Application Operations Guide
Document version: 1.1 – 2015-11-12

CUSTOMER

SAP™ Transportation Management
Release 9.3

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
Example	• 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`	• 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 at service.sap.com/instguides.

The following table provides an overview of the most important document changes.

Table 2

Version	Date	Description
1.0	2015-05-28	Initial Version
1.1	2015-11-12	Formal revision for SP02

Content

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 applications at peak performance 24 hours a day has never been more vital for your business success than now.

This guide provides a starting point for managing your SAP applications and maintaining and running them optimally. It contains specific information for various tasks and lists the tools that you can use to implement them. This guide also provides references to the documentation required for these tasks, so you need other guides such as the Master Guide, Technical Infrastructure Guide, and SAP Library.

> **Note**
>
> For more information about the various tasks that you can carry out and tools that you can use for SAP Event Management, see the Application Operations Guide for SAP Event Management on SAP Service Marketplace at service.sap.com/instguides.

1.1 Global Definitions

SAP Application:

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

Business Scenario:

From a microeconomic perspective, a business scenario is a cycle that 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 (for example, SAP ERP or SAP SCM) for each cycle and possibly other third-party systems. A business scenario is a unit that 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 separately produced, delivered, installed, and maintained.

1.2 Important SAP Notes

Recommendation

Check regularly for updates to the Application Operations Guide.

Table 3: Important SAP Notes — Installation/Upgrade Notes

SAP Note Number	Title	Comment
1678998	Release Strategy for the ABAP Add-On SAPTM	None
2159217	Release Restrictions of SAP Transportation Management 9.3	None
2127323	Installation/Delta Upgrade note for TM 9.3 on NETWEAVER 740	None
1539802	SAPTM: Overview note	None
2127348	Implementing the SCM Optimizer Version 12.0	None
2118104	Installation/Upgrade SCEMSRV 920	None
1224284	Enterprise Services, Installing and Accessing the SOA Documentation. This SAP Note lists the business-related grouping of Enterprise Services.	None
1515223	SAP NetWeaver Process Integration: Release Recommendation. This SAP Note sets out our recommendation on which release of SAP NetWeaver PI you should use.	None
1529649	Factory Calendar Expires 2010	None
1388258	Version Interoperability within the SAP Business Suite	None
1573180	AEX Enablement for SAP Business Suite	None
1846034	SAP Visual Business 2.1: Information about patches	None
1738013	TM: Integration with ERP Enhancement	None
1747234	Trigger Processing and Usage of the Report /SCMTMS/ PROCESS_TRIGGER_BGD	None

Table 4: Important SAP Notes — Information/Consulting Notes

SAP Note Number	Title	Comment
900000	NetWeaver Business Client – FAQ	None

Table 5: Important SAP Notes — Troubleshooting Notes

SAP Note Number	Title	Comment
423184	ALE: Problems with Logical System Names	None
1080668	Problems with alert subscription	None
1634677	TM: Checking Customizing settings in ERP	None

2 Technical System Landscape

2.1 Scenario/Component Matrix

The following table lists the components that are available for each scenario:

Table 6

Scenario	SAP TM	SAP ERP	SAP EM	SAP Optimizer	SAP VB	PI	T&L Collaboration Portal
International Inbound Logistics (IIL)	X	X	X	X	O	X	Not applicable
Domestic Outbound Transportation (DOT)	X	X	X	X	O	X	O
LCL Ocean Freight (OF)	X	X	Not applicable	X	O	X	Not applicable
Airfreight	X	X	Not applicable	X	O	X	Not applicable
Intermodal Rail Freight	X	X	X	X	O	X	Not applicable
Courier Express Parcel	X	X	X	X	O	X	Not applicable

Scenario component key: X = mandatory, O = optional, Not applicable = not part of the business process

For more information about the components necessary for the business processes for SAP Transportation Management 9.3 (SAP TM 9.3), see the Master Guide for SAP Transportation Management on SAP Service Marketplace at service.sap.com/instguides > *SAP Business Suite Applications* > *SAP TM* > *Using SAP TM 9.3*.

2.1.1 SAP NetWeaver 7.4

SAP NetWeaver 7.4 is the integration and application platform for SAP TM 9.3. The following SAP NetWeaver components are part of the infrastructure:

- SAP Web Application Server (ABAP) 7.4
- SAP Web Application Server (Java) 7.4 (for printing purposes)

- SAP NetWeaver Exchange Infrastructure (XI)
- SAP NetWeaver BI (Business Intelligence) 7.4
- SAP NetWeaver Business Client 4.0
- SAP Gateway
- SAP UI5 Client Runtime

2.1.2 SAP SCM Optimizer

For information about installing and setting up SAP SCM Optimizer, see the Installation Guide for Windows or Linux. The guides are located on SAP Service Marketplace at service.sap.com/instguides > *SAP Business Suite Applications* > *SAP Transportation Management* > *SAP SCM Optimizer*.

2.1.3 SAP Internet Graphics Service

The Internet Graphics Service (IGS) is part of SAP NetWeaver and can be used in SAP TM 9.3 to support the display of graphics and to integrate GIS data.

2.2 Related Documentation

The following table lists locations in which you can find more information about the technical system landscape.

