* screen by choosing ► *Advanced Planning and Optimization* ► *APO Administration* ► *Integration* ► *Monitor* ► *CCMS Monitor Sets* ► *SAP SCM Monitor Templates* ► *APO Monitor* ►.

For more information about setting up this monitor, see SAP Library for SAP Supply Chain Management, on SAP Help Portal at help.sap.com/scm703, under ► *SAP Supply Chain Management (SAP SCM)* ► *SAP Advanced Planning and Optimization (SAP APO)* ► *Integration via Core Interface (CIF)* ► *Technical Integration* ► *Core Interface (CIF)* ► *Administration* ► *Monitoring* ► *SAP APO Monitoring with CCMS* ►.

If you want to monitor CIF using the SAP Solution Manager, see the Best Practice document *System Monitoring for mySAP SCM with SAP Solution Manager and CCMS* (service.sap.com/~sapidb/011000358700002213412003E).

SAP liveCache Technology

You can use the SAP liveCache Alert Monitor to identify memory problems in good time, to check the security of your SAP liveCache, and to monitor performance.

You can choose from the following displays for each SAP liveCache node in the monitoring tree:

- *Properties* (displays the SAP liveCache properties, the SAP liveCache status, and error messages)
- *Space Management* (memory in the data area, log area, and main memory)
- *Performance* (cache hit rates, free database sessions for user tasks, the status of the write-protection for the OMS monitor, and information about the optimizer statistics)
- *Backup/Recovery* (information about backups and recoveries)
- *Health* (information about bad indexes and database structure checks)
- *liveCache Applications* (information about the APO system)
- *External Analysis Tools* (information from the Database Analyzer)

You can use the following start options for the Alert Monitor:

- On the *SAP Easy Access* screen, call the DBA Cockpit (transaction `DBACOCKPIT`) and choose *Alerts*.
- On the *SAP Easy Access* screen, call the CCMS Monitor (transaction `RZ20`) and choose ► *SAP CCMS Monitors for Optional Components* ► *MaxDB Monitoring* ► *liveCache* ⌵.

For more information about the DBA Cockpit, see SAP Library for help.sap.com/maxdb under ► *Tools* ► *Database Administration in CCMS: SAP MaxDB* ► *DBA Cockpit: SAP MaxDB* ⌵

Additionally, see the Best Practice document *System Monitoring for mySAP SCM (3.0-4.1) with SAP Solution Manager and CCMS* (service.sap.com/~sapidb/011000358700002213412003E).

To use the CCMS Monitoring of SAP liveCache, you need to activate the Alert Monitoring in the DBA Cockpit (transaction `DBACOCKPIT`). For more information about the DBA Cockpit, see SAP Library for help.sap.com/maxdb under ► *Tools* ► *Database Administration in CCMS: SAP MaxDB* ► *DBA Cockpit: SAP MaxDB* ⌵.

Additionally, you need to schedule report `/SAPAPO/OM_LCAALERTS` in regular intervals (see section [SAP APO \[page 54\]](#) of this document). This report provides the information for the CCMS node *liveCache Applications*.

You can start the monitor on the *SAP Easy Access* screen by choosing ► *Advanced Planning and Optimization* ► *APO Administration* ► *Integration* ► *Monitor* ► *CCMS Monitor Sets* ► *SAP SCM Monitor Templates* ► *liveCache Monitor* ⌵.

You can also use the DBA functions of the CCMS to administer your MaxDB database system. See section [SAP liveCache Technology \[page 38\]](#) of this document for details.

SAP SCM Optimizer

You can start the monitor on the *SAP Easy Access* screen by choosing ► *Advanced Planning and Optimization* ► *APO Administration* ► *Integration* ► *Monitor* ► *CCMS Monitor Sets (transaction RZ20)* ► *SAP SCM Monitor Templates* ► *SAP Optimizer* ⌵.

Internet Graphics Service

The Internet Graphics Service (IGS) is part of SAP NetWeaver, and it is used on SAP SCM screens to support the display of graphics. Since SAP SCM also uses the IGS, you should also monitor this component. CCMS gives you an overview of the current IGS configuration, the port watchers available, and their associated interpreters. It also displays various performance values for the relevant IGS components.

To monitor IGS in CCMS, you must activate CCMS Monitoring. You can do so by starting the `GRAPHICS_IGS_ADMIN` report in transaction `SE38`. Then enter **IGS RFC-Destination** and choose F8. Then select the menu *Environment* and choose *Switch on CCMS*.

You can find the monitor tree for IGS in the CCMS (transaction `RZ20`) as the *Internet Graphics Server* in the monitor set *SAP CCMS Monitors for Optional Components*.

For more information about the values displayed in CCMS, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *UI Technologies in ABAP* ► *Further UI Technologies* ► *SAP Graphics* ► *Internet Graphics Service* ► *Administering the Internet Graphics Service (IGS)* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *UI Frameworks Based on Application Server ABAP* ► *Further UI Technologies* ► *SAP Graphics* ► *Internet Graphics Service* ► *Administering the Internet Graphics Service (IGS)*.

3.2 Detailed Monitoring and Tools for Problem and Performance Analysis

SAP APO is technically based on SAP enhancement package 3 for SAP NetWeaver 7.0 (or SAP NetWeaver 7.4). For information about technical problem analysis (such as for database, operating system, or workload analysis), see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *Administrator's Guide* ► *Technical Operations for SAP Netweaver* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *System Administration and Maintenance Information* ► *Technical Operations for SAP Netweaver*.

This SAP APO Application Operations Guide only covers the differences and additional information specific to SAP APO.

3.2.1 SAP SCM Basis (Part of SCM Server)

For information, see *Application Operations Guide for Supply Chain Management 7.0 including SAP enhancement package 3* in SAP Service Marketplace at service.sap.com/instguides, under ► *SAP Business Suite Applications* ► *SAP SCM* ► *SAP SCM Server* ► *Using SAP Enhancement Package 3 for SAP SCM 7.0*.

3.2.2 SAP APO Analysis Tools

For information about internal and external monitoring, problem, and performance analysis tools, see the following Best Practices document:

Internal and External Consistency for SAP APO (3.x) / mySAP SCM (4.x) (service.sap.com/~sapidb/011000358700002214842003E)

For performance monitoring in SCM 7.x, see the documentation on the APO Performance Monitor on SAP Help Portal at help.sap.com/SCM703, under ► *SAP Supply Chain Management (SAP SCM)* ► *SAP Advanced Planning and Optimization (SAP APO)* ► *SAP APO Administration* ► *APO Performance Monitor*.

Depending on the business processes you are using in APO, you can find additional information in the following Best Practices documents:

- *Manage Demand Planning in SCM/APO* (service.sap.com/~sapidb/011000358700000955412003E)
- *Manage Supply Network Planning in SCM / APO* (service.sap.com/~sapidb/011000358700004718192003E)

- *Manage Production Planning in SAP APO (3.x) / mySAP SCM (4.x)* (service.sap.com/~sapidb/011000358700008416512001E)
- *Manage Global ATP in SAP APO (3.x) / mySAP SCM (4.x)* (service.sap.com/~sapidb/011000358700007382482002E)
- *Manage the Transportation Management Solution in SAP APO (3.x) / mySAP SCM (4.x)* (service.sap.com/~sapidb/011000358700007382622002E)

Trace and Log Files

Trace and log files are essential for analyzing problems.

For general information about traces, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *Administration of Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP* ► *Trace Functions* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Administration of Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP* ► *Trace Functions*.

For general information about application logs, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP Netweaver* ► *SAP NetWeaver by Key Capability* ► *Solution Life Cycle Management by Key Capability* ► *Application Log* or help.sap.com/nw74, under ► *SAP Netweaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Solution Life Cycle Management* ► *Application Log*.

Table 5: Log objects and subobjects to be used for SAP APO in SLG1

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
AHT	N/A	Action Handler and Production Tracking	X
N/A	ACTION_HANDLER_CORE	Core Action Handler	X
APO	N/A	Advanced Planning and Optimization	
N/A	ATP	APO Global ATP	
N/A	CHK	Consistency Check for CTM Master Data	
N/A	CTM	Capable-to-Match	
N/A	DOWN_UPLOAD	Download and Upload liveCache Data	
N/A	DP-RTO	Runtime Object	
N/A	EDQA	Event-Driven Quantity Assignment (EDQA)	
N/A	LCCHECK	RPM Matrices Test with liveCache Check	X
N/A	MD	Master Data	
N/A	MVM	Model/Version Management	

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
N/A	ND	Network Design	
N/A	PPDS	Production Planning and Detailed Scheduling	
N/A	PPM	Production Process Model	
N/A	PP_DTS	Production Planning and Detailed Scheduling	
N/A	RECOVERY	Recovery	
N/A	SCO	Sales Scheduling Agreement	
N/A	SDPP	Consistency Check for Planning Books	
N/A	SRC	Source of Supply Determination	
N/A	SWITCH	liveCache Change/Upgrade	
N/A	TPVS	Transportation Planning and Vehicule Scheduling	
N/A	UPGRADE	Errors that occurred during the upgrade	
N/A	VERSIONMERGE	SNP Version Merge	
APO_BAPI	N/A	CommunicationAPO— External Systems	
N/A	ATP_APS	ATP Service Object	
N/A	CLP_APS	APS Collaborative Planning	
N/A	DEL_REP	Deletion Report for Transaction Data	
N/A	FC_APS	PlannedIndReqmtsAPS	
N/A	KFIG_SEND_REP	Transfer Report for Key Figure Values	
N/A	LOC_APS	APS Location	
N/A	LPH_APS	Location Product Hierarchy APS	
N/A	LPSP_APS	APS Location Product Substitution Procedure	
N/A	LSP_APS	APS Location Determination Procedure	

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
N/A	MDAT_SEND_REP	Transfer Report for Master Data	
N/A	MO_APS	APS Manufacturing Order	
N/A	OR_APS	APS Order Request	
N/A	PB_APS	APS Planning Block	
N/A	PDS_APS	Production Data Structure APS	
N/A	PH_APS	Product Hierarchy APS	
N/A	PLOC_APS	APS Partner Location	
N/A	PL_EVENT	Planning Event	
N/A	PO_APS	APS Procurement Order	
N/A	PPDS_APS	PP/DS Planning Services	
N/A	PPMSP_APS	APS PPM Substitution Procedure	
N/A	PPM_APS	APS Production Process Model	
N/A	PPRD_APS	APS Partner Product	
N/A	PRD_APS	Product APS	
N/A	PRM_APS	APS Promotion	
N/A	PSP_APS	APS Production Substitution Schema	
N/A	QT_APS	APS Quota Arrangement	
N/A	REQ_APS	APS Request for Quotation	
N/A	RES_APS	APS Resources	
N/A	RULE_APS	APS Substitution Rule	
N/A	SEND_REP	Transfer Report for Transaction Data	
N/A	SO_APS	APS Sales Order	
N/A	ST_APS	APS Stock	
N/A	TRL_APS	APS Transportation Lane	
N/A	VS_APS	Vehicle Scheduling Services APS	

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
APO_FCS	N/A	Log for APODP Applications	
N/A	ADD_BOM	Add Bill of Materials Information	
N/A	BCSP	Consumption in the Background	
N/A	DPC	Demand Planning Characteristic Value Combination	
N/A	DPF	Demand Plan Selection	
N/A	DPP	Demand Plan	
N/A	DPS	Demand Planning Scenario	
N/A	DPT	Demand Planning Scenario Template	
N/A	DPV	Demand Plan Version	
N/A	DVOP	Demand View of Promotion	
N/A	EXT_RELEASE	Extended Release to Supply Network Planning	
N/A	FCS	Planning	
N/A	GFC	Generate Forecasting	
N/A	MD_CHECK	Subobject for Master Data Checker	
N/A	PAREA_LOAD	Load Data from InfoCube into Planning Area	
N/A	PA_CHANGE	Change Planning Area	
N/A	PSTRU	Planning Object Structure	
N/A	RELEASE	Release to Supply Network Planning	
N/A	RELEASE_CUBE_TO_OLTP	Direct Release from InfoProvider to ERP System	
N/A	RELEASE_CUBE_TO_SNP	Direct Release from InfoProvider to SNP	
N/A	REO	Forecasting Reorganisation	
N/A	SDP94	Interactive Planning	
N/A	SEASON	Seasonal Planning	

