

SAP® Transportation Management 9.3

Using SAP NetWeaver® 7.4



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Documentation on the SAP Service Marketplace

You can find this document at the following address: service.sap.com/instguides ➔

Typographic Conventions

Table 1

Example	Description
< >	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> ".
► ► ►	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
Example ➔	Textual cross-references to an internet address, for example, www.sap.com ➔
/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, <code>SELECT</code> and <code>INCLUDE</code>
EXAMPLE	Keys on the keyboard

Document History

The Upgrade Master Guide is regularly updated on SAP Service Marketplace at service.sap.com/instguides.



Caution

Make sure you have the latest version of the Upgrade Master Guide by checking SAP Service Marketplace immediately before starting the upgrade.

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

Table 2

Version	Date	Description
1.0	2015-05-28	Initial version
1.1	2015-11-12	Version for the SAP TM Upgrade Master Guide, SP02: Two new reports are added to the section Post Import Actions - Reports [page 34]
1.2	2016-01-21	Version for the SAP TM Upgrade Master Guide, SP03 with references to SAP S/4HANA

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1 Getting Started

1.1 About This Document

This Upgrade Master Guide provides a central starting point for the technical upgrade of SAP Transportation Management 9.2 (SAP TM 9.2) or SAP TM 9.1 or SAP TM 9.0 or SAP TM 8.1 or SAP TM 8.0 to SAP TM 9.3. You can find cross-scenario upgrade information as well as scenario-specific information in this guide.

Note

The central starting point for the **technical implementation** of your SAP solution is the Master Guide, which you can find on SAP Service Marketplace at service.sap.com/instguides .

Whenever there is a reference to SAP ERP in the documentation of these applications, this refers not only to SAP ERP systems, but also to SAP S/4HANA.

This Upgrade Master Guide provides an overview of the upgrade paths, as well as the upgrade of the involved software units (components) and scenarios from a technical perspective. The Upgrade Master Guide is a planning tool that helps you to decide which software units you have to upgrade, while taking into account the dependencies between the software units. It refers you to the required detailed documentation, and in particular the following:

- Upgrade guides for single software units (components)
- SAP Notes
- Configuration documentation
- SAP Library documentation

For a general overview of available SAP documentation, see *The Main SAP Documentation Types*.

The Upgrade Master Guide consists of the following main sections:

- [Getting Started \[page 9\]](#)

This section contains valuable information about using this document and related information crucial to the upgrade.

- [Transportation Management Upgrade Overview \[page 14\]](#)

This section provides an overview of a possible system landscape and overall upgrade information.

- *Business Processes of SAP Transportation Management* [external document]

This section contains the following information for each business process:

- A short overview of the business process
- Minimal system landscape
- A software component matrix for each business process, which provides information about that software units (components) that the business process uses and whether the corresponding software unit (component) is mandatory or optional
- References to further information about the business process

- *Business Scenarios of SAP Transportation Management* [external document]

This section contains descriptions of some predesigned business scenarios that can help you to implement SAP TM.

- *Solution-Wide Topics* [external document]

i Note

For information about the technical upgrade to SAP TM 9.3 and the latest upgrade, installation, and configuration guides, see SAP Service Marketplace at service.sap.com/instguides ➔.

We strongly recommend that you use the documents available here. The guides are regularly updated.

Constraints

This Upgrade Master Guide primarily deals with the overall technical upgrade of SAP TM 8.0, SAP TM 8.1, SAP TM 9.0, SAP TM 9.1, and SAP TM 9.2, rather than its subordinate components. This means that additional software dependencies may exist that are not mentioned explicitly in this document. For more information about component-specific software dependencies, see the corresponding upgrade guides.







1.2 Related Information

Planning Information

For more information about planning topics not covered in this guide, see the following content on SAP Service Marketplace:

Table 3




Content	Location on SAP Service Marketplace
Latest versions of installation and upgrade guides	service.sap.com/instguides ➔
SAP Upgrade Info Center – general information about upgrade topics and solution-specific upgrade information	service.sap.com/upgrade ➔
General information about SAP Transportation Management	service.sap.com/scm ➔
Sizing and calculation of hardware requirements – such as CPU, disk and memory resource	service.sap.com/sizing ➔
Released platforms and technology-related topics such as maintenance strategies and language support	service.sap.com/platforms ➔ To access the Platform Availability Matrix directly, enter service.sap.com/pam ➔
Network security	service.sap.com/securityguide ➔
High Availability	service.sap.com/ha ➔
Performance	service.sap.com/performance ➔

Content	Location on SAP Service Marketplace
Information about Support Package Stacks, latest software versions and patch level requirements	service.sap.com/  SAP Support Portal  Software Downloads  SAP Software Download Center  SAP Support Package Stacks  .
Information about Unicode technology	service.sap.com/unicode@sap 

Further Useful Links

The following table lists further useful links on SAP Service Marketplace:

Table 4


Content	Location in SAP Service Marketplace
SAP Notes search	service.sap.com/notes 
SAP Software Distribution Center (software download and ordering of software)	service.sap.com/swdc 
SAP Online Knowledge Products (OKPs) – role-specific Learning Maps	service.sap.com/rkt 

Related Upgrade Master Guides

This Upgrade Master Guide is based on Component Upgrade Master Guides for cross-industry solutions.






1.3 Important SAP Notes













You must read the following SAP Notes before you start the upgrade. These SAP Notes contain the most recent information about the upgrade, as well as corrections to the upgrade documentation.

Make sure that you have the current version of each SAP Note, which you can find on SAP Service Marketplace at service.sap.com/notes .

Installation/Upgrade Notes





Table 5

SAP Note Number	Title
1539802 	SAP TM: Overview note
1678998 	Release Strategy for the ABAP Add-On SAP TM
2159217 	Release Restrictions of SAP Transportation Management 9.3
2238445 	Integration of Supply Chain Execution Platform Applications to SAP S/4HANA, on-premise edition
2159112 	SAP TM 9.3: Collection of notes recommended to be implemented

SAP Note Number	Title
2127323 	Installation/Delta Upgrade note for TM 9.3 on NETWEAVER 740
2127348 	Implementing the SCM Optimizer Version 12.0
2118104 	Installation/Upgrade SCEMSRV 920
2050605 	SAP Event Management 9.2 – Installation/Upgrade
1224284 	Enterprise Services, Installing and Accessing the SOA Documentation. This SAP Note lists the business-related grouping of enterprise services.
1515223 	SAP NetWeaver Process Integration: Release Recommendation. This SAP Note sets out our recommendation on which release of SAP NetWeaver PI you should use.
1529649 	Factory Calendar Expires 2010
1388258 	Version Interpretability within the SAP Business Suite
1573180 	Enable AEX for SAP Business Suite
1846034 	SAP Visual Business 2.1: Information about patches
1738013 	TM: Integration with ERP Enhancement
631042 	Release strategy for Implementation Content (ST-ICO)
1747234 	Trigger Processing and Usage of the Report / SCMTMS / PROCESS_TRIGGER_BGD

Information/Consulting Notes and Troubleshooting Notes


Table 6

SAP Note Number	Title
900000 	NetWeaver Business Client – FAQ
423184 	ALE: Problems with Logical System Names
1080668 	Problems with alert subscription
1634677 	TM: Checking Customizing settings in ERP

2 SAP Transportation Management 9.3 on SAP HANA

SAP Transportation Management (SAP TM) 9.3 is released to run on the SAP HANA database.