Table 7

Topic	Guide/Tool	Quick Link on SAP Service Marketplace
Application-specific and industry-specific components such as SAP Financials and SAP Retail	Master Guide	service.sap.com/instguides
Technology components such as SAP Web Application Server	Master Guide	service.sap.com/instguides
SAP SCM Optimizer	Installation Guide	service.sap.com/instguides
Sizing	Quick Sizer Tool	service.sap.com/sizing
Technical configuration	Technical Infrastructure Guide	service.sap.com/installNW70
Scalability	Technical Infrastructure Guide	service.sap.com/installNW70
High Availability	Technical Infrastructure Guide	service.sap.com/installNW70

Topic	Guide/Tool	Quick Link on SAP Service Marketplace
Security	Technical Infrastructure Guide	service.sap.com/installNW70 service.sap.com/security
SAP Event Management	Application Operations Guide	service.sap.com/instguides
SAP Transport Tendering mobile app	Administrator's Guide	service.sap.com/instguides
SAP Transport Notification and Status mobile app	Administrator's Guide	service.sap.com/instguides
T&L Collaboration Portal	Administrator's Guide	service.sap.com/instguides
SAP NetWeaver Gateway	Application Operations Guide	service.sap.com/instguides > *SAP NetWeaver* > *SAP NetWeaver Gateway*

3 Monitoring of SAP Transportation Management

Within the management of SAP Technology, monitoring is an essential task. A section has therefore been devoted solely to this subject.

For more information about the underlying technology, see the SAP Library for SAP NetWeaver 7.4 at help.sap.com/nw. In SAP Library, choose *SAP NetWeaver Library: Function-Oriented View* > *Application Server* > *Application Server ABAP* > *Monitoring and Administration Tools for Application Server ABAP* or *SAP NetWeaver Library: Function-Oriented View* > *Application Server* > *Application Server Java* > *Administering Application Server Java* > *Monitoring*.

3.1 Alert Monitoring with CCMS

Proactive, automated monitoring is the basis for ensuring reliable operations for your SAP system environment. We provide you with the infrastructure and recommendations needed to set up your alert monitoring to recognize critical situations for SAP TM 9.3 as quickly as possible. SAP TM 9.3 uses the Computer Center Management System (CCMS) for alert monitoring.

3.1.1 CCMS Monitoring Installation and Setup

The Computer Center Management System (CCMS) provides a range of monitors for SAP environments and their components. These monitors are essential for understanding and evaluating the behavior of the SAP processing environment. In the case of poor performance values, the monitors provide you with the information required to fine tune your SAP system and therefore to ensure that your SAP installation is running efficiently.

For more information about installing and setting up the CCMS, see service.sap.com/instguides > *SAP NetWeaver*.

To enable the auto-alert mechanism of CCMS, see SAP Note 617547.

3.1.2 Component-Specific Alert Monitoring

The following components are part of SAP TM 9.3:

- SAP NetWeaver 7.4
- SAP Business Suite Foundation 7.47 (BS_FND 747)
- SAP SCM Basis 7.13 (SCM_BASIS 7.13)
- SAP Transportation Management 9.3 (SAP TM 9.3)

- SAP SCM Optimizer 12.0

3.1.2.1 SAP NetWeaver 7.4

For information and detailed procedures related to SAP NetWeaver 7.4 alert monitoring, see the Monitoring Setup Guide for SAP NetWeaver at service.sap.com/operationsNW74 and the Technical Operations Manual for SAP NetWeaver in SAP Library under *SAP NetWeaver* > *SAP NetWeaver 7.4* > *SAP NetWeaver Library: Function-Oriented View* > *Application Server* > *Application Server ABAP* > *Administration of Application Server ABAP* > *Monitoring and Administration Tools for Application Server ABAP*.

3.1.2.2 SAP SCM Basis 7.0 Including Enhancement Package 3

SAP SCM Basis including enhancement package 2 enables monitoring of SAP Core Interface (CIF) and qRFC-related values such as an overview of blocked qRFCs. You can start the monitor from the user menu by choosing *SCM Basis* > *Integration* > *CCMS Monitor Sets* (transaction `RZ20`). For more information about setting up this monitor, see SAP Library for SAP Supply Chain Management on SAP Help Portal at help.sap.com/scm. In SAP Library for *SAP Enhancement Package 3 for SAP SCM 7.0*, choose *SCM Basis* > *Alert Monitor*.

3.1.2.3 SAP Transportation Management 9.3

For more information about monitoring SAP TM 9.3 using the Computer Center Management System (CCMS) alert monitor (transaction `RZ20`), see SAP Library for SAP NetWeaver 7.4 at help.sap.com/nw. In SAP Library, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver* > *Technical Operations for Search and Operational Analytics* > *Monitoring* > *Alert Monitoring with CCMS*.

3.1.2.4 SAP SCM Optimizer 12

For more information about installing and setting up SAP SCM Optimizer, see the Installation Guide for SAP SCM Optimizer . The guides are located on SAP Service Marketplace at service.sap.com/instguides > *SAP Business Suite Applications* > *SAP Transportation Management* > *SAP SCM Optimizer*. To monitor the availability of SAP SCM Optimizer, follow the instructions in SAP Note 762183.

3.1.2.5 Internet Graphics Service

The IGS can be monitored with CCMS, which provides 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 the CCMS, you must activate CCMS Monitoring. You can do this by starting report `GRAPHICS_IGS_ADMIN` in transaction `SE38`. Enter **`IGS RFC-Destination`** and press `F8`. Then select the *Environment* menu 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 the CCMS, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver Library: Function-Oriented View* > *Application Server* > *Application Server ABAP* > *UI Technologies in ABAP* > *Further UI Technologies* > *SAP Graphics* > *Administering the Internet Graphics Service (IGS)*.