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
N/A	SO	Selection Organization	
N/A	TS	Time Series Management	
N/A	TS_BATCH	DP Mass Processing	
N/A	TS_PROP	Calculate Proportional Factors	
N/A	VERSION_COPY	Copy Planning Version	
N/A	XLS_UPLOAD	Excel Upload in Interactive Planning	
N/A	EVTY_DEL	Deletion of Event Types with Dependencies	
N/A	FCS_OPT	Classification and Forecast Optimization	
N/A	MASS_EVDEL	Mass Deletion of Events	
N/A	MASS_EVENT	Mass Creation of Events	
N/A	OUTLIER_DETECT	Detection of Outliers	
APO_SNP	N/A	APO: Supply Network Planning	
N/A	AGG	SNP Aggregation	
N/A	CAP	Capacity Leveling	
N/A	DEP	SNP Deployment	
N/A	DIS	SNP Disaggregation	
N/A	DISR	SNP Disaggregation After Resource Consumption	
N/A	DPLOPT	Deployment Optimization	
N/A	FRWK	SNP Characteristic Framework	
N/A	HEU	SNP Heuristic	
N/A	LLC	SNP Low-Level Code Determination	
N/A	OPT	SNP Optimization	
N/A	RELEASE	Release to Demand Planning	
N/A	RLCDEL	Delete Transaction Data	
N/A	SFT	SNP Safety Stock Planning	

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
N/A	SHLF	SNP Propagation of Shelf Life Dates	
N/A	SLM	Single-Level Supply and Demand Planning	
N/A	SPL	Prioritization of Deployment Stock Transfers	
N/A	TLB	TLB: Transport Load Builder	
APO_MD	N/A	APO: Master Data	
N/A	LO	Location	
N/A	STD_HIER_CREATE	Report: Create Standard Hierarchy	
N/A	VM	Version Management	
APOPCM	N/A	Production Campaign in APO	
N/A	APOPCMDPS	Production Campaign in DPS	
CIFSCM	N/A	Application Log Object for Core Interface	
N/A	DL	Delivery (Inbound)	
N/A	SH	Transport (Inbound)	
N/A	SHIPMENT	Transports	
INC	N/A	Product and Location Substitution	
MMP	N/A	Model Mix Planning and Sequencing	X
N/A	MMP_RUN	Model Mix Planning Run	X
N/A	SEQ_API	External Interface/ Production Connection	X
N/A	SEQ_EXPERT_CHANGES	Expert Functions for Sequencing	X
N/A	SEQ_INTERACTIVE	Interactive Sequencing	X
MSP	N/A	Maintenance and Service Planning	X
N/A	DMND	Maintenance Demand	X
MSP_CIF	N/A	Maintenance and Service Planning — CIF	X

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
MSP_MTL	N/A	Maintenance and Service Planning — Maintenance Task List	X
RCC	N/A	Remote Control and Communication	
RESOURCE	N/A	Resources	
RPM	N/A	Rapid Planning Matrix	X
N/A	FATAL_ERRORS	Fatal Errors	X
N/A	REORG	Reorganize Data Vectors	X
N/A	RPM_RUN	Messages During RPM Run	X
N/A	TIMELINES	Create RPM Time Series in Background	X
RPM_LCC	N/A	Test of RPM liveCache Routines	X
N/A	HEADER	General Data for a Test Run	X
N/A	MESSAGES	Individual Messages of a Test Run	X
RPM_LCC_TESTTOOL	N/A	RPM Test Tool	X
/SAPAPO/CMDS	N/A	Collaborative Management of Delivery Schedules (CMDS)	
N/A	CHECK	Consistency Check	
/SAPAPO/CONFR_CFGREL	N/A	Consistency of Configuration Relevance in Product Master	
N/A	CFGREL	Configuration-Relevant Product	
N/A	CLCH_RM	Remove Characteristic from CDP-Relevant Class	
N/A	MAT_CONS	Product Master Consistency	
/SAPAPO/CONFR_PCHECK	N/A	Material Variants Check	
/SAPAPO/MC01	N/A	Planning with CDP	
N/A	BLOCK	Block Planning	
N/A	CFGSYS	Setting Up Configuration Relevance	
N/A	MASTER	Master Data	

Log Object	Log Subobject	Object/Subobject Text	Only for SAP APO as part of SAP SCM
N/A	MAT	Product Master	
N/A	TRANS	Transactional Data	
/SAPAPO/MC013X40	N/A	CDP IBASE Conversion	
/SAPAPO/RTO	N/A	Production Data Engine	
N/A	DELETE	Delete Production Data Structure	
N/A	DP_GEN	Generate or Update Production Data Structures	
N/A	EXPLODE_PPDS	Explosion for PP/DS	
N/A	EXPLODE_SNP	Explosion for CTM/DP/SNP	
N/A	PPDS_GEN	Generate PP/DS Production Data Structure	
N/A	PPE_GEN	Generation of Production Data Structures from iPPE Data	
/SCMB/MD	N/A	SCM Basis Master Data	
N/A	SCU	Supply Chain Unit	

For more information about trace and log files, see also the Best Practices documents mentioned in this section.

3.2.3 SAP liveCache Technology Analysis Tools

To monitor and administer your SAP liveCache, you have several options or tools, which should be used in the following order of preference:

Table 6

Monitor	Detailed Description	Prerequisites
DBA Cockpit (DBACOCKPIT)	You can use the DBA Cockpit to monitor multiple SAP liveCaches on one or more servers.	N/A
SAP MaxDB Database Studio	The SAP MaxDB Database Studio (referred to as Database Studio) is a newly-developed tool for the administration of SAP MaxDB databases. It combines the functions of its predecessors Database Manager GUI (DBMGUI) and SQL Studio. As a	The Database Studio is a Java application and is developed with the Eclipse programming tool (Eclipse platform). You can transfer the databases that you manage with the Database Manager GUI to the Database Studio because they were stored in a XML file.

Monitor	Detailed Description	Prerequisites
	result, a single integrated tool is now available for the two previously separated application areas Administration and SQL-Client. The Database Studio also provides enhanced features with regard to its two predecessors (part of it is, for example, the loader that belongs to SAP MaxDB).	
Database Manager CLI (DBMCLI)	An SAP liveCache command line database client administration tool that can be executed from within SAP APO using transaction SM49. Database Manager CLI is a command line tool and is suited to both interactive operation and batch operation. It can be used on all operating systems supported by the database system and is part of the SAP MaxDB software package.	N/A

For more information about the database tools, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb under *Tools*.

You can download the installation package for the Database Studio from the SAP Software Download Center at service.sap.com/swdc under ► *Software Downloads* ► *Database Patches* ► *MaxDB and SAP DB* ► *MaxDB GUI Components/Tools* ►.

Table 7

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Display current LCA versions	/SAPAPO/OM04 or /SAPAPO/OM13 (see below)	As required or after SPs and upgrades	Check that correct versions are installed	Check which LCA build is installed on your SAP liveCache server	System monitoring team
Test program for SAP liveCache and LCA routines	/SAPAPO/OM03	As required or after SPs and upgrades	Correctly configured SAP liveCache and LCA routines should have output such as <code>liveCache test at LCA finished without errors</code>	Performs a simple check for LCA routines and SAP liveCache: useful to check the correct installation of SAP liveCache and/or LCA routines	System monitoring team and/or Basis Support

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Analyze SAP liveCache and LCA build	/SAPAPO/OM13	Daily / regularly		Shows LCA build, checks important SAP liveCache and LCA build, checks network speed/status (see below), shows SAP liveCache log files	System monitoring team
Display meaning of LCA routine return code	/SAPAPO/OM10	As required	Use to help analyze LCA routine messages or errors	Shows the meaning of return codes issues by LCA routines	Basis Support
SAP liveCache data viewer	/SAPAPO/OM16, <i>Display Plan Version</i> then choose <i>Calculate</i> in the output list	As required	Can be used to see the approximate size of planning versions in SAP liveCache	Shows the size of data by planning version (in KB)	Basis and Application Support
Check consistency of data between APO and SAP liveCache	/SAPAPO/OM17	Daily / weekly / as required	Check for inconsistencies and correct as necessary	For more information, see the Best Practice <i>Internal and External Consistency for SAP APO 3.x / mySAP SCM 4.x/5.0</i> (service.sap.com/~sapidb/011000358700002214842003E)	System monitoring team (Basis and Application Support)
Display SAP liveCache OMS and LCA routines performance analysis information	► <i>DBACOCKPIT</i> ► <i>Performance</i> ►	As required	N/A	Use transactions to help analyze SAP liveCache and LCA routine activity; show details of current activity; LCA routine runtime analysis statistics; Class container information; OMS data, size, age and	Basis Support

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
				versions; active transactions	
SAP liveCache and liveCache Applications test cockpit	/SAPAPO/OM14	Daily / weekly/ after upgrade or SP	N/A	The test cockpit contains many reports that are available for testing SAP liveCache and LCA routines. It can be used for performance comparisons/tests.	Basis Support
Evaluate performance and verify SAP liveCache and LCA routines	SE38 – /SAPAPO/OM_PERFORMANCE <execute> [Default 5 sec]	Weekly / after upgrade or SP	Check to see if performance of SAP liveCache and LCA routines differs greatly from previous runs	Tests SAP liveCache and LCA routines based on benchmark data. Results can be used to roughly compare performance and ensure SAP liveCache / LCA routines are working well	Performance monitoring team
Database Analyzer	You can call the Database Analyzer in several different ways: <ul style="list-style-type: none"> From the operating system level using command dbanalyze r In the Database Manager CLI In the CCMS (for SAP systems) 	Weekly / after upgrade or SP	Check to see if performance of SAP liveCache and LCA routines differs greatly from previous runs	The Database Analyzer program is a tool for analyzing the performance of database instances. For more information, see SAP Help Portal at help.sap.com/maxdb .	Performance monitoring team
Workload	ST03N Workload Analysis Tool, see below	Weekly / after upgrade or SP	Check to see if performance of SAP liveCache and LCA routines	N/A	Performance monitoring team

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
			differs greatly from previous runs		

Monitoring and Testing LCA and SAP liveCache Transactions

LCA traces grow very large, very quickly. Therefore, never run LCA traces unattended and always ensure that they are switched off immediately afterwards, otherwise disk-full situations might occur in a very short space of time.

Despite this, several transactions can be used (often in combination) to help assess what is occurring in SAP liveCache and the running LCA routines.

To monitor transactions currently running in SAP APO and SAP liveCache, you may need to use several transactions or tools:

- Transaction SM50 or SM66 (for all application servers):

Choose *Process overview*, look for DB procedure <procedure name>; match the PID here to the APPL PID seen in the DBACOCKPIT *Active or Runnable Tasks* screens to see which SAP APO work process is connected and working in SAP liveCache.

- Transaction DBACOCKPIT:

Choose ► *Performance* ► *Task Manager* ► *Active Tasks or Runnable Tasks* ► – shows currently active tasks in SAP liveCache, or runnable tasks that are waiting for either SAP liveCache processing time or a response from SAP APO/ABAP programs. See SAP Note 454653 for the meaning of each status in these screens.

The figure shows two SAP screenshots. The top screenshot is 'Process Overview' with a table of processes. The bottom screenshot is 'liveCache Console: Active Tasks' showing active tasks.

Process Overview Table:

No	Ty	PID	Status	Reason	Start	Err	Seq	CPU	Time	Report	Cl.	User	Action
0	DJA	14129	stopped	CPIC	Yes	7			1	SAPLIRFC	001	ALEUSER	
1	B60	28553	Running	Yes	2			17824		/SAPAPO/SA	001	SMHP005	DB procedure
2	B60	28543	waiting	Yes	5								
3	DJA	28629	Running	Yes	3			1		/SAPAPO/SA	001	ALEUSER	Sequential read
4	DJA	18495	Running	Yes	4			0		YCL_IM_APA	001	ALEUSER	Sequential read
5	DJA	28973	Running	Yes	4			179		/SAPAPO/SA	001	SAPEXT	DB procedure

liveCache Console: Active Tasks Table:

ID	UKT	UNIX	TYPE	APPL	Current	Timeout	Region	Waiting
		tid	pid		State	Priority	cnt	try
		User		DcomObjCalled		0	1092	0
T137	10	28	User	28973	DcomObjCalled	0	1092	0

Annotations:

- SM50 DB procedure = task running in SAP liveCache (points to row 5 in Process Overview)
- PID in SM50 is shown as APPL pid in LC10 console (points to row 5 in Process Overview and row 1 in Active Tasks)
- LC10 - Active Tasks DcomObjCalled = LCA routine running/called (points to DcomObjCalled in Active Tasks)

Figure 1

Other standard basis tools can also be used for monitoring SAP liveCache and LCA routines:

- Transaction SE30:

ABAP runtime analysis.

i Note

This may not distinguish between SAP APO database and SAP liveCache accesses

- Transaction `ST05`:
SQL Trace (may become extremely large – do not leave traces running unattended), see SAP Note [483854](#).