1 Note


- The required SAP Netweaver® release is SAP NetWeaver® 7.4. For more information, see SAP note [1812713](#) .
- The release on the SAP HANA database does not imply any functional changes or functional enhancement to SAP TM. All scenarios and all functions in SAP TM can be used on SAP HANA in the same way as on any other supported database.

3 SAP Transportation Management: Upgrade Overview

3.1 Upgrade at a Glance

The following table provides an overview of the software units (components) that you need to upgrade:

Table 7

Previous Release	Target Release	Action and Further Information
SAP TM 8.0	SAP TM 9.3 SP00	Upgrade
SAP TM 8.1	SAP TM 9.3 SP00	Upgrade
SAP TM 9.0	SAP TM 9.3 SP00	Upgrade
SAP TM 9.1	SAP TM 9.3 SP00	Upgrade
SAP TM 9.2	SAP TM 9.3 SP00	Upgrade
SAP SCM Optimizer 7.02 SP01 or SAP SCM Optimizer 7.03 or SAP SCM Optimizer 10.0 or SAP SCM Optimizer 11.0	SAP SCM Optimizer 12.0 or higher (see SAP Note 2127348 )	Upgrade
SAP NetWeaver 7.02 SP01 or SAP NetWeaver 7.31 SP02	SAP NetWeaver 7.40 SP08	Upgrade
Geocoding	Geocoding	No action required
XI CONTENT SAP TM 1.1 to XI Content SAP TM 1.3	XI CONTENT SAP TM 1.4	Upgrade
XI CONTENT SCM BASIS 7.02	XI CONTENT SCM BASIS 7.13	Upgrade
BI Content 747/ 737	BI Content 747/ 737 SP12	Upgrade

Note

SAP Transportation Management delivers web templates and displays query results graphically as an example of how BW queries can be used in Netweaver Business Client. The sources of web templates are delivered in the JAVA stack of SAP BW and hence in order to make use of web templates, you must perform a double stack installation for SAP BW. You need not setup the Enterprise Portal along with this.

3.2 Upgrade Paths

If you use SAP Event Management (SAP EM) as an optional add-on for SAP TM 9.3, make sure that you are using SAP EM 9.2 SP 02 or higher. We recommend that you apply the most recent Support Package.

For all other software units (components) that need to be upgraded, there is a direct upgrade path. This means that a step-based upgrade is not necessary.

3.3 Upgrade of Involved Software Units

There are no special requirements for upgrading the software units (components). For more information about the upgrade of the involved software units (components), see [Overall Upgrade Sequence \[page 19\]](#).

3.4 Software Component Matrix

This section provides an overview of which business scenario uses which software unit (component).

For the latest component version and patch level requirements, see the SAP Support Package page on SAP Service Marketplace at service.sap.com/sp-stacks.

Table 8: Software Component Matrix Components

SAP TM Business Processes	SAP TM 9.3	SAP ERP 6.0/ SAP S/ 4HANA**	SAP EM 9.2* (SP 02 and higher)	SAP SCM Optimizer 12.0
TM: Managing Transportation Requirements	X	X*	(X)	(X)
TM: Managing Forwarding Orders	X	(X)	(X)	X
TM: Managing Bookings	X	(X)	X	X
TM: Managing Freight Orders	X	(X)	X	X
TM: Planning Freight and Selecting Carriers	X	(X)	X	X
TM: Tendering Freight	X	—	—	—
TM: Executing and Monitoring Freight	X	(X)	X	X
TM: Settling Freight Orders	X	X	(X)	X
TM: Settling Forwarding Orders	X	X	(X)	X
<p>** SAP ERP 6.0 EHP 7 works only in SP02 or a higher SP. For more information about SAP ERP 6.0 Enhancement Packages, see service.sap.com/pamInformation published on SAP site (search for "EHP for SAP ERP 6.0") and SAP Note 1738013. Integration to SAP S4HANA on premise edition is supported with SAP S4HANA SPO and subsequent. For more information, see SAP Note 2238445.</p>				

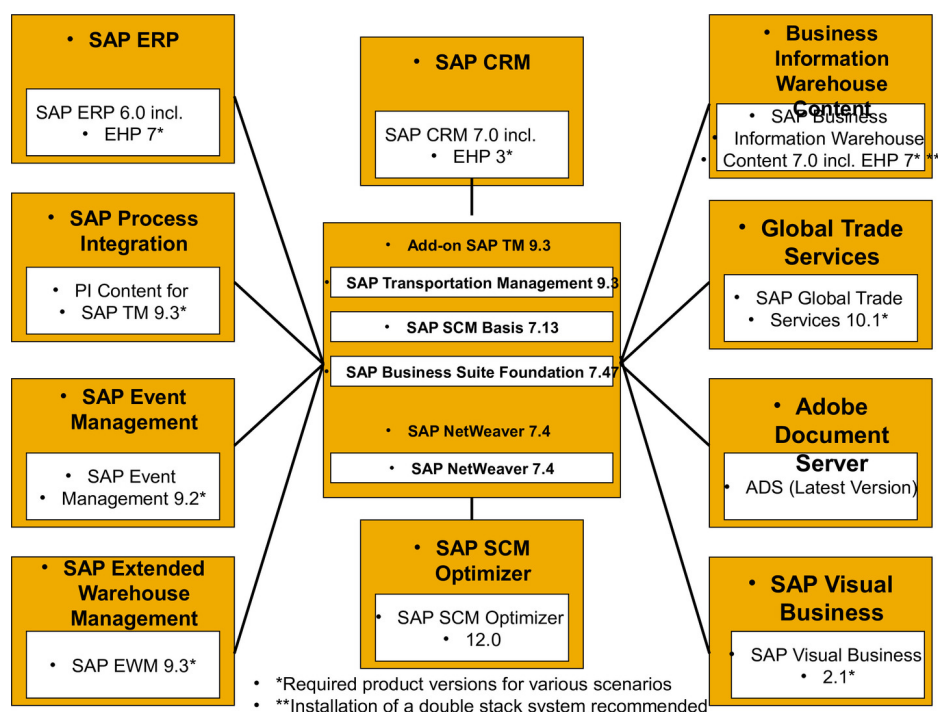
SAP TM Business Processes	SAP TM 9.3	SAP ERP 6.0/ SAP S/ 4HANA**	SAP EM 9.2* (SP 02 and higher)	SAP SCM Optimizer 12.0
---------------------------	------------	-----------------------------	--------------------------------	------------------------

* Usage of latest release (EM 9.2) required only when you use new features.