3.2 Detailed Monitoring and Tools for Problem and Performance Analysis

SAP TM 9.3is based on Web AS 7.4 (part of SAP NetWeaver 7.4).

For more information about technical problem analysis (such as with a database, the operating system, or workload analysis), see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*. This guide covers only the differences and additional information specific to SAP Transportation Management.

3.2.1 SAP Transportation Management 9.3 Analysis Tools

3.2.1.1 Trace and Log Files

Trace files and log files are essential for analyzing problems. The standard SAP NetWeaver tools such as transactions `ST22` and `SM21` can be used to monitor trace and log files. For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver Library: Function-Oriented View* > *Application Server* > *Application Server ABAP* > *Administration of Application Server ABAP* > *Monitoring and Administration Tools for Application Server ABAP*.

SAP TM 9.3 uses the application log (part of SAP NetWeaver) to store error, warning, and success messages issued in critical processes or in UI transactions. For UI transactions, the application log has to be saved explicitly by the user.

For general information about application logs, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver: Function-Oriented View* > *Solution Life Cycle Management* > *Application Log – (BC-SRV-BAL)*.

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

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

For a description of the tasks recommended for containing data growth, see Periodic Tasks [page 29].

3.2.1.2 Interface Monitors

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

SAP TM 9.3 uses the standard tools available in the SAP Web Application Server 7.4, and does not require an application-specific tool. For more information, see the Technical Operations Manual for SAP NetWeaver.

SAP Transportation Management uses standard tools to monitor the XI interfaces. Use transaction `SXI_MONITOR` to monitor XI interfaces.

3.2.1.3 Workload Monitors

SAP Transportation Management uses the standard tools available in SAP Web Application Server 7.4 and does not require an application-specific tool. For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

3.2.1.4 Database Monitors

SAP Transportation Management uses the standard tools available in SAP Web Application Server 7.4 and does not require an application-specific tool.

For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

3.2.1.5 Operating System Monitors

SAP Transportation Management uses the standard tools available for SAP Web Application Server 7.4 and does not require an application-specific tool.

For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

For more information about the Operating System Collector (OS Collector), see SAP Library under the component *Operating System Monitor*.

3.2.2 SAP SCM Optimizer Analysis Tools

Once SAP SCM Optimizer has been correctly installed and configured, the following monitors and transactions can be used for administration, analysis, and maintenance.

3.2.2.1 Administration Tools

Table 8

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility
User list for optimizers	`rcc_session`	As required	Not applicable	Displays a user list for optimizers	Basis Support
Versions of optimizers	`rcc_version`	As required	Not applicable	Displays optimizer versions	System monitoring team
Running optimizer processes	`rcc_session`	As required	Not applicable	Display optimizer processes	Basis Support
RFC destinations for optimizers	`SM59` / `rcc_cust`	During installation or after configuration changes	Test connection status to ensure all is OK	Defining and checking optimizer RFC destinations – can also be used to check if optimizer server is online	System monitoring team and Basis Support
Spool file of optimizer run	`SM37`	As required	Messages in spool file	Check also for application errors after the optimizer run using `rcc_log` (see section Trace and Log Files [page 17]).	Application Support / Job scheduling team

3.2.2.2 Trace and Log Files

Trace files and log files are essential for analyzing problems.

Table 9: Important Trace and Log Files

Monitoring Object	Monitor Transaction / Tool	Monitor Frequency	Indicator or Error	Monitoring Activity or Error Handling Procedure	Responsibility

Optimizer logs and trace files	`rcc_log`
	To display the trace files, choose *Extras* > *Display Log File*.
		Check frequently – daily, weekly	Check for Errors	Display and analyze optimizer logs and trace files.
				These files are on the server in the directory `log` of the SAP gateway on which the optimizers are installed (either own server or application, or database server):
				Directory (Windows version):
				`\usr\sap\<SID>\G<GWNr>\log` or `\usr\sap\<SID>\DVEBMGS<GWNr>\log`
				`<SID>` = SystemID
				`<GWNr>` = SystemNr (=GatewayNr) for example`00`
				For more information, see SAP Note 391808.
					Basis Support

Changing the detail level of trace files	`/SCMTMS/WDC_TS_ENG_COMF`	Check frequently – daily, weekly	Check for Errors	*System Administration* > *Remote Control* and *Communication Framework* > *Settings* > *Engine Debug Configuration*	Basis Support
Spool file of optimizer run	`SM37`	As required	Messages in spool file	Check also for application errors after the optimizer run using `rcc_log` (see above).	Application Support / Job scheduling team

3.2.3 SAP Business Information Warehouse

SAP Business Information Warehouse (SAP BW) is optional. User navigation data from interactive scripting is exported to SAP BW for analysis.