Network Monitoring Between SAP liveCache and Application Server

If the SAP APO system and the SAP liveCache are on physically separate servers, you should regularly (daily) check the network performance between the two servers using the NIPING tool. Poor network performance can lead to slow response times. These slow response times may suggest poor SAP liveCache performance, but in fact are due to the network. To check this, read SAP Note [458221](#) and consider using the NIPING functionality in transaction `/SAPAPO/OM13` on the *Network* tab page.

Workload Analysis Tool: Transaction ST03N

To help you determine the SAP liveCache elements of total response times with an SAP APO system, use transaction `ST03N`.

More information about this tool is available with the F1 help function and in the latest versions of the help documentation.

`ST03N` offers three views: *Service Engineer*, *Administrator*, and *Expert*. For history information about response times by days (for comparison purposes), you must be in Expert mode and have all necessary authorizations.

If you view the workload on a server, you can see the response times broken down by type (such as dialog, batch, or RFC), and under the column *DB Proc Time* you can see the SAP liveCache percentage or portion of total response times.

Transaction `ST03N` is especially useful for analyzing whether you have a bottleneck or SAP liveCache performance issue on your system. It can also be used to see how changes of LCA build and SAP liveCache parameters have affected your system.

Other features are available, such as transaction profiles, but the SAP liveCache processing time is separated out to help you monitor and analyze your system in more detail.

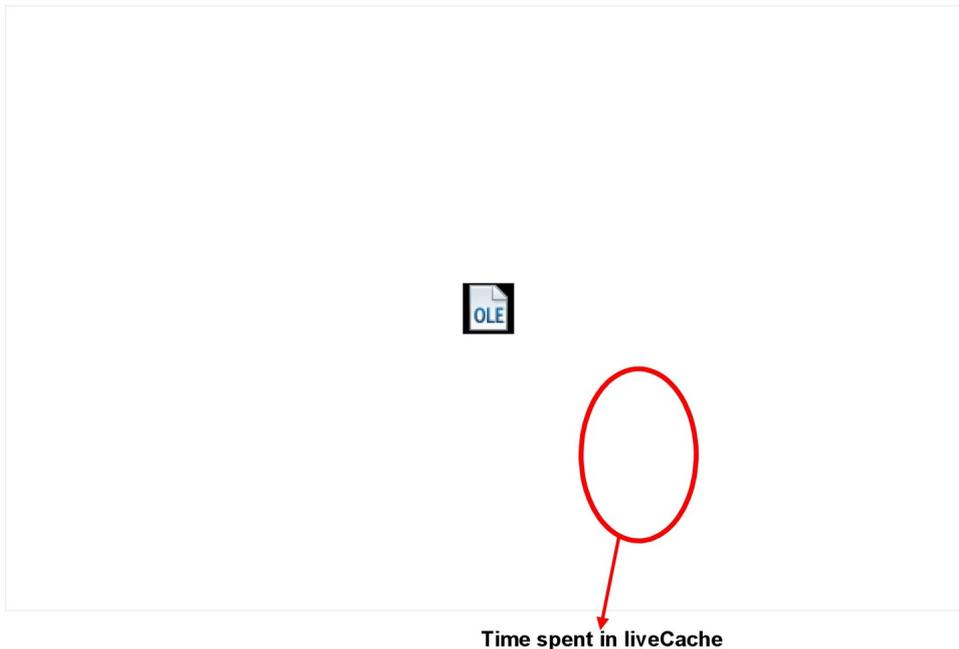


Figure 2

Trace and Log Files

Trace and log files are essential for analyzing problems.

Every SAP liveCache system message is stored in a log file called `knldiag`. You should check this file within the SAP APO System using transaction `DBACOCKPIT` (call transaction `DBACOCKPIT` then choose **► Diagnostics ► Messages ► Kernel Messages ►**). The `knldiag` file is limited in size (SAP liveCache parameter `kerneldiagsize`, default 800 KB). Once this size limit has been reached, the messages in that file are overwritten in a round robin. One exception to this are messages relating to starting the database in the operational state `ADMIN`.

i Note

The `knldiag` file is saved to `knldiag.old` during an SAP liveCache restart. For error analysis, save the `knldiag` files before they are overwritten on subsequent restarts of SAP liveCache. Depending on the installation, you can find the `knldiag` file at operating system level in the directory `/sapdb/data/wrk/<liveCacheName>`.

Another important log file is `knldiag.err`. All SAP liveCache errors are recorded in this file. You can view this file using transaction `DBACOCKPIT` (or at operating system level in the same directory as the `knldiag` file). This file is useful for SAP liveCache error analysis. After every restart of your SAP APO System, check the initialization log of SAP liveCache. You can do so in transaction `DBACOCKPIT` (call transaction `DBACOCKPIT` then choose **► Diagnostics ► Messages ► liveCache Operating ► Current ►**). Again, depending on your installation, you can find it at operating system level in the directory `/sapdb/<liveCacheName>/db` as file `lcinit.log`.

For serious error analysis, you may need to use a kernel or LCA trace. Only use these traces in coordination with SAP Active Global Support since they can heavily influence system performance.

For more information about switching on a kernel trace, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb.

To turn on/off LCA traces, use transaction `/SAPAPO/OM02`. To view LCA trace files, use transaction `/SAPAPO/OM01`.

i Note

Ensure that your file system has enough disk space available to store all log files. For more information, see the SAP liveCache Technology Installation Guide on the SAP Service Marketplace at service.sap.com/instguides > [SAP NetWeaver](#) > [SAP NetWeaver 7.0 \(or 7.4\)](#) > [Installation](#) > [Installation – Standalone Engines](#) > [Installation SAP liveCache Technology](#) and SAP Note [429215](#).

Table 8: Important Log and Trace Files

Content	File	Path
<ul style="list-style-type: none"> Database start and stop Specifications about the physical memory areas User processes System error messages 	knldiag	/sapdb/data/wrk/ <liveCacheName>
Same messages as in knldiag created before SAP liveCache restart	knldiag.old	/sapdb/data/wrk/ <liveCacheName>
All error messages and warnings of the SAP liveCache kernel since the installation of the SAP liveCache	knldiag.err	/sapdb/data/wrk/ <liveCacheName>
Starting, stopping, and initialization of the SAP liveCache	lcinit.log	/sapdb/data/wrk/ <liveCacheName>/db
All reactions of the database kernel to database statements	knltrace	/sapdb/data/wrk/ <liveCacheName>/db

For more information about trace and log files, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb under *Troubleshooting*.

3.2.4 SAP SCM Optimizer Analysis Tools

Once SAP SCM optimizers have been correctly installed and configured, they require little or no administration and maintenance. This section lists the most important transactions for optimizers with information about what they are used for.

Table 9

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
User list for optimizers	rcc_session	As required	N/A	Displays a user list for optimizers	Basis Support
Versions of optimizers	rcc_version	As required	N/A	Displays optimizer versions	System monitoring team
Running optimizer processes	rcc_session	As required	N/A	Display optimizer processes	Basis Support

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
RFC destinations for optimizers	SM59 / rcc_cust	During installation or after configuration changes	Test connection status to ensure all is OK	Defining and checking optimizer RFC destinations – can also be used to check if optimizer server is online	System monitoring team and Basis Support
Spool file of optimizer run	SM37	As required	Messages in spool file	Check also for application errors after the optimizer run using rccf_log (see section Trace and Log Files).	Application Support / Job scheduling team
Detailed performance information of optimizer runs	/SAPAPO/ PERFMON	As required	N/A	Display runtime details	Application Support

Depending on the business processes you are using, we recommend that you also look at the following documents:

- [Manage Supply Network Planning & CTM in SAP APO \(3.x\) and SAP SCM \(4.x, 5.x\)](https://service.sap.com/~sapidb/011000358700004718192003E) (service.sap.com/~sapidb/011000358700004718192003E)
- [Manage Production Planning in SAP APO \(3.x\) / mySAP SCM \(4.x, 5.0\)](https://service.sap.com/~sapidb/011000358700008416512001E) (service.sap.com/~sapidb/011000358700008416512001E)
- [Manage the Transportation Management Solution in SAP APO \(3.x\) / SAP SCM \(4.x, 5.x\)](https://service.sap.com/~sapidb/011000358700007382622002E) (service.sap.com/~sapidb/011000358700007382622002E)

Trace and Log Files

Trace and log files are essential for analyzing problems.

Table 10: Important Log and Trace Files

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Optimizer logs and trace files	rcc_log To display the trace files, choose ► Extras ► Display Log File ►	Check frequently – daily, weekly	Check for Errors	Display and analyze optimizer logs and trace files. These files are on the server in the directory log of the SAP gateway on	Basis Support

Monitoring Object	Monitor Transaction/Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
				<p>which the optimizers are installed (either your own server or application, SAP liveCache or database server):</p> <p>Directory (Windows version):</p> <pre>\usr\sap\ <SID>\G<GWNr> \log or \usr \sap\<<SID> \DVEBMGS <GWNr>\log</pre> <p><SID> = SystemID for example, APO</p> <p><GWNr> = SystemNr (=GatewayNr) for example, 00</p> <p>For more information, see SAP Note 391808.</p>	
Changing the detail level of trace files	/SAPAPO/OPT10	Only in coordination with SAP	As directed by SAP Support	As directed by SAP Support	Basis Support
Spool file of optimizer run	SM37	As required	Messages in spool file	Check also for application errors after the optimizer run using <code>rccf_log</code> (see above).	Application Support / Job scheduling team
Displaying log files (as an alternative to <code>rccf_log</code>)	/SAPAPO/ PERFMON	Check frequently – daily, weekly	Check for Errors	Display and analyze optimizer logs	Basis Support

Depending on the business processes you are using, we recommend that you look at the following documents on SAP Service Marketplace at service.sap.com:

- *Manage Supply Network Planning & CTM in SAP APO (3.x) and SAP SCM (4.x, 5.x)* (service.sap.com/~sapidb/011000358700004718192003E)
- *Manage Production Planning in SAP APO (3.x) / mySAP SCM (4.x, 5.0)* (service.sap.com/~sapidb/011000358700008416512001E)
- *Manage the Transportation Management Solution in SAP APO (3.x) / SAP SCM (4.x, 5.x)* (service.sap.com/~sapidb/011000358700007382622002E)

Distributed Statistical Records (DSR)

For each optimization run one DSR, containing technical data (for example runtime and memory consumption), can be written to the file system. For more information, see SAP note [1088212](#).

3.2.5 SAP Service Parts Management

i Note

This feature is **not** part of the SAP APO add-on and is currently only available in SAP APO as part of SAP SCM.

When you deploy the Service Parts Management scenario, you can check the application logs using the following transactions:

Table 11

Monitor	Detailed Description	Prerequisites
/SAPAPO/PE_LOG_DISP	Log display	N/A
SLG1	Application log display	N/A

Trace and Log Files

Trace and log files are essential for analyzing problems.

For more information about traces, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Administration of Application Server ABAP* ► *Monitoring and Administration Tools for Application Server ABAP* ► *Trace Functions* ►.

For general information about application logs, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Solution Life Cycle Management* ► *Application Log* ►.

The application log can be accessed using the above mentioned transactions.

Table 12: Log objects and subobjects to be used for SPP in /SAPAPO/PE_LOG_DISP (or SLG1)

Log Object	Log Subobject	Object/Subobject Text
/SAPAPO/PE	N/A	Planning Service Manager
N/A	PE_RUNTIME	Planning Service Manager *)
N/A	<SPP-related_subobjects>	Subobjects with name or text starting with / containing SPP

Log Object	Log Subobject	Object/Subobject Text
SCM_SPL_REP	N/A	Supply Chain Management: Service Parts Logistics Reporting
N/A	SCR_BASIS	Supply Chain Analytical Tools
N/A	SCR_BO_EQ	Error Queue for Business Objects
N/A	SRVF	Service Fill
N/A	SRVLOSS	UI for Service Loss Analysis

*) PE_RUNTIME is used for logging the most important errors during the execution of a Planning Service Manager (PSM) run.