X = mandatory; (X) = optional; – = not part of the business scenario

3.5 System Landscape

The following figure provides an overview of the minimum possible system landscape for SAP TM 9.3.



Caution

Use a minimal system landscape for test and demo purposes only. For performance, scalability, high availability, and security reasons, do **not** use a minimal system landscape as your production landscape.

We do not recommend installing all components on one host. You should distribute the components among several hosts, as shown in the diagram above. This diagram provides just one example; there are several ways to distribute the components. The distribution depends on many factors, such as sizing, security, available hardware, technical dependencies, and so on.

If you want to print documents such as bills of lading, you require Adobe Document Services (ADS). For more information, see [Configuration of Adobe Document Services for Print Applications](#) in SAP Library for SAP NetWeaver on SAP Help Portal at help.sap.com/nw.

Additional Information Regarding Enterprise Services

Enterprise services are shipped with SAP TM 9.3. There is one technical scenario for enterprise services:

- Using asynchronous enterprise services (TM services): To run asynchronous enterprise services, you must install SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI).

i Note

SAP SNC services run with an SAP ERP system for message exchange.

For more information about the installation of SAP NetWeaver, see the Master Guide for SAP NetWeaver 7.4 including enhancement package 1 on SAP Help Portal at help.sap.com/nw74. In SAP Help Portal, choose ► *SAP NetWeaver 7.4 Including Enhancement Package 1* ► *Installation and Upgrade Information* ► *Master Guide*. For more information about the required releases and Support Packages, see the respective sections about the business processes for SAP Transportation Management.

Setting Up the Documentation Infrastructure for Enterprise Services

SAP TM 9.3 enterprise services documentation is to be run with SAP Solution Composer, which is part of SAP Solution Manager. For more information about how to set up the documentation infrastructure for enterprise services, see SAP Note [1224284](https://support.sap.com/notes/1224284) (*Enterprise Services, Installing and Accessing the SOA Docu*).

3.6 Tools and Resources for Planning Your System Landscape

To plan your system landscape, you can use a few tools and resources that are available to you as SAP customer.

Tools

On SAP Service Marketplace, we provide the Business Process Repository (BPR) Viewer to look up descriptions of business scenarios and business processes.

In addition, there are tools in SAP Solution Manager that support you before, during, or after the installation of your SAP product or SAP enhancement package.

These tools include:

Table 9



Tools for Supporting Installations and Upgrades	
Tool	Purpose
Solution Manager System Landscape (transaction SMSY)	To model and set up your system landscape
SAP Solution Manager Maintenance Optimizer (transaction DSWP)	To install support packages and SAP enhancement packages
Business Process Repository	To access configuration documentation, links to Customizing activities and master data transactions, specifically tailored for individual business processes, business scenarios, or implementable steps

Tools for Supporting Installations and Upgrades



Tool	Purpose
Business Process Change Analyzer (available with SAP enhancement package 1 for SAP Solution Manager 7.0)	To analyze the effects of transports and support packages as well as activation logs for business functions

Note

You require at least one of the following versions of SAP Solution Manager:

- SAP Solution Manager 7.0 EHP1 (Refer SAP note [631042](#)  for required SP)
- SAP Solution Manager 7.1, (Refer SAP note [631042](#)  for required SP)

SAP Solution Manager 7.0 EHP1, SPS 23 supports all update and maintenance processes (for example, transaction `SMSY` or Maintenance Optimizer). You need not upgrade to SAP Solution Manager 7.1.



For more information, see SAP note [631042](#)  and SAP Service Marketplace at support.sap.com/solutionmanager .

SAP Solution Manager: Implementation Content


To get implementation content that supports you during the configuration of your business processes and business scenarios, you need the SAP Solution Manager add-on *Implementation Content* `ST-ICO 150_700` (SP46).

Landscape Verification for SAP Solutions Manager

To verify and correct your system landscape SAP highly recommends that you use Landscape Verification Tool (LVT) for SAP Solution Manager 7.1. This add-on allows you to identify and correct issues in your SAP Solution Manager landscape (transaction `SMSY`) before they cause problems, for example during a system update. Examples for errors are a missing connection to the System Landscape Directory or the wrong assignment of products to technical systems. For each type of error, a generic description for the solution is provided.

For more information about the landscape verification add-on, see SDN at ► www.sdn.sap.com/irj/sdn  ► *Application Lifecycle Management* ► *Technical Enablement* ► *Update and Upgrade* ► *Related Areas on Upgrade and Update Management* ► *Landscape Verification* ► (www.sdn.sap.com/irj/sdn/alm?rid=/webcontent/uuid/70fc3790-7ec9-2d10-57ad-95b2d0d1185d .

Planning Guide – SAP Business Suite Landscape Implementation

To get an overview of the necessary steps for planning a system landscape, use the *Planning Guide - SAP Business Suite Landscape Implementation* on SAP Service Marketplace at service.sap.com/instguides  under ► *SAP Business Suite Applications* ►. The guide also provides you with more information about the following:

- Examples of reference system landscapes
- Planning tools such as the business process repository
- Deployment options
- Typical implementation process

3.7 Business Process Repository (BPR) Viewer

The business process repository viewer (BPR viewer) is a tool on SAP Service Marketplace that allows you to preview the existing business scenarios, business processes that are shipped as part of SAP Solution Manager content. You can make use of the information in SAP Solution Manager during your implementation project by taking the pre-delivered implementation content as the starting point for your project scope. The implementation content is delivered with the following assigned information:

- Description of the business scenario, process, or implementable step
- Configuration content (Customizing activities or configuration documentation)

3.8 Overall Upgrade Sequence

To upgrade to SAP TM 9.3, you require a complete upgrade only for SAP TM. All underlying layers are simply SP upgrades; the releases can remain the same. Refer to the release notes for the individual service packages.

To run a specific scenario, you only need a subset of the available software units. Some software units are only required for special processes. For information about which software units are required to run a specific scenario, see [Software Component Matrix \[page 15\]](#).

For the latest component version and patch level requirements, see the SAP Support Package page on SAP Service Marketplace at service.sap.com/sp-stacks.