3.2.4 Transportation and Logistics Collaboration Portal Analysis Tools

3.2.4.1 Back - End Error Messages

Back-end error messages are saved in the Netweaver Gateway system. To access these error messages, perform the following steps:

1. Run transaction `/IWFND/ERROR_LOG`
2. Select the log entry, and choose *Error Context*
3. Choose *Application Log*

   Note down the error number of each message with the message text: `This is an external message. Access message text via details`
4. To view the text of each external error message, choose *Detail Exists*

3.2.4.2 Front - End Error Messages

Front-end error messages are displayed in the message bar at the bottom of the screen. There can be instances in which no front-end error messages are displayed but the application is not responding as expected. In these instances, the browser console can contain the error messages. To access these messages on the browser, perform the following steps:

1. Open the developer tools of the browser
2. Go to the *Console* tab page

To access these messages on the Apple iPad, perform the following steps:

1. Connect the Apple iPad to an Apple MacBook
2. Activate the *Web Inspector* on the iOS operating system
3. Open the *Safari* browser and connect to the Apple iPad
4. Go to *Console* tab page

For more information about accessing messages on the Apple Ipad, see developer.apple.com/library/safari/#documentation/appleapplications/reference/safariwebcontent/DebuggingSafarioniPhoneContent/DebuggingSafarioniPhoneContent.html#//apple_ref/doc/uid/TP40006515-SW1

3.2.4.3 Cache Clean-Up

Caches are used in the portal to achieve reasonable performance. These caches include the browser cache and the UI source code cache. When you change the source code due to modifications, implementation of notes or updates, we recommended that you clean up the caches.

To clean the UI source code cache, perform the following steps :

1. In the browser, enter <**Portal URL**>**/resetcachebuster**
2. Enter user and password

If the cache is cleaned, the system displays the message: `Cachebuster for SAPUI5 application "/tmui/coll_portal" has been reset`

To clean the browser cache, perform the following steps:

- Microsoft Internet Explorer

  Go to ▶ *Settings* > *Developer Tools (F12)* > *Cache* ◀

  . Choose *Clear Browser Cache*.
- Google Chrome

  Go to ▶ *Menu* > *Tools* > *Clear Browsing Data* ◀

  . Select *Empty the cache* and choose *Clear Browsing Data*.
- Mozilla Firefox

  Go to ▶ *Options* > *Advanced* > *Network* > *Cached Web Content* ◀

  . Choose *Clear Now*.
- Safari on Apple Ipad

  Go to ▶ *Settings* > *Safari* ◀

  . Choose *Clear Cookies and Data*.

3.3 Data Consistency

If you store related or identical data in multiple places, inconsistencies may occur (for example, after you restore a single component). The following information describes how you can verify consistency and resolve inconsistencies.

SAP TM 9.3 uses standard tools available in SAP Web Application Server 7.4, and does not require an application-specific tool.

For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose ▶ *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver* ◀.

SAP TM exchanges data with SAP ERP using asynchronous messages. If such a message exchange fails, you can re-send messages. Cases of data inconsistency do not, therefore, apply here. For more information about tools for checking message exchange errors, see Monitoring of SAP Transportation Management 9.3 [page 13].

Internal Data Consistency

Internal data consistency describes the correctness of master data and transactional data that you create, change, or delete in the SAP TM application.

Master Data

Master data for SAP TM is located in different software layers, for example SAP TM and SCM Basis. When the system processes master data objects in transactions or automated functions, it ensures consistency by using standard checking procedures. Transactions can identify inconsistent master data objects, and the system displays error messages on-screen and in the application log. You must create an error message for SAP support to check and resolve these errors. A system breakdown does not create master data inconsistencies because the system can only commit consistent data.

Transactional Data

Transactional data for SAP TM is located in the SAP TM software layer. The same rules apply for transactional data consistency as for master data.

Available Tools

No tools specific to SAP TM are required to check data consistency.

External Data Consistency

Implementing an SAP TM system in your system landscape increases the demand on your interface management and system administration by increasing data exchange between systems. In particular, you create a close connection between the SAP ERP systems and SAP TM. Correct, consistent, and current data is a prerequisite for successful planning activities in SAP TM.

Causes of External Data Inconsistency

You can have data inconsistency between systems if one or more of the following events occur:

- Incomplete recovery in one of the systems in the system group
- Manual change of data in SAP ERP or SAP TM
- Program errors
- Incorrect intervention in the core interface (CIF), for example, if you delete orders without transferring them to SAP TM

We provide standard tools for checking internal and external consistency. How you use these tools depends on the scenario you implement in SAP TM. We recommend that you run CIF post processing after you complete internal consistency checks and before you start external consistency checks. If more than one SAP ERP system is connected to an SAP TM system, you must use the corresponding tool for each of these SAP ERP systems and the SAP TM system.

SAP Transportation Management – SAP Optimizer

Since the SAP Optimizer is a stateless engine, we do not expect you to encounter any data inconsistencies between SAP TM and the SAP Optimizer. If the SAP Optimizer crashes during a planning run, SAP TM does not receive optimization results and therefore cannot save inconsistent data.

We also do not expect inconsistent business documents to occur for packaged processing. It may happen that you can commit a certain data package successfully, while the next commit fails. This creates a number of successfully planned business documents and a number of unprocessed business documents. You can start the required business transaction for the unprocessed documents again.

SAP TM informs you if the SAP Optimizer is not available when you start a planning run. We recommend that you monitor the availability of the SAP Optimizer closely. You can restart failed optimization runs when the SAP Optimizer is running again.

For more details, see the Application Operations Guide for the SAP Optimizer.