3.3 Data Consistency

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

Table 13

Component/data store	Check tool/method	Detailed Description	Prerequisites
SAP SCM/SAP APO / OLTP system	N/A	See Best Practice document <i>Internal and External Consistency for SAP APO (3.x) / mySAP SCM (4.x/5.0)</i> (service.sap.com/~sapidb/011000358700002214842003E)	N/A
SAP liveCache / SAP DB	N/A	See Best Practice document <i>Internal and External Consistency for SAP APO (3.x) / mySAP SCM (4.x/5.0)</i> (service.sap.com/~sapidb/011000358700002214842003E)	N/A

For additional information see SAP Notes [572003](#) and [1723242](#).

4 Management of SAP APO

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 the underlying technology, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *Administrator's Guide* ► *Technical Operations for SAP NetWeaver* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *System Administration and Maintenance Information* ► *Technical Operations for SAP NetWeaver*.

4.1 Starting and Stopping

We recommend that you **start** the components in the following order; to **stop**, proceed in reverse order:

Table 14: Start and Stop Sequences and Tools

Software Component	Start and Stop Sequences and Tools		
	Sequence	Tool	Detailed Description
SCM Server (Only relevant for SAP as part of SCM)	1	STARTSAP/STOPSAP (Unix) SAPMMC (Windows)	N/A
SAP liveCache	2	LC10	See below
SAP ERP	4	STARTSAP/STOPSAP (Unix) SAPMMC (Windows)	N/A
SAP NetWeaver Business Intelligence (BI)	5	STARTSAP/STOPSAP (Unix) SAPMMC (Windows)	N/A
SAP NetWeaver Process Integration (PI)	6	STARTSAP/STOPSAP (Unix) SAPMMC (Windows)	N/A
CIF	7	Start: Reports RSTRFCQ3 and RSTRFCI3 Stop: Reports RSTRFCQ1 and RSTRFCI1	See below
SAP SCM Optimizer	8	Establish network connection to SCM system	No explicit start/stop, but only network connection to SCM/APO system necessary using transaction SM59. For more information, see the Installation Guide of the SAP SCM optimizer.

Software Component	Start and Stop Sequences and Tools		
	Sequence	Tool	Detailed Description
Internet Graphics Server (IGS)	8	You can start/stop the Windows IGS by using services. On your Windows desktop, choose ► Start ► Settings ► Control Panel ► Services ► (or) ► Administrative Tools ► Services ►. Scroll down and choose ► SAP IGS ► Start/Stop Service ►.	N/A

Even though SAP Net Weaver PI and SAP SCM optimizer can be started independently from all other components, we recommend that you start/stop the components in a certain sequence.

For more information about `STARTSAP/STOPSAP` and `SAPMMC`, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► [SAP NetWeaver](#) ► [Administrator's Guide](#) ► [Technical Operations for SAP NetWeaver](#) ► or help.sap.com/nw74, under ► [SAP NetWeaver](#) ► [System Administration Maintenance Information](#) ► [Technical Operations for SAP NetWeaver](#) ►.

Starting and Stopping SAP liveCache

SAP liveCache should be started and stopped using transaction `DBACOCKPIT`.

Alternatives: Call the `RSLVCSTART` and `RSLVCSTOP` reports from within SAP, or by using `SAPEVT` at OS level; call the `START_LIVECACHE` and `STOP_LIVECACHE` function modules from within SAP, or by using `STARTRFC` at OS level.

For more information about starting and stopping SAP liveCache, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb.

You can also start SAP liveCache with `DBMCLI` or `DBMGUI`, but this may cause a short dump, so start it with `DBACOCKPIT` if possible.

Starting and Stopping CIF

i Note

If you are using the SAP APO as add-on for SAP ERP deployment option, the term SAP SCM system means the SAP APO system.

To **start** the CIF queues of your SAP SCM system, use the following reports in SCM and all connected SAP Systems (ERP or R/3).

For outbound queues, use report `RSTRFCQ3`. Enter the following values:

- Parameter `QNAME`: **CF***
- Parameter `DEST`: **<Name of logical system>**
- Parameter `FORCE`: no entry required
- Parameter `NO_ACT`: no entry required

For inbound queues, use report `RSTRFCI3`. Enter the following values:

- Parameter `QNAME`: **CF***

- Parameter FORCE: no entry required
- Parameter MAXLUW: no entry required
- Parameter NO_ACT: no entry required

To determine whether you are using inbound or outbound queues, execute transaction CFC1 in the connected SAP systems (ERP or R/3) and transaction /SAPAPO/C2 in the SCM system.

If you are using outbound queues, you only need to start the outbound queues. If you are using inbound queues, you have to start inbound **and** outbound queues.

To **stop** the queues, use the following reports in the SAP SCM system and all connected SAP systems (ERP or R/3) according to the queue type you are using:

For outbound queues, use report RSTRFCQ1. Enter the following values:

- Parameter QNAME: **CF***
- Parameter DEST: **<Name of Logical System of receiving system>**
- Parameter FORCE: no entry required

For inbound queues, use report RSTRFCI1. For parameter QNAME, enter **CF***. No entry is required for parameter FORCE.

To determine whether you are using inbound or outbound queues, execute transaction CFC1 in the connected SAP systems (ERP or R/3) and transaction /SAPAPO/C2 in the SCM system.

If you are using outbound queues, you only need to stop the outbound queues. If you are using inbound queues, you have to stop inbound **and** outbound queues.

4.2 Software Configuration

This section explains which components or scenarios used by this application can be configured, and which tools are available for adjusting them.

Table 15: Component Configuration Tools

Component	Configuration Tool(s)	Detailed Description
SAP SCM / SAP APO not CIF-specific	ABAP TAs:	N/A
	SM59	Create RFC destination
	BD54	Maintain logical systems
	SMQR / SMQS	qRFC queue registration
	SMQ1 / SMQ2	qRFC queue monitors
	SBGRFCMON	bgRFC queue monitor
	SBGRFCCONF	bgRFC configuration
SAP SCM / SAP APO Core Interface (CIF)	ABAP TAs:	N/A
	/SAPAPO/C1	Business system group (BSG)

Component	Configuration Tool(s)	Detailed Description
	/SAPAPO/C2	Assignment of BSG to logical system and specification of the release, queue type, and error handling method of the connected SAP system
	/SAPAPO/C3	CIF application log
	/SAPAPO/C4	Special user settings during CIF transfer
	/SAPAPO/C91	Activation/deactivation of bgRFC in CIF
SAP ERP (CIF-specific)	ABAP TAs:	N/A
	NDV2	Specification of connected system type and release
	CFC1	Logical system – queue type assignment
	CFC2	Special user settings during CIF transfer
	CFC3	Filter size/select size adjustment
	CFG1	CIF application log
SCM Basis	not relevant	No technical configuration data (see other applications using SCM Basis, and the SCM Optimizer)
SCM Optimizer	ABAP TA SM59	No technical configuration data (all technical details are stored in standard ABAP Customizing, for example transactions SM59: RFC connectivity information)
	ABAP TA RCC_CUST (or RCC* respectively)	RCC_CUST: Defining and checking optimizer RFC destinations – can also be used to check if optimizer server is online) RCC_SESSION Active Session RCC_LOG Log Display RCC_PARAM Settings for Experts /SAPAPO/OPT10 Optimizer internal settings

Table 16: CIF-Specific Configuration Tools in ERP

Component	Configuration Tool(s)	Detailed Description
SAP ERP (CIF-specific)	ABAP TAs:	N/A
	NDV2	Specification of connected system type and release
	CFC1	Logical system – queue type assignment
	CFC2	Special user settings during CIF transfer
	CFC3	Filter size/select size adjustment
	CFG1	CIF application log

4.3 Administration Tools

SAP APO mainly uses standard administration tools based in SAP NetWeaver. For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *Administration of Application Server ABAP* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Administration of Application Server ABAP*.

For managing other software components, see below and the solution operation guides listed in [Related Information \[page 66\]](#).

4.3.1 SAP APO

For more information about internal and external consistency for SAP APO, see the following Best Practice document: *Internal and external consistency for SAP APO 3.x and mySAP SCM 4.x / 5.0* (service.sap.com/~sapidb/011000358700002214842003E).

For more information about performance monitoring in SCM 7.0 (including EHP2), see SAP Library for SAP Advanced Planning and Optimization on SAP Help Portal at help.sap.com/scm703, under ► *SAP Supply Chain Management (SAP SCM)* ► *SAP Advanced Planning and Optimization (SAP APO)* ► *SAP APO Administration* ► *APO Performance Monitor*.

Depending on the business processes you are using in SAP APO, you can find more information in the following Best Practice documents:

- *Manage Demand Planning in SAP APO (3.x) / SAP SCM (4.x, 5.x)* (service.sap.com/~sapidb/011000358700000955412003E)
- *Manage Supply Network Planning & CTM in SAP APO (3.x) and SAP SCM (4.x / 5.x)* (service.sap.com/~sapidb/011000358700004718192003E)
- *Manage Production Planning in SAP APO (3.x) / mySAP SCM (4.x, 5.0)* (service.sap.com/~sapidb/011000358700008416512001E)
- *Manage Global ATP in SAP APO (3.x) / SAP SCM (4.x / 5.0 / 5.1)* (service.sap.com/~sapidb/011000358700007382482002E)
- *Manage the Transportation Management Solution (TP/VS) in SAP APO (3.x) / SAP SCM (4.x/5.x)* (service.sap.com/~sapidb/011000358700007382622002E)

4.3.2 SAP liveCache Technology

General Information

For up-to-date information about important SAP liveCache parameters, see SAP Note [719652](https://support.sap.com/en/notes/719652). This note is updated frequently.

Changes in the hardware configuration of your SAP liveCache machine, such as additional RAM or CPUs, or changes in application data volumes or configuration may require different parameter settings. Check the above note regularly for updated parameter settings. If you experience performance issues, check your SAP liveCache settings against the latest recommendations in this note.

Some important parameters for SAP liveCache are the following:

- **MAXCPU**
The number of CPUs that can be used by SAP liveCache. For information about load balancing of SAP liveCache, see SAP Note [695721](#).
- **CACHE_SIZE**
The size of the data cache memory area used by SAP liveCache. The initial value for this parameter is defined during the sizing of your system. It may, however, require some tuning for normal operation, or in other situations, such as increasing the amount of RAM or data volume on your SAP liveCache server.
- **OMS_HEAP_LIMIT**
The maximum usable heap memory of SAP liveCache and LCA routines (private memory)

i Note

Changes to SAP liveCache parameters do not take effect until the SAP liveCache has been stopped and restarted, so schedule downtime for SAP liveCache if you want to adjust any parameters.

SAP liveCache Memory Areas

This section describes the main SAP liveCache memory areas. These areas are: LC management, heap memory, and net memory usage.

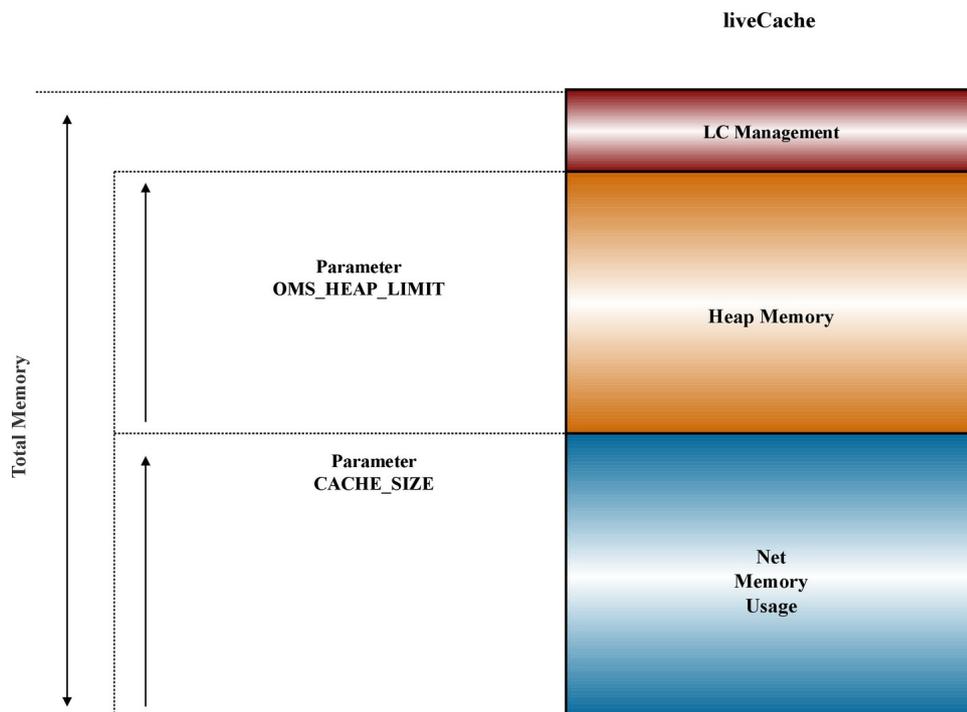


Figure 3

- **LC management** is needed for administrative purposes, such as starting, stopping, and backup of SAP liveCache.
- **Heap memory** refers to the memory allocation of the LCA routines in SAP liveCache (private liveCache memory regions).
 - Kernel parameter

OMS_HEAP_LIMIT

- **Net memory usage** of objects is where the actual data is stored in SAP liveCache.