Process

Table 10

Step	Action/Required Documentation	Remarks/Subsequent Steps
1	Installation of SAP TM 140 and higher – installation notes	For more information, see SAP Note 212732 .
2	Upgrade of ESA ECC-SE 605	<p>You can also install ESA ECC-SE 603 SP09.</p> <p>If you want to use internal forwarding settlement in the Transportation Charge Management component of SAP Transportation Management 9.2, you have to install ESA ECC-SE 604 SP09.</p> <div>i Note ESA ECC-SE 604 and 605 are independent of EHP7 or any other enhancement package of SAP ERP 6.0.</div> <p>For more information, see the Enterprise Services Documentation for SAP ERP on SAP Help Portal at help.sap.com/erp. Choose ► SAP ERP Central Component ► SAP ERP Central Component ► SAP ERP Central Component 6.0.</p>


3.9 Post Import Actions - XPRAs

In SAP TM 9.3 (SAP TM 140), some fields and tables have a different implementation to those of SAP TM 9.2, SAP TM 9.1, SAP TM 9.0, SAP TM 8.1, or SAP TM 8.0. The system uses reports, programs, and “execution of programs after import” (XPRA) reports to implement these changes automatically.

The following areas are affected:

- Calculation profile
- Rate tables
- Equipment groups
- Schedules
- Customs
- Party roles
- Service level codes
- Planning
- Freight order management
- Forwarding order management
- Waybill stocks
- Credit limit check
- Trade lanes
- Air cargo security
- Charges profiles
- Tendering
- Resource master
- Charge calculation
- EWM integration
- Agreements

Note

For some of the XPRA reports, correction notes are available. For more information, see references of SAP note [2127323](#) .

3.9.1 Calculation Profile

In SAP TM 8.1 or higher, several fields in the Customizing activity *Define General Settings* have been moved to the Customizing activity *Define Calculation Profile*. The invoicing level, which was included in the Customizing activity *Define Settlement Profile* in SAP TM 8.0, now maps to the calculation level in the Customizing activity *Define Calculation Profile* in SAP TM 8.1.

The system uses /SCMTMS/XPRA_101_TCC_CALC_PROF to implement these changes in SAP TM 8.1 or higher.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 11

Size of the Organization	Number of Organizational Units	Run Time
Small	500	2 seconds
Medium	1,000	4 seconds
Large	2,000	8 seconds
Very large	5,000	20 seconds

3.9.2 Rate Tables

Rate Table Reference Scales

In SAP TM 8.0, rate tables use reference scales that you define independently. In SAP TM 8.1 or higher, rate tables use scales that are intended only for these rate tables.

The system uses `/SCMTMS/XPRA_101_TC_RATES` to convert the rate tables from the SAP TM 8.0 format to the format of SAP TM 8.1 or higher.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 12

Size of the Organization	Number of Scale Items	Run Time
Small	100,000	1 minute 40 seconds
Medium	500,000	8 minutes 20 seconds
Large	1,000,000	16 minutes 40 seconds
Very large	10,000,000	2 hours 46 minutes 40 seconds

Rate Table Validity

As of SAP TM 9.3, the validity period of the rates in a rate table can be defined at rate level. This means that rates in a rate table can have different validity periods. The system uses the `XPRA /SCMTMS/XPRA_140_RATE_VALIDITY` to default the validity period of rates created from TM 9.1 onwards to the validity period of the parent rate table.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 13

Size of the Organization	Number of Rate Values	Run Time
Small	10,000,000	8 minutes 20 seconds
Medium	100,000,000	1 hour 23 minutes 20 seconds

Size of the Organization	Number of Rate Values	Run Time
Large	500,000,000	6 hours 56 minutes 40 seconds
Very large	1,000,000,000	13 hours 53 minutes 20 seconds

Migration of Zero Rates

In SAP Transportation Management (SAP TM) 9.1 and 9.2, database records for zero rates in rate tables are stored as RATE = 0. As of SAP TM 9.3, database records for zero rates are stored as ZERO_RATE = X. The system uses the XPRÄ /SCMTMS/XPRÄ_140_ZERO_RATE to migrate the database records for zero rates from the old format to the new format in SAP TM 9.3.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 14

Size of the Organization	Number of Zero Rates	Run Time
Small	100,000	10 seconds
Medium	1,000,000	1 minute 40 seconds
Large	5,000,000	8 minutes 20 seconds
Very large	10,000,000	16 minutes 40 seconds

3.9.3 Equipment Groups

In SAP TM 9.0, equipment groups are dependent on the transportation mode. To ensure that the system continues to respond in the same way after you have upgraded to SAP TM 9.0 or higher, an XPRÄ assigns the transportation modes SEA and ROAD to each equipment group that does not have a transportation mode assigned to it.

The system uses /SCMTMS/XPRÄ_110_EQU_MOT to assign missing transportation modes.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 15

Size of the Organization	Number of Equipment Groups	Run Time
Small	10	1 second
Medium	50	1 second
Large	100	1 second
Very large	200	2 seconds

3.9.4 Schedules

As of SAP TM 9.0, the departure rules support multiple departure days for the same week. If you specify a weekly rule, the days of the week can be selected separately. For this reason, this XPRA migrates the weekday that was previously stored as a single field into seven new fields representing each day of the week.

The new schedule queries also support a selection based on the first/last and standard/actual locations. It is therefore necessary to specify first/last and standard/actual locations in the schedule database tables.

The system uses `/SCMTMS/XPRA_110_FO_SCHEDULE` to convert the schedule tables from the SAP TM 8.1 format to the format of SAP TM 9.0 or higher.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 16

Size of the Organization	Number of Schedules	Run Time
Small	100	5 seconds
Medium	500	25 seconds
Large	1,000	50 seconds
Very large	5,000	4 minutes 10 seconds

3.9.5 Customs

This XPRA is required for system upgrades from SAP TM 8.1 to SAP TM 9.0 or higher. It copies existing settings from the SAP TM 8.1 Customizing tables into the new Customizing tables.

The system uses `/SCMTMS/XPRA_110_GTS_ACTIVITY` to convert the customs tables from the SAP TM 8.1 format to the SAP TM 9.0 format.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 17

Size of the Organization	Number of Customs Settings	Run Time
Small	2	0 seconds
Medium	3	0 seconds
Large	5	1 second
Very large	10	1 second

3.9.6 Party Roles

In SAP TM 9.0, Customizing for party role codes has been moved from the `SAPTM` software layer to `SCM_BASIS`. This XPRC copies existing Customizing settings for party role codes from `SAPTM` to the new Customizing tables in `SCM_BASIS`.

The system uses `/SCMTMS/XPRC_110_PTRO` to move party role code settings from `SAPTM` to `SCM_BASIS`.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 18

Size of the Organization	Number of Party Roles	Run Time
Small	20	1 second
Medium	40	2 seconds
Large	60	3 seconds
Very large	100	5 seconds

3.9.7 Service Level Codes

As of SAP Transportation Management 9.0, transportation service level codes used in sales and purchasing are independent of one another.

They can also be defined as either dependent on or independent of the transportation mode. The Customizing tables for transportation service level codes have been moved from SAP SCM Basis to SAP TM, so that the applications that use these Customizing settings belong completely to SAP TM.