SAP Transportation Management – OLTP

In a system setup that includes SAP TM and an online transaction processing (OLTP) system such as SAP ERP, it is important to ensure data consistency between the systems. Due to the close link between the systems and the business impact of a system breakdown, we recommend that you closely monitor the inbound and outbound queues, system availability, and application logs of all the systems involved so that you can react quickly.

If you have a system breakdown, none of the systems internally commits inconsistent data. If such an error occurs, you must create a message for SAP support. To quickly restore data consistency on both sides, you must resend any missing business documents after you restart the unavailable components.

Consistency Check Procedure

The following consistency check procedure applies to all SAP TM releases:

1. Lock the users

   You need to do this in case you need to perform a consistency check and the SAP TM system does not allow any active processes. Lock all users except for the administrator, until you restore data consistency.
2. Check and end system activities

Users who are already logged on must leave the system, and you must stop scheduled background jobs for the duration of the consistency check. You can send messages to the relevant users. You must terminate active tasks and jobs, or you must wait until they have finished.

3. Lock CIF queues

   Depending on the object you need to check, you may also need to stop CIF queues so that data transfers are not made from the OLTP systems for the duration of the consistency check. If you are using inbound queues, you can stop the transfer by using report **RSTRFCI1**. If you are using outbound queues, you must use transaction **SMQ1** and program **RSTRFCQ1** in the relevant OLTP systems to stop the transfer.

4. Select the objects to be checked and the scope of the check

   You must identify the business documents that are affected by the system breakdown in the application log or CIF queues.

5. Execute the consistency check
6. Correct inconsistencies

   You use the tools provided to correct data inconsistencies. Alternatively, you can create a message for SAP support.

7. Unlock the CIF queues

   After the consistency checks, or when you have restored internal data consistency, you can restart the CIF queues. If you are using inbound queues, use report **RSTRFCQ3**. If you are using outbound queues, you must restart the queues using transaction **SMQ1** and program **RSTRFCQ3**.

8. Release the background jobs that you stopped earlier

Known Problems

A heavy data load at the interface can cause the system to report inconsistencies that do not actually exist. This is because the system cannot post the data that is being transferred fast enough.

In this case, you cannot correct an inconsistency by transferring the data again.

Use the queued remote function call (qRFC) monitor to check the relevant entry in the queue. Use the error number specified to find a relevant SAP Note. If this procedure and the debugging of the relevant queue do not produce any results, create a message for SAP support. Provide details about the queue name and all the relevant logon data from your system.

OLTP and OLAP Systems

An OLTP system covers functions for sales and distribution, material and inventory management, controlling, shop floor control, logistic execution, and so on.

An online analysis processing (OLAP) system provides accumulated historical data as a basis for analysis in SAP TM. An example of such a system is SAP Business Information Warehouse (BW).

4 Management of SAP Technology

We provide 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 the Technical Operations Manual in SAP Library under SAP NetWeaver.

4.1 Starting and Stopping

For the list of components required for each scenario, see Scenario/Component Matrix [page 10].

If a component does not start properly, see Troubleshooting [page 37] to analyze the problem.

Start and Stop Sequences and Tools

We recommend that you start the components in the following order. To stop, proceed in the reverse order.

Table 10: Start and Stop Sequences and Tools

Software Component	Start and Stop Sequences and Tools		
	Sequence	Tool	Detailed Description
SAP Transportation Management			
TM Server	1	`STARTSAP` / `STOPSAP` (Unix) `SAPMMC` (Windows)	Not applicable
J2EE Engine	2	Depending on the system landscape	Required for Adobe Document Services
SAP ERP 6.0	3	`STARTSAP` / `STOPSAP` (Unix) SAPMMC (Windows)	Not applicable
SAP NetWeaver BI 7.0 Server	4	`STARTSAP` / `STOPSAP` (Unix) `SAPMMC` (Windows)	Not applicable
SAP NetWeaver Exchange Infrastructure (XI) Server	5	`STARTSAP` / `STOPSAP` (Unix) `SAPMMC` (Windows)	Not applicable
CIF (Plug-In)	6	Not applicable	In SAP TM, CIF is only used if SAP ERP is used and the relevant master data is transferred from SAP ERP to SAP TM. It is not used to transfer transactional data from

Software Component	Start and Stop Sequences and Tools		
	Sequence	Tool	Detailed Description
SAP Transportation Management			
			SAP ERP to SAP TM and vice versa.
SAP SCM Optimizer	7	Not applicable	Not applicable
Internet Graphics Server (IGS)	8	You can start/stop the Windows IGS by using services. Choose *Start* > *Settings* > *Control Panel (or: Administrative Tools)* > *Services* > *SAP IGS (scroll down)* > *Button: Start/Stop Service*	Not applicable

Even though SAP XI and SAP SCM Optimizer can be started independently of all other components, we recommend that you start and stop the components in a certain sequence.

For more information about `STARTSAP/ STOPSAP` and `SAPMMC`, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

Starting and Stopping CIF

- To **start** the CIF queues of your SAP TM system, use the following reports in SAP TM and all connected ERP systems.
  - 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, call transaction `CFC1` in the connected SAP ERP systems and transaction `/SAPAPO/C2` in the SAP TM system.

  If you are using outbound queues, you only need to start the outbound queues. If you are using inbound queues, inbound **and** outbound queues have to be started.
- To **stop** the queues, use the following reports in the SAP TM system and all connected SAP ERP systems 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, call transaction CFC1 in the connected SAP ERP systems and transaction /SAPAPO/C2 in the SAP TM system.