- Kernel parameter

CACHE_SIZE

Parameter OMS_HEAP_LIMIT

SAP Note [337445](#) describes how to perform the calculation and to adjust the parameter OMS_HEAP_LIMIT.

Monitoring Heap Memory Usage

LC heap memory allocation can be monitored using the internal SAP liveCache table OMS_HEAP_STATISTICS.

To read this data, we recommend using transaction DBACOCKPIT or a database tool such as Database Studio.

To monitor heap memory usage in the SAP liveCache Assistant, call transaction LC10 and choose ► *liveCache: Monitoring* ► *Current Status* ► *Memory Areas* ► *Heap Usage* .

In this section, you can find the total heap area currently in use by SAP liveCache and LCA routines in the row *Maximum Heap Usage*. You can also use the *sum* button to calculate the accumulated heap values. Here the row *Size* is the memory that was allocated from the operating system. It reflects the *Maximum* segment size that was needed by LCA routines since start of SAP liveCache.

Note that the sum of *Size* and the value of *Maximum Heap Usage* always differ slightly. In row *Currently used* the current usage of memory by LCA routines and copied OMS objects is displayed. If the value of *Size* comes close to the value of OMS_HEAP_LIMIT, errors in LCA routines may occur due to insufficient memory.

When using DBMCLI, you can display heap memory by entering the command **show storage**.

For more information about using DBMCLI for displaying database information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb under *Database Manager CLI*.

Heap memory is graphically represented below and consists of the following main building blocks:

- **Total heap** (kilobytes) – total heap area currently in use by SAP liveCache and LCA routines
- **Reserved heap** (kilobytes) – “high water” mark, maximum amount of heap used since SAP liveCache start
- **Emergency heap** (kilobytes) – reserved memory

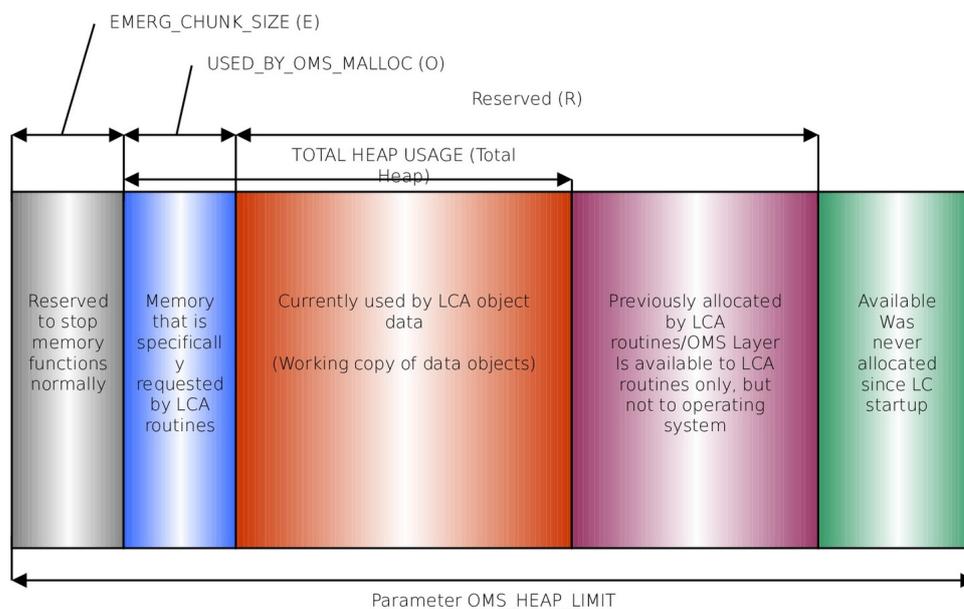


Figure 4

Garbage Collectors and Data Cache Filling Levels

When you monitor the data cache usage or filling level, you see the value in the *data cache usage percentage* column increase, then some time later decrease, considerably. This is because of the history data (OMS_HISTORY) that is used for consistent views within SAP liveCache. This history data is only required for open transactions or transactional simulations within SAP liveCache. When it is no longer required, the data is automatically deleted. The garbage collectors are responsible for deleting this obsolete history data.

For more information about garbage collectors, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb under *Database Manager CLI*.

For an example of data cache usage call transaction DBACOCKPIT, then choose ► *Memory Areas* ► *Caches* ►.

Cache Accesses				
	Accesses	Successful	Unsuccessful	Hit Rate
Entire Data Cache	67.142.399	66.347.998	794.401	98,82%
HistoryUndo	2.271.992	2.271.992	0	100,00%
OMS Data	43.889.246	43.137.918	751.328	98,29%
SQL Data	20.981.161	20.938.088	43.073	99,79%
Catalog Cache	6.659.262	5.022.678	1.636.591	75,42%
Sequence Cache	5.079	5.078	1	99,98%

Figure 5

For information about the operating system parameterization of SAP liveCache, see SAP Note [487972](https://support.sap.com/en/notes/487972).

Table 17: Monitoring SAP liveCache Memory Areas and Data Volumes

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Memory of SAP liveCache server (Windows only)	DBACOCKPIT, then ► <i>Diagnostics</i> ► <i>Problem Analysis</i> ► <i>Messages</i> ► <i>Kernel Messages</i> ►, then search for string <i>Total physical memory</i>	N/A	Add RAM to server, check <i>data cache/cache size</i> and <i>oms heap limit</i> parameters	To process LCA routines, SAP liveCache uses heap memory. You need to limit this heap memory using SAP liveCache parameter OMS_HEAP_SIZE. Check that the sum of OMS_HEAP_SIZE and data_cache_size is no larger than the main memory of machine.	System monitoring team

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Current data cache size	DBACOCKPIT, then ► Space Caches ►	At least daily	Check that there is enough memory allocated for data cache.	Size of data cache – actual size in MB/KB See also – DataCache filling levels and active parameters	System monitoring team
Data cache filling levels	DBACOCKPIT, then ► Space Caches ►	At least daily	If filling level consistently above 80%, check % of OMS history v OMS data. Consider resizing CacheMemorySize.	Amount of total DataCache used by real data – see line OMS_DATA size	System monitoring team
Data cache hit rate	DBACOCKPIT, then ► Space Caches ►	At least daily	Check that there is enough memory allocated for data cache.	This value should be >=98.8% If it is not, your SAP liveCache may be too small or incorrectly configured. After restarting SAP liveCache, you need at least 50 000 SAP liveCache data requests before a meaningful value is shown.	System monitoring team
Active SAP liveCache parameters OmsMaxHeapSize	DBACOCKPIT, then ► Administration Parameters ►	As required	Adjust as necessary.	Show currently active parameters. Parameter OMS_HEAP_LIMIT For parameter settings and calculation, see SAP Notes 337445 and 719652 .	Basis Support

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Heap memory usage	DBACOCKPIT, then ▶ Space ▶ OMS Heap Usage ▶	Often (especially when data volumes or system changes occur)	Sufficient memory must be available for heap areas, data cache, and the operating system of the SAP liveCache server – and correctly distributed between them.	The list header shows the value for the reserved memory marked with <i>Maximum Heap Usage</i> . This value shows the (private) memory dynamically requested by SAP liveCache, usually for use by LCA routines. It is not returned to the OS until SAP liveCache is stopped. So this value specifies the amount of RAM that is locked into the SAP liveCache/LCA routines process – it is reusable only by SAP liveCache, but it is not necessarily currently in use by SAP liveCache; it is the “high water” mark of heap usage.	System monitoring team
Status, size, and number of the data area Check filling level of SAP liveCache data area	DABCOCKPIT, then ▶ Space ▶ Caches ▶	Daily	If filling level is higher than 80%, consider adding a new data volume to avoid bottlenecks. The filling level may reduce itself automatically if	Check status and that there is enough data area configured. Check filling level of SAP liveCache data area carefully to prevent SAP liveCache	System monitoring team

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
			the garbage collector deletes history data.	problems (not only performance issues; some history data could also be deleted, leading to errors with transactions).	
Adding a data volume	DABCOCKPIT, then ▶ Space ▶ Data Area ▶	As necessary	Add data volume if filling level of data area is >=80%	Add data volume as required.	Basis Support
Check filling level of SAP liveCache log area	DABCOCKPIT, then ▶ Space ▶ Log Area ▶	Daily	If filling level is higher than 50%, consider activating automatic log backups.	Check filling level of SAP liveCache log area carefully to prevent SAP liveCache problems.	System monitoring team
Activating automatic log backup	See SAP Help Portal at help.sap.com/maxdb under Backing Up Database	If necessary	Activate automatic log backup if filling level of log area is >=50%	Activate automatic log backup if required.	Basis Support
SAP liveCache action log	/SAPAPO/OM11	Daily	Traffic lights: <ul style="list-style-type: none"> • Red = errors or failures • Yellow = warnings • Green = success Investigate errors and warnings.	The reported actions are: <ul style="list-style-type: none"> • Initializations (Calls of program / SAPAPO/ DELETE_IC _ANCHORS) • Deletion of old (obsolete) transactional simulations • Consistency checks and corrections with / SAPAPO/ OM17 	System monitoring team

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
				<ul style="list-style-type: none"> • Creation, change, and deletion of planning versions • Errors raised by transaction / SAPAPO/ OM13 • Errors raised by program / SAPAPO/ OM_REORG_DAILY (see section SAP APO [page 54]) • Activation and deletion of ATP time series • Changes in SAP liveCache Customizing 	

You can automate SAP liveCache database management in the CCMS. The central DBA Planning Calendar is one of the tools that you can use to automate actions. This calendar enables you to manage data and log backups as well as update optimizer statistics and check the database structure in integrated SAP environments from a central location.

For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb under *DBA Planning Calendar*.

4.3.3 SAP SCM Optimizer

General Information

Transport of configuration settings

All configuration settings of the SCM Optimizer are stored on the application server. So normal ABAP transports or customizing can be used for the transport of configuration settings.

Customer modifications

The different optimizers cannot be changed by the customer. If customer-specific changes have been approved by SAP, these are incorporated into the standard optimizer engines. Therefore, no special version management is required. For changes outside the SCM Optimizer (ABAP), the workbench can be used.

Conflicts between customer-specific changes (ABAP) and SAP updates can be solved using the workbench.

Table 18: Monitoring SAP SCM Optimizer

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
Optimizer server settings	rcc_cust	During installation, or for configuration changes to optimizer servers	N/A	Maintain master data for optimization servers.	Basis Support
RFC destinations for optimizers	SM59 / rcc_cust	During installation or after configuration changes	Test connection status to ensure all is OK	Defining and checking optimizer RFC destinations – can also be used to check if optimizer server is online	System monitoring team and Basis Support

See also [SAP SCM Optimizer Analysis Tools \[page 29\]](#).

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 APO consists of two parts, as follows:

- Backup and restore coverage for each component (see table below)
- 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, we have introduced a categorization scheme for system components that can be used to analyze the backup requirements of any system component and to easily determine an appropriate backup method for this component.

The following table lists the categories in general, the table after this one lists the components used by SAP APO.