The system uses `/SCMTMS/XPRC_110_SLC` to move service level codes from the `SCM_BASIS` software layer to `SAPTM`.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 19

Size of the Organization	Number of Codes	Run Time
Small	10	1 second
Medium	30	2 seconds
Large	100	10 seconds
Very large	200	20 seconds

3.9.8 Planning

Determine Planning-Relevant Attributes

The XPRÄ /SCMTMS/XPRÄ_140_TOR_GEN_ATTR sets the new planning-relevant attributes that are available as of SAP TM 9.3 to indicate, for example, if the business document represents a capacity or a requirement.

For more information, see the system documentation.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 20

Size of the Organization	Number of Orders	Run Time
Small	500,000	10 seconds
Medium	5,000,000	1 minute 40 seconds
Large	50,000,000	16 minutes 40 seconds
Very large	500,000,000	2 hours 46 minutes 40 seconds

3.9.9 Freight Order Management

Enable Charge Calculation and Settlement

In SAP TM 9.0, the following two indicators have been added to Customizing for freight orders and freight bookings, as well as to the associated documents:

- Enable Charge Calculation
- Enable Settlement

These indicators must be selected for all existing booking order types and booking documents. Otherwise, it will no longer be possible to calculate and settle charges for existing documents.

These indicators must be selected for all existing freight order types and freight order documents if the document is relevant for subcontracting. Otherwise, the indicators must not be selected.

The system uses /SCMTMS/XPRÄ_110_TOR_CHRG_REL to convert the freight management tables from the SAP TM 8.1 format to the format of SAP TM 9.0 or higher.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 21

Size of the Organization	Number of Orders	Run Time
Small	10,000	6 seconds
Medium	200,000	2 minutes
Large	2,000,000	20 minutes
Very large	36,000,000	6 hours

Note

With SAP note [2157929](#), the XPRA report changes to convert only documents not being completed or canceled. This reduces the run time significantly. To convert completed documents, you must run the migration report /SCMTMS/MIGR_110_TOR_CHRG_REL after system upgrade.

Update Dates and Times of Transportation Orders

The XPRA /SCMTMS/XPRA_140_TOR_STOPS (XPRA TM 9.3: Update Assignment Category and Dates/Times of TO Stops) migrates existing appointment dates/times into new fields that are available as of SAP TM 9.3. Also, the XPRA fills the loading/unloading dates/times of the assigned cargo and the coupling/uncoupling dates/times of the assigned transportation units (railcar units and trailer units). Further, new values are available for the assignment category of transportation order stops. The XPRA sets the assignment category values.

Additionally, in service orders, the XPRA migrates the execution date that was previously stored as a single field into two new fields representing start date/time and end date/time of the execution.

The XPRA changes the transportation order stops of transportation order (TO) documents which were last updated within the last 365 days and have life cycle status *Draft*, *New*, or *In Process*. For older TO documents or TO documents that have life cycle status *Completed* or *Cancelled*, you have to run migration report /SCMTMS/MIGR_140_TOR_STOPS.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 22

Size of the Organization	Number of TO Stops	Run Time
Small	100,000	15 seconds
Medium	1,000,000	2 minutes 30 seconds
Large	10,000,000	25 minutes
Very large	100,000,000	4 hours 10 minutes

Hierarchical Views

In SAP TM 9.3, the Customizing activity for defining hierarchical views has been reworked. If you are upgrading from a lower release, you can display your hierarchical views that you created in the lower release by calling view cluster /SCMTMS/VC_TOR_OH_OLD in transaction SM34.

3.9.10 Forwarding Order Management

Forwarding Order Types Customizing

In SAP TM 9.0, the following fields have been added to Customizing for forwarding order types:

- Enable Charge Calculation
- Default Mode of Transport Category

Charge calculation must be enabled for all existing forwarding orders. Otherwise, it would no longer be possible to calculate charges for these documents. Charge calculation must be enabled in Customizing for forwarding orders and in the forwarding order documents.

The default mode of the transportation category is stored in Customizing for the forwarding order type. It can be determined using the default transportation mode, which is also specified in the settings for forwarding order types.

The system uses /SCMTMS/XPRA_110_TRQ_CHRG_REL to convert the forwarding management tables from the SAP TM 8.1 format to the format of SAP TM 9.0 or higher.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 23

Size of the Organization	Number of Orders	Run Time
Small	10,000	6 seconds
Medium	200,000	2 minutes
Large	2,000,000	20 minutes
Very large	10,000,000	1 hour 40 minutes

Note

With SAP note [2158482](#), the XPRA report changes to convert only documents not being completed or canceled. This reduces the run time significantly. To convert completed documents, you must run the migration report /SCMTMS/MIGR_110_TRQ_CHRG_REL after system upgrade.

Planning Status

As of SAP TM 9.2, a new planning status *Partially Planned* has been introduced for transportation requests.

The system checks all transportation request documents, such as forwarding orders, order-based transportation requirements, and delivery-based transportation requirements and sets the planning status as *Partially Planned*, if the following applies:

- The document is in the planning process.
- At least one freight unit (FU) or transportation unit (TU) has been created.
- At least one freight document has been assigned to the document, but not all FU or TU stages have been planned.

The system uses /SCMTMS/XPRA_130_FWO_PLN_STA to perform this migration.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 24

Size of the Organization	Number of Transportation Requests	Run Time
Small	500	1 second
Medium	10,000	10 seconds
Large	100,000	1 minute 40 seconds

Size of the Organization	Number of Transportation Requests	Run Time
Very large	1,000,000	16 minutes 40 seconds

Update Root Key Values for Document References

As of SAP TM 9.0 the Business Transaction Document ID has been included in queries and personal object worklists (POWLs) of forwarding order management. It can be used to select forwarding orders and forwarding quotations by the document references of these business documents.

The system uses the XPRA /SCMTMS/XPRA_140_TRQ_DOCREF to update the /SCMTMS/D_TRQDRF database with correct values for the ROOT_KEY database field. After updating the database, you can also use the Business Tr. Doc. ID parameter for business documents that have been created before you performed the system upgrade.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 25

Size of the Organization	Number of Document References	Run Time
Small	250,000	10 seconds
Medium	500,000	20 seconds
Large	1,500,000	1 minute
Very large	12,500,000	8 minutes 20 seconds

3.9.11 Waybill Stocks

As of SAP TM 9.0 SP05, you can assign multiple organizations and business partners to waybill stocks. The system also validates stocks based on the unique stock IDs you specify and provides better support for prefixes and check digits. Waybill stocks from previous enhancements need to be migrated.

The system uses /SCMTMS/XPRA_120_WBN_CLEANUP to perform this migration.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 26

Size of the Organization	Number of Waybill Number Ranges	Run Time
Small	10	1 second
Medium	100	1 second
Large	1,000	1 second
Very large	10,000	10 seconds

Exhausted Waybill Stocks

As of SAP TM 9.0 SP08, you can mark a way bill stock as exhausted. A new field has been introduced to mark waybill stocks as exhausted.