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

For more information, see SAP Note 505304.

Starting and Stopping the J2EE Engine

If you want to print from SAP Transportation Management, you have to be able to start/stop the J2EE Engine.

Different procedures apply depending on your operating system and how you installed the J2EE Engine in your system landscape.

For detailed documentation about starting and stopping the J2EE Engine, see the Technical Operations Manual for the J2EE Engine.

The Technical Operations Manual for the J2EE Engine is part of the Technical Operations Manual for SAP NetWeaver and can be found in SAP Library.

4.2 Software Configuration

This section explains which components or scenarios used by this application can be configured and which tools are available for making adjustments. To avoid dumps caused by lack of available memory, enter **250MB** as the value for parameter abap/shared_objects_size_MB . For more information, see SAP note 1780851.

Table 11: Component Configuration Tools

Component	Configuration Tool(s)	Detailed Description
SAP SCM Basis	Not relevant	No technical configuration data
SAP TM	Not relevant	No technical configuration (all technical configuration that is required for running SAP TM is part of SAP NetWeaver)

4.3 Administration Tools

All SAP TM 9.3 components are technically based on SAP NetWeaver.

For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

4.3.1 Administration Tools for SAP Transportation Management 9.3

The following tools can be used for administration of the SAP TM 9.3 system:

Table 12: Administration Tools for SAP TM

Monitoring Object	Monitoring Transaction / Tool	Monitor Frequency	Monitoring Activity or Error Handling Procedure	Responsible	Escalation Procedure
Evaluation of Application Log	Transaction `SLG1`	Daily	Evaluate the application log in SAP Transportation Management	Program scheduling management	Contact application support

For more information about the administration tools for SAP TM 9.3, see SAP Transportation Management 9.3 Analysis Tools [page 15].

4.3.2 Administration Tools for SAP SCM Optimizer

The following tools can be used for administration of the SAP SCM Optimizer system.

Table 13: Administration Tools for 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	Not applicable	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

Transport of Configuration Settings

All configuration settings of SAP SCM Optimizer are stored on the application server. Standard ABAP transports and Customizing settings can, therefore, be used to transport configuration settings.

Customer Modifications

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

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

4.3.3 Administration Tools for SAP Business Information Warehouse

Table 14

Transaction/Tool	Detailed Description
SMQ1	Use this transaction to monitor whether the delta data is filled into the outbound queue.
SMQR	Use this transaction to check the status of the scheduler, and to stop or start it.
BWA7	Use this transaction to monitor active DataSources and regenerate an extraction report. You can also monitor the BW Adapter delta queues.
BWA5	Use this transaction to activate BW Adapter metadata in customer systems.
RSA3	Use this transaction to check and simulate the data extraction

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 the application consists of two parts:

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

The backup and restore strategy for your system landscape should not only consider SAP systems but should also be embedded in the 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).

Table 15

Component	Category	Application Data Type	Backup Method for Application Data
SAP TM Server	XI	Original and Replicated	Database and log backup File system backup (full or incremental)
SAP SCM Optimizer	II	N/A	N/A
SAP IGS	II	N/A	N/A
SAP XI Server	XI	Original and Replicated	Database and log backup File system backup (full or incremental)

4.4.1 SAP TM Server / SAP SCM Optimizer

The SAP TM Server is a component that receives data from other systems, such as SAP ERP, and is also the leading system for some application data of its own. The SAP TM system is based on SAP Web Application Server.

In an SAP TM scenario, dependencies may exist to multiple other components such as SAP ERP, which are based on SAP Web Application Server as well.

In the case of a complete restore of the SAP TM database without data loss, there is no impact on external data consistency with other systems. If data loss occurs, see section 5 (*Managing Incomplete Recovery*) of the best-practice document *Backup and Restore for SAP Business Suite*. This document is available on SAP Service Marketplace at service.sap.com/alm-methodologies > *Best-Practice Documents* > *Backup and Restore for SAP System Landscapes*.

For more information about backup, restore, and recovery of the SAP TM Server and SAP SCM Optimizer including online backup and back up of the scenarios, also see the best-practice document *Backup and Restore for SAP Business Suite*.

4.4.2 SAP Internet Graphics Server

Classification

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

Backup

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 Application Server, you have two options for backup and recovery:

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 back-up `conf` directory 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:

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 directory `conf` of the IGS installation. For a recovery, reinstall the IGS and copy all files from the back-up `conf` directory to the `conf` directory.

Restore

For more information, see the best practice documentation for backing up and restoring SAP Business Suite at service.sap.com/bp-roadmap .

4.4.3 SAP XI Server

For the backup and recovery concept for all other SAP NetWeaver components mentioned in this guide, including the SAP Exchange Infrastructure (XI) Server, see the Technical Operations Manual for SAP NetWeaver in SAP Library.

4.5 Periodic Tasks

In addition to the standard jobs mentioned in the Technical Operations Manual for SAP NetWeaver (in SAP Library under SAP NetWeaver), you must schedule SAP TM-specific jobs in your SAP system. 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. All jobs can be restarted. There are no dependencies between the jobs.

4.5.1 Scheduled Periodic Tasks

This section describes all tasks that can be automated and that are required to run periodically to keep the application running smoothly. Such tasks may be required on component level and are, therefore, relevant in each scenario that uses the component. You can find the mapping in the Scenario/Component Matrix [page 10] section. Other tasks may be relevant for certain business scenarios only. It is important that you monitor the successful execution of these tasks on a regular basis.