Table 19

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
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) Webserver 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 Webserver
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 	Webserver
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 	N/A

Categories of System Components	Category Properties	Suggested Methods for Backup and Restore	Examples
		<ul style="list-style-type: none"> 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 system) Backup of software, configuration, log files 	Standalone SAP ERP
IX	Original application data, data exchange with other systems, data not managed by a DBMS	Data: <ul style="list-style-type: none"> Application-specific file system backup, data consistency with other systems must be considered Backup of software, configuration, log files 	N/A
X	Original application data, data exchange with other systems, data managed by a DBMS, not based on SAP WebAS	Data: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 ERP SAP CRM SAP SCM SAP BW

The following table lists the components used by SAP APO and how to backup them:

Table 20

Component	Data to Be Backed Up	Backup Method / Tool	Recommended Backup Frequency	Backup Sequence (if required)
SAP SCM Server (Category XI)	Original application data (where data is	Data:	Application data: SAP recommendation:	N/A

Component	Data to Be Backed Up	Backup Method / Tool	Recommended Backup Frequency	Backup Sequence (if required)
	exchanged with other systems; based on Web AS), application log data Software, configuration data, log data	<ul style="list-style-type: none"> 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 	<p>daily; redo log files periodically (for example, hourly)</p> <p>Log/configuration files on file system level: once a week full backup, daily incremental backup</p> <p>Software: SAP recommendation: after installation and before and after each software change such as patches and upgrades</p>	
SAP SCM Basis (Category XI)	Original application data (where data is exchanged with other systems; based on Web AS), application log data Software, configuration data, log data	<p>Data:</p> <ul style="list-style-type: none"> 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 	<p>Application data: SAP recommendation: daily; redo log files periodically (for example, hourly)</p> <p>Log/configuration files on file system level: once a week full backup, daily incremental backup</p> <p>Software: SAP recommendation: after installation and before and after each software change such as patches and upgrades</p>	N/A
SAP liveCache (Category X)	Original application data (where data is exchanged with other systems; managed by a DBMS, not based on Web AS), application log data Software, configuration data, log data	<p>Data:</p> <ul style="list-style-type: none"> - MaxDB database and log backup, data consistency with other systems must be considered - Backup of software, configuration, log files 	<p>Application data: SAP recommendation: daily; redo log files periodically (for example, hourly)</p> <p>Log/configuration files on file system level: once a week full backup, daily incremental backup</p> <p>Software: SAP recommendation: after</p>	N/A

Component	Data to Be Backed Up	Backup Method / Tool	Recommended Backup Frequency	Backup Sequence (if required)
			installation and before and after each software change such as patches and upgrades	
SAP SCM Optimizer (Category II)	(no persistent application data) Software, configuration data	Data:- Software, configuration: <ul style="list-style-type: none"> File system backup either full or incremental; registry backup on Windows platforms or <ul style="list-style-type: none"> No backup, new installation and configuration in case of a recovery 	Software, configuration: On a regular basis, at least after installation and software upgrades/ configuration changes	N/A
SAP Internet Graphics Service (IGS) (Category II)	-- (no persistent application data) Software, configuration data	Data: - Software, configuration: <ul style="list-style-type: none"> File system backup either full or incremental 	Software, configuration: On a regular basis, at least after installation and software upgrades / configuration changes	N/A
SAP ERP (Category XI)	Original application data, data exchange with other systems, based on SAP Web AS Software, configuration data, log data	Data: <ul style="list-style-type: none"> 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 	Application data: SAP recommendation: daily; redo log files periodically (for example hourly) Log/configuration files on file system level: once a week full backup, daily incremental backup Software: SAP recommendation: after installation and before and after each software change like patches and upgrades	N/A

Component	Data to Be Backed Up	Backup Method / Tool	Recommended Backup Frequency	Backup Sequence (if required)
SAP NetWeaver (Usage Type PI)	See SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703 , under SAP NetWeaver > Administrator's Guide > Technical Operations for SAP NetWeaver > Administration of SAP NetWeaver Systems > PI (Process Integration) > Management > Backup/Restore and Recovery or help.sap.com/nw74 , under SAP NetWeaver > System Administration and Maintenance Information > Technical Operations for SAP NetWeaver > Administration of PI (Process Integration) > Management > Backup/Restore and Recovery .			
SAP NetWeaver (Usage Type BI)	See SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703 , under SAP NetWeaver > Administrator's Guide > Technical Operations Manual for SAP NetWeaver > Administration of SAP NetWeaver Systems > BI (Business Intelligence) > Backup and Recovery (AS ABAP) or help.sap.com/nw74 , under SAP NetWeaver > SAP NetWeaver Library: Function-Oriented View > Solution Lifecycle Management > Backup and Recovery .			
SAP cFolders	See SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703 , under SAP NetWeaver > SAP NetWeaver by Key Capability > Application Platform by Key Capability > ABAP Technology > Administration of Application Server ABAP or help.sap.com/nw74 , under SAP NetWeaver > SAP NetWeaver Library: Function-Oriented View > Application Server > Application Server ABAP > Administration of Application Server ABAP .			

i Note

The backup of database and Web AS takes care of application data, configuration settings and log data. For more information, see Best Practice document [Backup and Restore for mySAP Business Suite on SAP Service Marketplace](#) at service.sap.com/bp-roadmap > [Operations Implementation](#).

Frequency of the Backup

SAP ERP

SAP ERP recommends that you back up your individual components in the SAP ERP 6.0 landscape regularly to ensure that you can restore and recover them if there is a system failure. For more information about backup and recovery for SAP ERP 6.0, see SAP Service Marketplace at service.sap.com/instguides > [SAP Business Suite Applications > SAP ERP > SAP ERP 6.0 > Operations](#) and also [SAP enhancement packages for SAP ERP 6.0](#).

Backup Procedures

SAP APO is based on SAP NetWeaver (Web Application Server ABAP) technology. All backup procedures for ABAP-based components also work for SAP APO. For more information about backup and recovery, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under [SAP NetWeaver > SAP NetWeaver by Key Capability > Application Platform by Key Capability > ABAP Technology > Administration of Application Server ABAP](#) or help.sap.com/nw74, under [SAP NetWeaver > SAP NetWeaver Library: Function-Oriented View > Application Server > Application Server ABAP > Administration of Application Server ABAP](#).

Online Backup

The data contained in the database can be backed up online; however, it is not possible to do the same for the runtime infrastructure. An online backup refers to the system landscape and not the databases that contain the business-critical application, or the infrastructure components.

i Note

If you perform a backup while the server is running, open files may not be backed up.

Backup and Recovery of SAP NetWeaver Components

For more information about backup and restore for the **usage type Application Server for ABAP**, **usage type Process Integration (PI)**, and the **usage type Business Intelligence (BI)**, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver ► Administrator's Guide ► Technical Operations for SAP NetWeaver ► Administration of SAP NetWeaver Systems* ► or help.sap.com/nw74, under ► *SAP NetWeaver ► System Administration and Maintenance Information ► Technical Operations for SAP NetWeaver ► Administration of SAP NetWeaver Systems* ►.

Backup and Recovery for SAP SCM Basis

For information, see *Application Operations Guide for Supply Chain Management 7.0 including SAP enhancement package 3* in SAP Service Marketplace at service.sap.com/instguides, under ► *SAP Business Suite Applications ► SAP SCM ► SAP SCM Server ► Using SAP Enhancement Package 3 for SAP SCM 7.0* ►.

Backup and Recovery for SAP SCM Server, SAP liveCache technology, and SAP SCM Optimizer

For specific information about backup/restoration and recovery of SAP Advanced Planning and Optimization as well as the SAP SCM Optimizer, see the Best Practice document *Backup and Restore for mySAP* on SAP Service Marketplace at ► service.sap.com/bp-roadmap ► *Operations Implementation ► Backup and Restore for mySAP Business Suite* ► and the Best Practice *Backup, Recovery and High Availability for SAP APO (3.x) / mySAP SCM (4.x)*.

For information about backup and recovery of SAP liveCache, see the *Checklist for Recovery* of SAP liveCache. The SAP SCM Optimizer does not contain any persistent application data. Therefore, no backup is required. Perform a new installation in case of a restore.

Backup and Recovery for SAP Internet Graphics Server (IGS):

The SAP IGS does not contain any persistent application data. Therefore, you only need to back up the IGS itself and the configuration files.

Depending on where the IGS is installed, you have the following options for backup and recovery:

1. Installation on Web AS

If you have installed the IGS on the Web AS, you have two options for backup and recovery, as follows:

1. Make a backup of all files of the IGS installation using operating system tools. You can recover the IGS by using your backup.
2. Make a backup of all files in the `conf` directory of the IGS installation. For a recovery, reinstall the IGS and copy all files from the `conf` directory back to the `conf` directory.

2. Standalone Installation on Microsoft Windows Server

If you have installed the IGS on a standalone Microsoft Windows server, you have two options for backup and recovery, as follows:

1. Make a backup of all files of the IGS installation. For a recovery, restore the IGS files and restart the IGS service in Microsoft Windows using command `igswdserv -i` in the `bin` directory of the installation directory.
2. Make a backup of all files in the `conf` directory of the IGS installation. For a recovery, reinstall the IGS and copy all files from the `conf` directory back to the `conf` directory.

4.5 Application Copy

Homogeneous System Copy

If you are using SAP APO (including SAP liveCache), you can find information about a **homogeneous** system copy (that is, without changing your operating system or database platform) in the *SAP System Landscape Copy for SAP NetWeaver and mySAP Solutions* document at [▶ service.sap.com/scm ▶ Technology ▶ SAP System Landscape Copy for SAP NetWeaver and mySAP Solutions ▶](#) and SAP Notes [210564](#) and [129352](#).

For a **homogeneous** system copy of SAP SCM Optimizer, the standard procedures of SAP NetWeaver apply.

For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at [help.sap.com/nw703](#), under [▶ SAP NetWeaver ▶ Administrator's Guide ▶ Technical Operations for SAP NetWeaver ▶](#) or [help.sap.com/nw74](#), under [▶ SAP NetWeaver ▶ System Administration and Maintenance Information ▶ Technical Operations for SAP NetWeaver ▶](#).

You should be aware that the *Multiple Output Planning* scenario uses characteristics-dependent planning (CDP). The master data for characteristic propagation is maintained in the production process model (PPM). After every client copy, system copy, or an upgrade, the characteristic propagation of the PPMs has to be generated again. For more information, see SAP Note [494839](#).

Heterogeneous System Copy

Heterogeneous system copies for SAP APO are currently supported on request and on a project basis. For more information, see SAP Note [543715](#). More details and forms are available under [service.sap.com/osdbmigration](#).

i Note

A client copy from one system into another system with a different operating system or database is not an alternative to a complete heterogeneous migration. For example, client copies do not ensure that all repository changes are taken over into the new system. Therefore, if you want to change your SAP APO database or application server platform, a heterogeneous system copy is the only procedure that ensures full data replication into the new system.

For more information about a heterogeneous system copy of SAP liveCache, see SAP Note [632357](#).

i Note

After a system copy, the connections between the systems as well as the system identifiers in the business configuration of the SAP NetWeaver PI system must be corrected to reflect the copies instead of the original systems.

4.6 Periodic Tasks

4.6.1 Scheduled Periodic Tasks

This section describes all automatable tasks required to run periodically 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 \[page 10\]](#) section above. 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.

In addition to the standard jobs mentioned in the *Technical Operations Manual for SAP NetWeaver* (in SAP Library under SAP NetWeaver), you must schedule APO-specific jobs in your APO 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.

4.6.1.1 SAP SCM Basis (Part of SCM Server)

For information, see *Application Operations Guide for Supply Chain Management 7.0 including SAP enhancement package 3* in SAP Service Marketplace at service.sap.com/instguides, under ► *SAP Business Suite Applications* ► *SAP SCM* ► *SAP SCM Server* ► *Using SAP Enhancement Package 3 for SAP SCM 7.0* ►.

4.6.1.2 SAP APO

Table 21: Standard/Housekeeping Jobs

Program Name / Task	Recommended Frequency	Detailed Description	Responsibility
Report BRCONNECT	Daily	Calculates BW-relevant optimizer statistics (for Oracle); see SAP Notes 129252 and 421795 .	Basis Job Scheduling
Report / SAPAPO/ CRES_CAPACITY_LEN G THEN	Weekly / Monthly	Extends time streams of resources in SAP liveCache.	Application Support / Job Scheduling Team
Jobs for reorganization	N/A	You can select various jobs for reorganization from the <i>SAP Easy Access</i> menu under ► <i>SAP Supply Chain Management</i> ► <i>Advanced Planning and Optimization</i> ► <i>APO Administration</i> ► <i>Reorganization</i> ► For more information about the particular jobs, see the Best Practice documents mentioned below.	