The system uses /SCMTMS/XPRA_130_WBN_STK_EXHST fill this new field with the correct values.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 27

Size of the Organization	Number of Waybill Stocks	Run Time
Small	150	5 seconds
Medium	300	10 seconds
Large	450	15 seconds
Very large	600	20 seconds

3.9.12 Credit Limit Check

As of SAP TM 9.0, you provide the internal ID of an organization to assign a credit segment ID to a sales organization or company organization. This causes problems when you transport the Customizing between various systems such as, development, test, production, since the internal IDs of the organization change during a migration, whereas the external IDs do not change.

Hence, two new fields have been created in the database for the external IDs of the sales organization and company organization.

The system uses /SCMTMS/XPRA_120_CLC to perform this migration. Note that this XPRA report fills the external IDs for the existing entries maintained with the internal IDs.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 28

Size of the Organization	Number of Sales Organizations	Run Time
Small	10	1 second
Medium	100	1 second
Large	1,000	1 second
Very large	10,000	10 seconds

3.9.13 Trade Lanes

As of SAP TM 9.1, the following fields have been introduced for trade lanes:

- *Trade Lane Category*
- *Trade Lane Type*

You must specify the trade lane category as *TL* and specify a default trade lane type. As a prerequisite, you must specify the default trade lane type in the Customizing for *Define Trade Lane Types* and the internal number range of the number range object /SCMTMS/TD.

A new number range object has been introduced with a length of 20 characters instead of 10 characters. As a consequence, the system determines all the existing trade lanes IDs again using an internal number range of the new number range object /SCMTMS/TD.

The system uses /SCMTMS/XPRA_120_FO_TRADE_LANE to perform this migration.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 29

Size of the Organization	Number of Trade Lanes	Run Time
Small	10	1 second
Medium	100	1 second
Large	10,000	30 seconds
Very large	100,000	5 minutes

3.9.14 Air Cargo Security

As of SAP TM 9.1, cargo hand over party data has been introduced for freight units.

The system uses /SCMTMS/XPRA_120_FU_ACS to perform this migration. To ensure that the system continues to respond in the same way after you upgrade to SAP TM 9.1, this XPRA updates the freight units created in SAP TM 9.0 with the correct values for cargo hand over party data from the location or business partner master data.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 30

Size of the Organization	Number of Freight Units with ACS	Run Time
Small	5,000	5 seconds
Medium	50,000	50 seconds
Large	250,000	4 minutes, 10 seconds
Very large	1,000,000	16 minutes, 40 seconds

3.9.15 Charges Profiles

You need this XPRA when you upgrade your system from SAP TM 9.0 or lower.

It changes the following database tables:

- Organizational unit settings for Charge Management
- SAP TM organizations

The system creates a new profile for general charge calculation settings for each organizational unit that has an entry in the charge calculation settings. This profile is assigned a profile ID and is included in the organizational unit as the charges general settings profile ID. This establishes a direct link between the organizational unit and the corresponding general settings for charge calculation.

The system uses `/SCMTMS/XPRA_120_TCC_FASET` to perform this migration.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 31

Size of the Organization	Number of Organizations	Run Time
Small	1,000	1 second
Medium	5,000	5 seconds
Large	10,000	10 seconds
Very large	50,000	50 seconds

3.9.16 Tendering

As of SAP TM 9.1 the following new fields are available in table `/SCMTMS/D_TORTSD`:

- `TOR_COPY_ROOT_KEY`
References the root key of the freight order copy, which is created when you publish a new tendering.
- `TOR_COPY_STOP_KEY`
References the stop, which is represented by the tendering stop date instances. The referenced stop is a part of the freight order copy.

The new fields are filled for existing tendering stop date instances. The system uses `/SCMTMS/XPRA_120_TEND_STOPDATE` to perform this migration.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 32

Size of the Organization	Number of Tendering Stop Dates	Run Time
Small	1,000	1 second
Medium	10,000	10 seconds
Large	30,000	30 seconds
Very large	100,000	1 minute 40 seconds

3.9.17 Resource Master

As of SAP TM Release 9.1 Support Package 01, two new fields have been introduced for resource master:

- Multiresource
- Number of Individual Resources

The system uses /SCMTMS/XPRA_120_TMS_RESOURCE to upgrade from SAP TM Release 9.0 or below to Release 9.1 or higher.

The XPRA copies the values of multiresource and the number of individual resources for vehicle resources from the Customizing activity *Means of Transport* to the additional header data table of the TM Resource Master (/SCMB/RESTMSHD).

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 33

Size of the Organization	Number of Vehicle Resources	Run Time
Small	100	1 second
Medium	1,000	2 seconds
Large	10,000	20 seconds
Very large	100,000	200 seconds

3.9.18 Charge Calculation

Refactoring


As of SAP TM 9.3, the charges data model has been restructured in order to improve charge calculation. The following changes have been made:

- The system stores the payment term information in the charge items
- The system stores the rate and amount information in the charge lines
- The system stores the calculation base quantities in the calculation basis

The system uses /SCMTMS/XPRA_140_DO_REFACTOR to upgrade charge information of business documents that are not completed and not canceled into the data format of SAP TM 9.3.

Note

If you want to convert charges of business documents that are completed or canceled, you must run the migration report /SCMTMS/MIGR_140_DO_REFACTOR manually.

Apart from charge calculation area, refactoring has been done for several areas, for example in freight order management, forwarding order management, and in charge management. For more information, see SAP Note [2171821](#) .

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 34

Size of the Organization	Number of Charge Elements	Run Time
Small	100,000	15 seconds
Medium	1,000,000	2 minutes 30 seconds
Large	10,000,000	25 minutes
Very large	100,000,000	4 hours 10 minutes

3.9.19 EWM Integration

Transit Warehousing

As of SAP TM 9.3, *Extended Warehouse Management Integration Relevance (EWM_INT_REL)* indicator is available. It specifies whether a transportation order (TO) document, that is, a freight document or a transportation unit, is relevant for integration with the SAP Extended Warehouse Management (SAP EWM).

A transportation order document is relevant for the integration with SAP EWM, if one of the items or transportation stops contain a warehouse number and a logical system (EWM system).

The system uses the XPRA /SCMTMS/XPRA_140_EWM_INT_REL to determine if the transportation stops or items contain a warehouse number and a logical system and sets the indicator accordingly.

For more information, see the system documentation.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 35

Size of the Organization	Number of TO Stops/Items	Run Time
Small	100,000	3 seconds
Medium	500,000	15 seconds
Large	2,000,000	1 minute
Very large	10,000,000	5 minutes

3.9.20 Agreements

Update Organizational Unit ID

As of SAP TM 8.1, you can add for organizational units IDs in agreement documents.

The system uses the XPRA /SCMTMS/XPRA_140_MAP_ORGEXTID to determine and update the ID of organizational units in agreements.