Table 16

Standard / Housekeeping Jobs for SAP Transportation Management		
Program Name/Task	**Recommended Frequency**	**Detailed Description**

Standard / Housekeeping Jobs for SAP Transportation Management		
Report POWL_WLOAD	Once, nightly	All user query (work lists) results within a POWL context are cached into an internal cluster table. Every time a user chooses the refresh link in the worklist, the results of the feeder class method GET_OBJECTS are saved to this cache. The POWL always reads the cache regardless of the Sync setting in the type repository or query definition. This cache enables the administrator to create a scheduled worklist using the POWL_WLOAD report.
Report SBAL_DELETE	Occasionally, for example, monthly	As described in SAP Note 195157, using the application log occupies storage space on the database. To free the database of outdated entries, we recommend that you execute report SBAL_DELETE periodically. Recommendation: coordinate with archiving cycles.
Report /SAPAPO/DELETE_PRODUCTS	Monthly	Master data: Deletes products with deletion flag
Report /SAPAPO/DELETE_LOCATIONS	Yearly	Master data: Deletes locations with deletion flag
Report /SCMB/ALEN_ALERT_DELETE	Weekly/monthly	Deletes alerts older than x days
Report /SCMTMS/PLN_EXP_DELETE	Daily	Deletes Optimizer Explanation logs older than x days
Report /SCMTMS/PROCESS_TRIGGER_BGD	Every 10 minutes	Executes re-run of actions for locked objects; see consulting note 1747234 for details of trigger handling

Table 17

Standard / Housekeeping Jobs for TM Tendering		
Program Name/Task	**Recommended Frequency**	**Detailed Description**
Report /SCMTMS/TEND_CONT_PROCESS	Every 5 to 120 minutes, depending on the minimum response times for carriers in tendering	Processes incoming freight quotations and continues the tendering process after a freight quotation has been received or after the maximum response time for a freight request for quotation is over.

Standard / Housekeeping Jobs for TM Tendering		
Report /SCMTMS/ TEND_PROCESS_INBOX	Same frequency as report /SCMTMS/ TEND_CONT_PROCESS. We recommend that you run this report immediately before /SCMTMS/ TEND_CONT_PROCESS.	Converts freight quotations that have been received from carriers by e-mail so that the quotations can be processed by report /SCMTMS/ TEND_CONT_PROCESS. This report is not required if receiving freight quotations by e-mail is not enabled.
Report /SCMTMS/ TEND_NOTIFICATION_MAIL	Hourly/daily	Instead of notifying a carrier immediately about tendering events by e-mail, the system administrator can choose to send collective e-mails to carriers periodically. Schedule this report to create these notification e-mails.

Table 18

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

Table 19

Standard / Housekeeping Jobs for SAP TM Collaboration Portal		
Program Name/Task	**Recommended Frequency**	**Detailed Description**
Report /SCMTMS/ UPLOAD_RFQ_RESPONSE	Daily	This report should be scheduled daily in order to import carrier responses uploaded through the collaboration portal.
Report /SCMTMS/ DEL_DRAFT_DISP_CASE	Weekly/Monthly	There can be situations where your service provider creates a dispute case on the collaboration portal, but does not submit the dispute case. For example, the service provider may close the browser screen before they submit the dispute. In such a situation, the system creates a draft dispute case that is incomplete. To delete these draft dispute cases from the system, you

Standard / Housekeeping Jobs for SAP TM Collaboration Portal		
		must run the program /SCMTMS/DEL_DRAFT_DISP_CASE. We recommend that you run this program at regular intervals to keep your system clean.

4.5.2 Required Manual Periodic Tasks

This section describes all manual tasks that must be run periodically to keep the application running smoothly. A manual task must be executed by a user, whereas the scheduled tasks listed above 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. You can find the mapping in the Scenario/Component Matrix [page 10] section. Other tasks may be relevant for certain business scenarios only. It is important that you monitor the successful execution of these tasks on a regular basis.

4.6 Load Balancing

SAP TM 9.3 uses standard functions for logon and load balancing available in SAP Web Application Server 7.4, and does not require an application-specific tool. For more information, see the Technical Operations Manual for SAP NetWeaver.

For more information about network load balancing, see sdn.sap.com/irj/sdn/ha.

For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw. In SAP Library for 7.4, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

4.7 Management of Outdated Technical Data

Application Copy

For a **homogeneous** system copy of all the components for SAP Transportation Management , the standard procedures of SAP NetWeaver apply.

For more information, see the System Copy documentation in Technical Operations Manual for SAP NetWeaver in SAP Library.

Heterogeneous system copies are currently supported on request and on a project basis. For more details and forms, see service.sap.com/osdbmigration .

> **Note**
>
> A client copy from one system to another 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

transferred to the new system. Therefore, if you want to change your database or application server platform, a heterogeneous system copy is the only procedure that ensures full data replication into the new system.

4.8 Scenario Administration Concept

User Management

SAP TM 9.3 uses standard functions for user management available in SAP Web Application Server 7.4 and does not require an application-specific tool. For more information, see the Technical Operations Manual for SAP NetWeaver..

For more information about user management in SAP TM, see also the SAP TM Security Guide.