For more information about relevant jobs for SAP APO, see the Best Practice document *Internal and external consistency for SAP APO 3.x and mySAP SCM 4.x / 5.0* (service.sap.com/~sapidb/011000358700002214842003E)

Depending on the business processes you are using in SAP APO, you can find more information in the following Best Practice documents:

- *Manage Demand Planning in SAP APO (3.x) / SAP SCM (4.x, 5.x)* (service.sap.com/~sapidb/011000358700000955412003E)
- *Manage Supply Network Planning & CTM in SAP APO (3.x) and SAP SCM (4.x / 5.x)* (service.sap.com/~sapidb/011000358700004718192003E)
- *Manage Production Planning in SAP APO (3.x) / mySAP SCM (4.x, 5.0)* (service.sap.com/~sapidb/011000358700008416512001E)
- *Manage Global ATP in SAP APO (3.x) / SAP SCM (4.x / 5.0 / 5.1)*

(service.sap.com/~sapidb/011000358700007382482002E)

- *Manage the Transportation Management Solution (TP/VS) in SAP APO (3.x) / SAP SCM (4.x/5.x)*
(service.sap.com/~sapidb/011000358700007382622002E)

4.6.1.3 SAP liveCache Technology

Table 22: Standard/Housekeeping Jobs

Program Name / Task	Recommended Frequency	Detailed Description	Responsibility
Report / SAPAPO/ CRES_CAPACITY_ LENGTHEN	Weekly / Monthly	Extends time streams of resources in SAP liveCache.	Application Support / Job scheduling team
Report RSLVCBACKUP Transaction DB13C (Central DBA Planning calendar)	Daily	Starts a backup of SAP liveCache. See SAP Note 455154 for the report RSLVCBACKUP and SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/maxdb under <i>DBA Planning Calendar</i> .	Basis Job Scheduling
Report / SAPAPO/ OM_REORG_DAILY Transaction / SAPAPO/OM25	Daily	Deletes old transactional simulation data, and old Optimizer logs. For more information, see SAP Notes 139558 and 679118 . To check whether this job is scheduled, use transaction / SAPAPO/OM13 ▶ Checks ▶ tab.	Basis Job Scheduling
Report / SAPAPO/OM_ DELETE_OLD_ SIMSESS	Every 30 minutes	Reorganizes LCA data from old sim sessions in SAP liveCache; helps free up memory To check whether this job is scheduled, use transaction / SAPAPO/OM13 ▶ Checks ▶ tab.	Basis Job Scheduling
Report / SAPAPO/OM_ LCAALERTS	Daily	Provides Information for CCMS monitoring of SAP liveCache, see also SAP Note 683554). To check whether this job is scheduled, use transaction / SAPAPO/OM13 ▶ Checks ▶ tab page.	Basis Job Scheduling
Report / SAPAPO/ OM_LC_ LOGGING_LOG_DE L	Monthly or as required	Use to delete the SAP liveCache action log (see / SAPAPO/OM11 in section 4.1.2) up to a specific date.	Basis Job Scheduling

Program Name / Task	Recommended Frequency	Detailed Description	Responsibility
Transaction / SAPAPO/OM12			

4.6.1.4 SAP SCM Optimizer

Table 23: Standard/Housekeeping Jobs

Program Name / Task	Recommended Frequency	Detailed Description
Report / SAPAPO/OM_REORG_DAILY Transaction / SAPAPO/OM25	Daily	Deletes old LCA, transactional simulation data, and old optimizer logs. See SAP Notes 139558 and 679118 .

4.6.1.5 Make to Order for OEM

i Note

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

Table 24: Standard/Housekeeping Jobs

Program Name / Task	Recommended Frequency	Detailed Description
Transaction RPM_DATEVECTORS_REORG Report RPM_DATEVECTORS_REORG (Only relevant for SAP APO as part of SAP SCM)	Monthly	Deletes obsolete date vectors (pointers between requirements and resources) in SAP liveCache.
Report / SAPAPO/ CULL_DELETE_RTO	Monthly	Deletes obsolete PDS data in SAP liveCache.

4.6.2 Required Manual Periodic Tasks

This section describes all manual tasks required to run periodically to keep the application running smoothly over time. A manual task needs a person to execute it, in contrast to the scheduled tasks listed above, which can be automated using a task scheduler program. 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.

4.6.2.1 SAP SCM Basis (Part of SCM Server)

For information, see *Application Operations Guide for Supply Chain Management 7.0 including SAP enhancement package 3* in SAP Service Marketplace at service.sap.com/instguides, under ► *SAP Business Suite Applications* ► *SAP SCM* ► *SAP SCM Server* ► *Using SAP Enhancement Package 3 for SAP SCM 7.0* ►.

4.6.2.2 SAP APO

For more information about required manual tasks for SAP APO, see the following Best Practice document: *Internal and external consistency for SAP APO 3.x and mySAP SCM 4.x / 5.0* (service.sap.com/~sapidb/011000358700002214842003E).

Depending on the business processes you are using in SAP APO, you can find more information in the following Best Practice documents:

- *Manage Demand Planning in SAP APO (3.x) / SAP SCM (4.x, 5.x)* (service.sap.com/~sapidb/011000358700000955412003E)
- *Manage Supply Network Planning & CTM in SAP APO (3.x) and SAP SCM (4.x / 5.x)* (service.sap.com/~sapidb/011000358700004718192003E)
- *Manage Production Planning in SAP APO (3.x) / mySAP SCM (4.x, 5.0)* (service.sap.com/~sapidb/011000358700008416512001E)
- *Manage Global ATP in SAP APO (3.x) / SAP SCM (4.x / 5.0 / 5.1)* (service.sap.com/~sapidb/011000358700007382482002E)
- *Manage the Transportation Management Solution (TP/VS) in SAP APO (3.x) / SAP SCM (4.x/5.x)* (service.sap.com/~sapidb/011000358700007382622002E)

The following table lists the business processes above and their location in the Solution Manager Content:

Table 25

Process	Path in Solution Manager Content
<i>Demand Planning and Forecasting</i>	► <i>SAP SCM</i> ► <i>Scenarios</i> ► <i>Demand and Supply Planning Processes in SCM</i> ► <i>Business Processes</i> ► <i>Demand Planning and Forecasting</i> ►
<i>Multilevel Demand & Supply Match</i>	► <i>SAP SCM</i> ► <i>Scenarios</i> ► <i>Demand and Supply Planning Processes in SCM</i> ► <i>Business Processes</i> ► <i>Multilevel Demand & Supply Match</i> ►
<i>Backorder Processing</i>	► <i>Sales</i> ► <i>Business Processes</i> ► <i>Backorder Processing</i> ►

4.6.2.3 SAP liveCache Technology

For information about required manual periodical tasks in SAP liveCache, see section [SAP liveCache Technology Analysis Tools \[page 22\]](#), and the Best Practice document *Internal and External Consistency for SAP APO 3.x / mySAP SCM 4.x/5.0* (service.sap.com/~sapidb/011000358700002214842003E).

4.6.2.4 SAP SCM Optimizer

For information about required manual periodical tasks in SAP SCM Optimizer, see section [SAP SCM Optimizer Analysis Tools \[page 29\]](#).

For information about required manual periodical tasks in SAP liveCache, see section [SAP liveCache Technology Analysis Tools \[page 22\]](#).

4.7 Load Balancing

SAP APO uses the standard functionality of SAP NetWeaver for logon and load balancing. For more information about network load balancing, see SAP Service Marketplace at service.sap.com/ha and SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under [▶ SAP NetWeaver ▶ Administrator's Guide ▶ Technical Operations for SAP NetWeaver](#) or help.sap.com/nw74, under [▶ SAP NetWeaver ▶ System Administration and Maintenance Information ▶ Technical Operations for SAP NetWeaver](#).

4.8 User Management

SAP APO uses the standard functionality of SAP NetWeaver for user management, such as creating users with transaction `SU01` and creating and using roles with transaction `PF03`.

For more information about user management in SAP APO, see the SAP APO Security Guide on the SAP Service Marketplace at service.sap.com/securityguide [▶ SAP Business Suite Applications ▶ SAP SCM ▶ SAP Advanced Planning and Optimization ▶ SAP APO Security Guide](#).

For an overview of the information necessary for operating SAP NetWeaver Identity Management, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under [▶ SAP NetWeaver ▶ SAP NetWeaver by Key Capability ▶ Security ▶ Identity Management](#) or help.sap.com/nw74, under [▶ SAP NetWeaver ▶ SAP NetWeaver Library: Function-Oriented View ▶ Security ▶ Identity Management](#).

4.9 Printing

SAP APO uses the standard functionality of SAP NetWeaver for printing. For more information about printing, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under [▶ SAP NetWeaver ▶ SAP NetWeaver by Key Capability ▶ Application Platform by Key Capability ▶ ABAP Technology ▶ Administration of Application Server ABAP ▶ SAP Printing Guide \(BC-CCM-PRN\)](#) or help.sap.com/nw74, under [▶ SAP NetWeaver ▶ SAP NetWeaver Library: Function-Oriented View ▶ Application Server ▶ Application Server ABAP ▶ Administration of Application Server ABAP ▶ SAP Printing Guide \(BC-CCM-PRN\)](#).

5 High Availability

For high availability options of SAP APO, SAP liveCache technology, and SAP SCM Optimizer, you can find information in the Best Practice document *Backup, Recovery and High Availability for SAP APO (3.x) / mySAP SCM (4.x)* (service.sap.com/~sapidb/011000358700007382632002E).

For high availability of all other components of SCM, see the information on SAP Service Marketplace at service.sap.com/ha, or see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/703, under ► *SAP NetWeaver* ► *Administrator's Guide* ► *Technical Operations for SAP NetWeaver* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *System Administration and Maintenance Information* ► *Technical Operations for SAP NetWeaver*.

6 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.
- **Template Management**
Enables and secures the rollout of global templates, including localizations.
- **Quality Management and Test Management**
Reduces the time, cost, and risk associated with software changes.
- **Support Packages and SAP Notes Implementation**
Provides standardized software distribution and maintenance procedures.
- **Release and Upgrade Management**
Reduces the time, cost, and risk associated with upgrades.

6.1 Transport and Change Management

For transport and change management issues, the procedures of SAP NetWeaver apply. For more information, see the SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under **SAP NetWeaver > SAP NetWeaver by Key Capability > Application Platform by Key Capability > ABAP Technology > Administration of Application Server ABAP > Change and Transport System** or help.sap.com/nw74, under **SAP NetWeaver > SAP NetWeaver Library: Function-Oriented View > Application Server > Application Server ABAP > Administration of Application Server ABAP > Change and Transport System**.

SCM Optimizer

The ABAP parts of the optimizers can be transported via standard ABAP transport and change management. The optimizer-engines themselves need to be copied manually (file system tree *apoopt*).

6.2 Development Requests and Development Release Management

The standard procedures of SAP NetWeaver apply. For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *Administrator's Guide* ► *Technical Operations for SAP NetWeaver* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *System Administration and Maintenance Information* ► *Technical Operations for SAP NetWeaver*.

For more information about customer-specific development, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *Administration of Application Server ABAP* ► *Change and Transport System* ► *Change and Transport System - Overview* ► *Changing the SAP Standard (BC)* or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Administration of Application Server ABAP* ► *Change and Transport System* ► *Change and Transport System - Overview* ► *Changing the SAP Standard (BC)*.

6.3 Template Management

You can deploy Customizing settings by using Business Configuration Sets (BC sets).

For more information about BC sets, see BC Set Documentation.

6.4 Quality and Test Management

You can use the SAP NetWeaver Development Infrastructure to learn about the various possibilities to test your software changes.

6.5 Support Packages and Patch Implementation

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 does not change.

You can find detailed information about the availability of SP stacks for SAP APO on SAP Service Marketplace at service.sap.com/sp-stacks.

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 needed usages, or software components and required support packages. For more information, see the following:

- SAP Solution Manager documentation on SAP Help Portal at ► help.sap.com ► *Application Lifecycle Management* ► *SAP Solution Manager* ► *Maintenance Management* ► *Maintenance Optimizer*

- SAP Service Marketplace at 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 [▶ service.sap.com/patches](https://service.sap.com/patches) ▶ [SAP Support Packages in Detail](#) ▶

For more information about the tools necessary for implementing patches, see the SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ▶ [SAP NetWeaver](#) ▶ [SAP NetWeaver by Key Capability](#) ▶ [Application Platform by Key Capability](#) ▶ [ABAP Technology](#) ▶ [Administration of Application Server ABAP](#) ▶ or help.sap.com/nw74, under ▶ [SAP NetWeaver](#) ▶ [SAP NetWeaver Library: Function-Oriented View](#) ▶ [Application Server](#) ▶ [Application Server ABAP](#) ▶ [Administration of Application Server ABAP](#) ▶.