Run Times

Depending on the size of the installation, you can expect the following run times:

Table 36

Size of the Organization	Number of Contractors	Run Time
Small	10,000	2 seconds
Medium	100,000	20 seconds
Large	500,000	1 minute 40 seconds
Very large	1,000,000	3 minutes 20 seconds

3.10 Post Import Actions - Reports

Along with the XPRA reports, you must also execute migration reports in the following areas:

- Forwarding and freight settlement
- Schedules
- Customs
- Freight order management
- Forwarding order management
- Rate tables
- Allocations
- Charges
- Agreements
- Change Documents
- Bill of Lading

Note that the system does not execute these reports automatically during the XPRA phase of the upgrade. You need to manually execute these reports in order to avoid any error during migration of documents. For more information on post-upgrade migration steps, see SAP note [2160716](#).

i Note

In TM 9.3, refactoring has been done for several areas, for example in freight order management, forwarding order management, and in charge management. Some of these changes have implications if you migrate to TM 9.3 from a lower release, for example, if you have made enhancements to configurations or validations. For more information, see SAP Note [2171821](#).

3.10.1 Forwarding and Freight Settlement

As of SAP TM 8.0 and SAP TM 8.1, the system does not automatically update the *Invoiced Amount* field in forwarding settlement documents and freight settlement documents.

When you upgrade to SAP TM 9.0 or higher, you must run program `/SCMTMS/UPDATE_INV_AMT_FWSD` for all forwarding settlement documents and program `/SCMTMS/UPDATE_INV_AMT_FSD` for all freight settlement

documents. The system copies the values of the *Final Amount* field and automatically updates the *Invoiced Amount* field with the copied values.

The runtime is approximately 5 documents per second.

3.10.2 Schedules

If you have schedules in the SAP TM 8.0 or SAP TM 8.1 format, you must use the report `SCMTMS / SCHEDULE_CONVERSION` to convert them to the format of SAP TM 9.0 or higher.

When you execute the report, on the selection screen of the report, you can enter a prefix that is assigned to your new schedule format. This enables you to convert the same schedule multiple times and assign different prefixes to the new schedules.

If you do not enter a prefix, the system creates a new schedule with reference to the old schedule. After conversion, the system retains the old schedule data in the database for your access.

3.10.3 Customs

When you upgrade your system to 9.0 or higher, you must run the report `/SCMTMS/XPRA_110_TOR_GTS_ACT` if you use customs functions. As of SAP TM 9.0, fields for custom statuses have been added to the database table `/SCMTMS/D_TORCCP`. You must run this report to complete these new fields.

As the system only migrates custom-relevant execution documents, the runtime is very short.

3.10.4 Freight Order Management

- Resource usage check

Optionally, you can run the report `/SCMTMS/TOR_UPDATE_RES_ITEM` as of SAP TM 9.1. When you run this report, the system checks a resource for the following:

- Whether a time overlap exists
- Whether the resource used in your freight document or transportation unit is used in another freight document or transportation unit
- Whether a planning block exists
- Whether a downtime exists


The system stores these values at the item-level for faster results. Note that you must execute the resource only on documents that are in logistical execution or planning phase. All new values are relevant as of SAP TM 9.2.

Note that before running this report, you must implement the latest version of note [2097133](#) .

The runtime is approximately 500 documents per second.

- Update reference fields

You must run the report `/SCMTMS/UPDATE_TOR_REF_ITM_KEY` when upgrading from TM 9.0 or lower to TM 9.1 or higher, in order to update the reference fields in a freight unit and freight order items.

Note that before running this report, you must implement the latest version of note [2083891](#) .

The runtime is approximately 500 documents per second.

Note

When you have documents in the system that are not complete, you may face the following issues when you do not run this report post-upgrade:

- Doubling of items after document update from predecessor documents (for example, status update)
- Corruption of document flow (missing references on the user interface)
- Misinterpretation of planning in migrated items, which may lead to incorrect planning results

- Invoice and charge relevance

You must run the report `/SCMTMS/MIGR_110_TOR_CHRG_REL` to set charge and invoice relevance indicators on completed freight order and booking documents.

For more information, see SAP note [2157929](#).

The runtime is approximately 2500 freight order and freight booking documents per second.

Note

When you have documents in the system that are not complete, you may face the following issues when you do not run this report post-upgrade:

- Charges may not be recalculated after update for completed TOR document (from any other referenced document).
- Settlement document may not be updated or may get lost after update for completed TOR document (from any other referenced document).

- Update resource items


You must run the report `/SCMTMS/UPD_CURR_POS_STOP_DB` when upgrading from TM 8.0 or 8.1 to TM 9.0 or higher, in order to update the stop position (first stop, intermediate stop, and last stop) for all documents of business object `/SCMTMS/TOR`.

Note that before running this report, you must implement the latest version of note [2097242](#) .

The runtime is approximately 2500 documents per second. The runtime is significantly less if the number of items per freight order document is more.

- Delivery-based transportation

You must run report `/SCMTMS/UPDATE_FU_BASE_BT` when upgrading from TM 8.0 or 8.1 to TM 9.0 or higher, for the system to update freight unit items with the original forwarding order and delivery number for delivery-based transportation requirement. The system copies this information from the corresponding forwarding order.

Note that before running this report, you must implement the latest version of note [2099124](#) .

The runtime is approximately 5000 documents per second.

- Trailer documents

You must run the report `/SCMTMS/MIGRATE_FOR_TRAILER`, when you use freight orders as trailer documents. As of TM 9.0, trailer documents are transportation units that belong to the forwarding order category and not the freight order category. This report performs the conversion. Note that you must execute this report in every relevant client individually.

The runtime is 50 documents per second approximately.

- Updating source and destination location

As of SAP TM 9.0, freight units retain the source and destination location of their corresponding transportation request document. This information has to be added to all existing freight unit items that are related to a transportation request document. Once you upgrade to 9.2 or higher, you must execute the report `/SCMTMS/FILL_TRQ_SRC_DES_LOC` to migrate relevant freight unit documents.

Note that before running this report, you must implement the latest version of note [2068968](#).

The runtime is approximately 500 documents per second.

3.10.5 Forwarding Order Management

- As of SAP TM 9.0, transportation request documents need to be updated with additional information.

Implement the report from SAP note [1986281](#) by following the instructions provided in the note.

- Charge relevance

You must run the report `/SCMTMS/MIGR_110_TRQ_CHRG_REL` to set charge relevance indicators on completed forwarding order documents.

For more information, see SAP note [2158482](#).

The runtime is approximately 4000 forwarding order documents per second.

i Note

When you have documents in the system that are not complete and when you do not run this report post-upgrade, charges may not be recalculated after update for the completed TOR document (from any other referenced document).

3.10.6 Rate Tables

As of SAP TM 9.1, the system uses values from the rate table type Customizing to fill the following:

- Rate Table Type field in the rate tables
- Customizing rate table templates
- Web rate table templates

To migrate rate tables of former SAP TM releases, you must run the report `/SCMTMS/TC_RATES_MAP_RATE_TYPE`.