Printing

SAP Transportation Management uses standard functions of SAP NetWeaver for printing and does not require an application-specific tool. For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver* > *Administration of Application Server ABAP* > *SAP Printing Guide*.

Quality Management and Test Management

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

5 High Availability

SAP TM 9.3 uses standard functions for high availability in SAP Web Application Server 7.4 and does not require an application-specific tool. For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver: Function-Oriented View* > *Solution Life Cycle Management* > *SAP High Availability*.

5.1 SAP SCM Optimizer

High availability of SAP SCM Optimizer can be achieved by installing the optimizer programs on several servers. Optimizer runs can be distributed to several machines during normal productive use to provide load balancing.

The high availability concept cannot restore the actual state of an aborted optimizer run – the optimizer run has to be repeated completely – but it can ensure immediate availability of the optimizer software on a backup location.

For more information, see the SAP SCM Optimizer Installation Guide, which is available on SAP Service Marketplace at service.sap.com/instguides > *SAP Business Suite Applications* > *SAP Transportation Management* > *SAP SCM Optimizer*.

> **Note**
>
> There is no need to use cluster software.

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 for SAP Transportation Management.

The following topics are covered:

- Transport and Change Management – Enable and secure the distribution of software changes from the development environment to the quality assurance and production environment.
- Development Request and Development Release Management – Enable 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 – Reduce the time, cost, and risk associated with software changes.
- Support Packages and SAP Notes Implementation – Provide 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

SAP TM 9.3 uses standard functions for transport and change management issues in SAP Web Application Server 7.4 and does not require application-specific tools or procedures.

For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver* > *Administration of Application Server ABAP* > *Change and Transport System*.

6.2 Development Requests and Development Release Management

SAP TM 9.3 uses standard functions for development request and development release management issues in SAP Web Application Server 7.4 and does not require application-specific tools or procedures.

For more information, see SAP Library for SAP NetWeaver at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver*.

6.3 Template Management

You can configure Customizing settings by using Business Configuration Sets (BC sets). For more information about BC sets, see SAP Library under *Business Configuration Sets (BC-CUS)*.

6.4 Support Packages and Patch Implementation

SAP TM 9.3 uses standard functions for software maintenance in SAP Web Application Server 7.4 and does not require application-specific tools or procedures.

For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver* > *Administration of the Application Server ABAP* > *AS ABAP (Application Server for ABAP)*.

For more information about the implementation of Support Packages as well as possible side effects, see service.sap.com/patches > *SAP Support Packages in Detail*.

SAP TM 9.3 Recommendations

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

For more information about the availability of SP Stacks for SAP TM 9.3, see 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.

The RIN and Support Packages for SAP TM 9.3 are available on SAP Service Marketplace at service.sap.com/patches. Use the search function to find the maintenance product for SAP TM 9.3.

7 Troubleshooting

SAP TM 9.3 uses standard functions for troubleshooting in SAP Web Application Server 7.4 and does not require application-specific tools or procedures. For more information, see SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw. In SAP Library for *SAP NetWeaver 7.4*, choose *SAP NetWeaver* > *Administration Information* > *Technical Operations for SAP NetWeaver* > *Administration of Application Server ABAP* > *Monitoring and Administration Tools for Application Server ABAP*.

In addition, see the troubleshooting notes section in this document.

8 Support Desk Management

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

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

8.1 Remote Support Setup

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

The read-only support role for SAP TM 9.3 is `/SCMTMS/DISPLAY`.

8.2 Problem Message Handover

For information about processing internal support messages and forwarding them to SAP, see SAP Library for SAP Solution Manager on SAP Help Portal at help.sap.com/solutionmanager. In SAP Library for *SAP Solution Manager 7.0*, choose *SAP Solution Manager* > *Incident Management* > *Service Desk*.

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

The correct component for SAP TM 9.3 messages is *TM*.

For information about safeguarding, see service.sap.com/safeguarding.

9 Services for SAP Solutions

For an overview of all services and support provided by SAP, see SAP Service Marketplace at service.sap.com/servicesmap .

A Appendix

A.1 Categories of System Components for Backup and Restore

Table 20

Categories of System Components	Category Properties	Suggested Methods for Backup and Restore	Examples
I	Only software, no configuration or application data	• No backup, new installation in case of a recovery • Initial software backup after installation and upgrade • Backup of log files	BDOC modeler
II	Only software and configuration information; no application data	• Backup after changes have been applied • No backup, new installation 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: • No data backup needed • Backup of software, configuration, and 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: • Application-specific file system backup • Multiple instances • Backup of software, configuration, and 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: • Database and log backup • Multiple instances • Backup of software, configuration, and log files	SAP IPC (2.0B) * Catalog Server

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

A.2 Related Guides

For more information about installation and configuration procedures, see the Master Guide for SAP TM 9.3 at service.sap.com/instguides > *SAP Business Suite Applications* > *SAP TM* > *Using SAP TM 9.3*.

A.3 Related Information

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

Table 21

Content	Quick Link on SAP Service Marketplace
Master Guide, Installation Guide, and Upgrade Master Guide	service.sap.com/instguides
Related SAP Notes	service.sap.com/notes
Released Platforms	service.sap.com/platforms
Network Security	service.sap.com/securityguide
Technical Infrastructure	service.sap.com/installNW70
SAP Solution Manager	service.sap.com/solutionmanager

www.sap.com