6.6 Release and Upgrade Management

For information about an upgrade, see the Upgrade Master Guide for SAP APO.

SAP delivers new functions through enhancement packages. With SAP enhancement packages, you can install and activate new functions driven by your business needs without performing a system upgrade. The enhancement package installation requires two different tools – SAP Solution Manager Maintenance Optimizer and the Enhancement Package Installation tool.

As before, corrections are available in Support Packages. SAP provides Support Packages on a regular basis during the defined maintenance period. In parallel, SAP provides equivalent Support Packages for enhancement packages. You must install parts of the enhancement packages in combination with the latest available Support Packages. This approach allows reducing installation, modification adjustment, and testing effort. Using this strategy, SAP enhancement packages can be installed as a normal maintenance activity together with Support Packages.

For more information about the release and upgrade management of SAP NetWeaver see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ▶ [SAP NetWeaver](#) ▶ [Administrator's Guide](#) ▶ [Technical Operations Manual for SAP NetWeaver](#) ▶ [Administration of SAP NetWeaver Systems](#) ▶ [PI \(Process Integration\)](#) ▶ [Software Logistics](#) ▶ [Release and Upgrade Management](#) ▶ or help.sap.com/nw74, under ▶ [SAP NetWeaver](#) ▶ [System Administration and Maintenance Information](#) ▶ [Technical Operations Manual for SAP NetWeaver](#) ▶ [Administration of PI \(Process Integration\)](#) ▶ [Software Logistics](#) ▶ [Release and Upgrade Management](#) ▶.

For all other components, see the application operation guides listed in section [Related Information](#) [page 66].

Table 26: Component Release

Software Component	Tools for Displaying the Current Version
SCM APO or SAP SCM	Menu ▶ System ▶ Status ▶
SAP liveCache	Transaction /SAPAPO/OM13
SAP ERP	Menu ▶ System ▶ Status ▶
CIF (PlugIn)	Menu ▶ System ▶ Status ▶
SAP SCM Optimizer	Transaction rcc_version
XI	See below
Internet Graphics Service (IGS)	See below

Software Component	Tools for Displaying the Current Version
SAP BI	Menu ► <i>System</i> ► <i>Status</i> ▾

Displaying the Support Package Version of IGS

You can display the Support Package version of the IGS in the following two ways:

- Using the Web Interface

http://<hostname>:<port>

<hostname> = The name of the machine where the IGS is installed, for example P12345

<port> = The port of the http listener. You can find this in the IGS configuration file.

- Using CCMS (see section [CCMS Monitoring Installation and Setup \[page 11\]](#))

For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under ► *SAP NetWeaver* ► *SAP NetWeaver by Key Capability* ► *Application Platform by Key Capability* ► *ABAP Technology* ► *UI Technologies in ABAP* ► *Frontend Services (BC-FES)* ► *SAP Graphics (BC-FES-GRA)* ► *Internet Graphics Service* ► *Administering the IGS* ▾ or help.sap.com/nw74, under ► *SAP NetWeaver* ► *SAP NetWeaver Library: Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *UI Frameworks Based on Application Server ABAP* ► *Further UI Technologies* ► *SAP Graphics (BC-FES-GRA)* ► *Internet Graphics Service* ► *Administering the IGS* ▾.

Displaying the Support Package Version of XI Content

For information, see *Application Operations Guide for Supply Chain Management 7.0 including SAP enhancement package 3* in SAP Service Marketplace at service.sap.com/instguides, under ► *SAP Business Suite Applications* ► *SAP SCM* ► *SAP SCM Server* ► *Using SAP Enhancement Package 3 for SAP SCM 7.0* ▾.

SAP Release and Upgrade Plans

For information about SAP's release and upgrade plans, see SAP Service Marketplace at ► service.sap.com/releasesstrategy ► *SAP Business Suite* ► *SAP Supply Chain Management* ▾.

For information about the maintenance strategy and further services for SAP SCM, see service.sap.com/maintenance.

You can access the upgrade guide at ► service.sap.com/instguides ► *SAP Business Suite Applications* ► *SAP SCM* ► *SAP APO* ► *Using SAP enhancement Package 3 for SAP APO 7.0* ▾.

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 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.

The following topics are covered:

- Remote Support
- Component hierarchy relevant for this application

SAP liveCache Assistant (transaction `LC10`) is an administration and support tool that is accessible in the Web browser as well as in the SAP GUI. A read-only support role is available for using *SAP liveCache Assistant*. For information about how to set up the role, see SAP Note [452745](#).

For more information about *SAP liveCache Assistant*, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw703, under [▶ SAP NetWeaver ▶ SAP NetWeaver by Key Capability ▶ Database Administration ▶ Database Administration for SAP MaxDB ▶ Database Administration in CCMS: SAP MaxDB ▶ Database Administration in CCMS: SAP liveCache Technology ▶ liveCache Assistant](#) or help.sap.com/nw74, under [▶ SAP NetWeaver ▶ SAP NetWeaver Library: Function-Oriented View ▶ Database Administration ▶ Database Administration for SAP MaxDB ▶ Database Administration in CCMS: SAP MaxDB ▶ Database Administration in CCMS: SAP liveCache Technology ▶ liveCache Assistant](#).

7.1 Remote Support Setup

SAP Support needs to be able to work remotely for highest efficiency and availability. Therefore, all required support tools must be remotely accessible for SAP support. For SAP APO, the standard SAP procedures for setting up remote support apply.

For information about Remote Support Setup, see SAP Service Marketplace at service.sap.com/access-support.

For the SAP SCM Optimizer the standard ERP 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 used operating system).

7.2 Problem Message Handover

For information about processing of internal support messages and forwarding them to SAP, see SAP Help Portal at help.sap.com [▶ Application Lifecycle Management ▶ SAP Solution Manager ▶ Service Desk](#).

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

Table 27

Component	Component Name
SCM	Supply Chain Management
+ SCM-CA	SCM Cross Applications
+ SCM-APO	Advanced Planning and Optimization
+ SCM-APO-OPT	SCM Optimizer
+ SCM-BAS	SCM Basis

The SCM Focus Group offers technical consulting services such as Administration, Monitoring, and Backup and Recovery concepts for your APO system.

You can find a detailed list of the services, as well as all contact persons, in the SCM Focus Group fact sheet on SAP Service Marketplace under ► service.sap.com/scm ► *SAP SCM Technology* ► *Technical Consulting (in the Related Topics box)* ► *SCM Technology Focus Group* ↗.

For an overview of all services provided by SAP APO, see SAP Service Marketplace at service.sap.com/safeguarding.

A Appendix

A.1 Appendix

A.1.1 Related Guides

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

A.1.2 Related Information

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

Table 28

Content	Quick Link on SAP Service Marketplace <a href="https://service.sap.com/<quick link>">service.sap.com/<quick link>
Master Guide, Installation Guide and Upgrade Guide	/instguides
Related SAP Notes	/notes
Released Platforms	/platforms
Network Security	/securityguide /network
Technical Infrastructure	/installNW70
SAP Solution Manager	/solutionmanager

The following table contains links to the documentation referenced in this Application Operations Guide.

Table 29

Guide	Path
Technical Operations Manual for SAP NetWeaver	help.sap.com/nw703 under SAP NetWeaver > <i>Administrator's Guide</i> > <i>Technical Operations for SAP NetWeaver</i> or help.sap.com/nw74 under SAP NetWeaver > <i>System Administration and Maintenance Information</i> > <i>Technical Operations for SAP NetWeaver</i>
Application Operations Guide for SAP ERP	service.sap.com/instguides > <i>SAP Business Suite Applications</i> > <i>SAP ERP</i> > <i>SAP ERP 6.0</i> > <i>Operations</i>

A.1.3 External Messages

For information about external messages, see section [External Messages](#) in the Application Operations Guide for SAP Supply Chain Management (SAP SCM).

B Reference

B.1 The Main SAP Documentation Types

The following is an overview of the **most important** documentation types that you need in the various phases in the life cycle of SAP software.

Cross-Phase Documentation

SAPterm is SAP's terminology database. It contains SAP-specific vocabulary in over 30 languages, as well as many glossary entries in English and German.

- Target group:
 - Relevant for all target groups
- Current version:
 - On SAP Help Portal at help.sap.com > *Glossary* >
 - In the SAP system in transaction `STERM`

SAP Library is a collection of documentation for SAP software covering functions and processes.

- Target group:
 - Consultants
 - System administrators
 - Project teams for implementations or upgrades
- Current version:
 - On SAP Help Portal at help.sap.com (also available as documentation DVD)

The **security guide** describes the settings for a medium security level and offers suggestions for raising security levels. A collective security guide is available for SAP NetWeaver. This document contains general guidelines and suggestions. SAP applications have a security guide of their own.

- Target group:
 - System administrators
 - Technology consultants
 - Solution consultants
- Current version:
 - On SAP Service Marketplace at service.sap.com/securityguide

Implementation

The **master guide** is the starting point for implementing an SAP solution. It lists the required installable units for each business or IT scenario. It provides scenario-specific descriptions of preparation, execution, and follow-up of an implementation. It also provides references to other documents, such as installation guides, the technical infrastructure guide and SAP Notes.

- Target group:
 - Technology consultants

- Project teams for implementations
- Current version:
 - On SAP Service Marketplace at service.sap.com/instguides

The **installation guide** describes the technical implementation of an installable unit, taking into account the combinations of operating systems and databases. It does not describe any business-related configuration.

- Target group:
 - Technology consultants
 - Project teams for implementations
- Current version:
 - On SAP Service Marketplace at service.sap.com/instguides

Configuration Documentation in SAP Solution Manager – SAP Solution Manager is a life-cycle platform. One of its main functions is the configuration of business scenarios, business processes, and implementable steps. It contains Customizing activities, transactions, and so on, as well as documentation.

- Target group:
 - Technology consultants
 - Solution consultants
 - Project teams for implementations
- Current version:
 - In SAP Solution Manager

The **Implementation Guide (IMG)** is a tool for configuring (Customizing) a single SAP system. The Customizing activities and their documentation are structured from a functional perspective. (In order to configure a whole system landscape from a process-oriented perspective, SAP Solution Manager, which refers to the relevant Customizing activities in the individual SAP systems, is used.)

- Target group:
 - Solution consultants
 - Project teams for implementations or upgrades
- Current version:
 - In the SAP menu of the SAP system under ► *Tools* ► *Customizing* ► *IMG* ►

Production Operation

The **technical operations manual** is the starting point for operating a system that runs on SAP NetWeaver, and precedes the application operations guides of SAP Business Suite. The manual refers users to the tools and documentation that are needed to carry out various tasks, such as monitoring, backup/restore, master data maintenance, transports, and tests.

- Target group:
 - System administrators
- Current version:
 - On SAP Service Marketplace at service.sap.com/instguides

The **application operations guide** is used for operating an SAP application once all tasks in the technical operations manual have been completed. It refers users to the tools and documentation that are needed to carry out the various operations-related tasks.

- Target group:
 - System administrators

- Technology consultants
- Solution consultants
- Current version:
 - On SAP Service Marketplace at service.sap.com/instguides

Upgrade

The **upgrade master guide** is the starting point for upgrading the business scenarios and processes of an SAP solution. It provides scenario-specific descriptions of preparation, execution, and follow-up of an upgrade. It also refers to other documents, such as upgrade guides and SAP Notes.

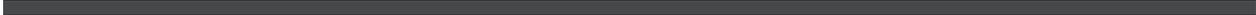
- Target group:
 - Technology consultants
 - Project teams for upgrades
- Current version:
 - On SAP Service Marketplace at service.sap.com/instguides

The **upgrade guide** describes the technical upgrade of an installable unit, taking into account the combinations of operating systems and databases. It does not describe any business-related configuration.

- Target group:
 - Technology consultants
 - Project teams for upgrades
- Current version:
 - On SAP Service Marketplace at service.sap.com/instguides

Release notes are documents that contain short descriptions of new features in a particular release or changes to existing features since the previous release. Release notes about ABAP developments are the technical prerequisite for generating delta and upgrade Customizing in the Implementation Guide (IMG).

- Target group:
 - Consultants
 - Project teams for upgrades
- Current version:
 - On SAP Service Marketplace at service.sap.com/releasenotes
 - In the SAP menu of the SAP system under ► *Help* ► *Release Notes* ▾ (only ABAP developments)



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