Note that before running this report, you must implement the latest version of note [2097133](#).

The runtime is approximately 1000 rate tables per second.

As of SAP TM 9.1, the system stores the number of rate records maintained for a validity period on the Validities tab page of a rate table. When you upgrade to SAP TM 9.1 or higher, you must execute the report `/SCMTMS/TCRATE_UPDATE_REC_CNT` to update this information on the rate tables of lower releases.

The runtime is approximately 100 rate tables per second.

3.10.7 Allocations

If you have allocations in SAP TM 8.0 format or SAP TM 8.1 format, you can use the report `/SCMTMS/TAL_CONVERSION` to convert them to SAP TM 9.0 format or a higher release format.

You can enter an allocation type when you execute the report. In *Define Transportation Allocation Types* Customizing, you can define specific number ranges for different allocation types.

When you select the *Draw New Allocation ID* checkbox, the system generates a new allocation number within the predefined number range.

If the allocation ID of the old allocation is outside the defined number range, you can decide either of the following:

- Whether the old allocation ID must still be assigned to the new allocation
- Whether you want the system to generate a new allocation ID within the number range

3.10.8 Charge Calculation

- In SAP TM 8.0, the system stores the calculation rule details in the table `/SCMTMS/D_TCBASI` and `/SCMTMS/D_TCQTYI`. As of SAP TM 8.1, the system stores this information as part of the table `/SCMTMS/D_TCRULE`.

When you upgrade from SAP TM 8.0 to SAP TM 9.0 or higher, you must migrate the charges by running the report `/SCMTMS/COPY_CALBASE_2_CALRULE`.

- As of SAP TM 9.3 the charges data model has been restructured in order to improve charge calculation. The following changes have been made:
 - The system stores the payment term information in the charge items
 - The system stores the rate and amount information in the charge lines
 - The system stores the calculation base quantities in the calculation basis

If you want to convert charges of business documents that are completed or canceled into the data format of SAP TM 9.3, you must run the migration report `/SCMTMS/MIGR_140_DO_REFACTOR`.

The run time is approximately 6500 charge elements per second.

3.10.9 Agreements

As of SAP TM 8.1, the system adds the organizational ID of organizational units to the agreement documents.


When you upgrade from SAP TM 8.0 to SAP TM 8.1 or higher, you must use the migration report `/SCMTMS/XPRA_140_MAP_ORGEXTID` to determine and update organizational ID name of organizational units in agreements.

The runtime is approximately 5000 agreements per second.

3.10.10 Change Documents

As of SAP TM 9.3, you can optimize the transportation charges of SAP TM.


As a result of optimization, several database tables are outdated. You must use the report /SCMTMS/CORRECT_CDO93 to correct several change document objects of SAP TM. This report removes outdated database tables and regenerates the runtime artifacts of the updated change document objects.

For more information, see SAP Note [2215855](#) .

The runtime is approximately 1 minute.

3.10.11 Bill of Lading

As of SAP TM 9.0, a new concept of handling and maintaining bill of lading numbers is introduced. Hence, when you perform a system upgrade, you must check if any custom development from a release earlier than SAP TM 9.0 needs to be adapted.

For more information, see SAP Note [2221310](#) .

4 Solution-Wide Topics

- For more information about the Upgrade Roadmap that provides methodologies for planning and executing an upgrade project, see SAP Solution Manager. For more information about SAP Solution Manager, see SAP Service Marketplace at service.sap.com/solutionmanager ↗.
- For more information about shared services that are provided by SAP NetWeaver and are required to run a system landscape, such as Solution Manager, System Landscape Directory, Software Lifecycle Manager, see the current Master Guide and Upgrade Master Guide for SAP NetWeaver on SAP Service Marketplace at service.sap.com/installnw70 ↗ and service.sap.com/upgradenw70 ↗.

4.1 SAP Solution Manager

We strongly recommend the SAP Solution Manager platform to efficiently support the implementation of your solution. Using SAP Solution Manager significantly accelerates the implementation process and helps you to achieve your business goals. At the same time, SAP can deliver Support Services based on the business scenarios designed and documented in SAP Solution Manager. Implementation content for your solution may further accelerate the implementation process.

For information about the availability of content specifically tailored to your solution, see SAP Service Marketplace at service.sap.com/solutionmanager ↗.

4.2 Service-Oriented Architecture (SOA)

SAP's delivery on SOA (service-oriented architecture) differs from the pure architectural concept of SOA in the delivery of ready-to-use enterprise services. Enterprise services are SAP-defined Web services which provide end-to-end business processes or individual business process steps that can be used to compose business scenarios while ensuring business integrity and ease of reuse. SAP designs and implements enterprise service interfaces to ensure semantic harmonization and business relevance. This section deals with the service-enablement of SAP Business Suite 7.

4.2.1 Service Enablement

The service enablement of SAP Business Suite consists of one or more of the following SAP components:

- **SAP Business Suite 7**
Enterprise services are an integral part of the software components of the SAP Business Suite applications. Enterprise services are the technical interfaces to the functionality available in the business application.
- **SAP NetWeaver PI 7.0 or higher**
SAP NetWeaver Process Integration (SAP NetWeaver PI) is an open integration and application platform that provides tools enabling you to set up a service-oriented architecture for business applications. You can use

the platform for providing, discovering, and consuming services, integrating applications using the integration server, and managing business processes. Process integration is required in a runtime environment to consume enterprise services in a mediated scenario.

We recommend that you use the highest version of SAP NetWeaver Process Integration (PI). For more information, see SAP Note [1515223](#) and SAP Note [1388258](#).

i Note

Starting with SAP NetWeaver Process Integration (PI) 7.3, SAP provides a new installation option Advanced Adapter Engine Extended (AEX). Since AEX is based on AS Java alone, it is easier to install and maintain as well as it needs less memory and data storage. Therefore, AEX is a cost-saving option compared to a full installation of SAP NetWeaver PI. For more information about the AEX, enter the phrase *Advanced Adapter Engine Extended* in the documentation of SAP NetWeaver Process Integration at help.sap.com/nw73 and see SAP Note [1573180](#).

i Note

Asynchronous services that are enabled for *Web Services Reliable Messaging (WS-RM)* can be called in a point-to-point communication scenario. Otherwise asynchronous services can only be consumed in a mediated scenario.

- **Enterprise Services Repository**

The Enterprise Services Repository (ES Repository) is the central repository that contains the definition of all enterprise services and models. The ES Repository is shipped with SAP NetWeaver PI and with SAP NetWeaver Composition Environment (CE) starting with SAP NetWeaver PI 7.1 and with SAP NetWeaver CE 7.1. The Enterprise Services Repository is a design time environment that enables you to create and enhance enterprise service definitions.

i Note

In a SAP NetWeaver 7.0x landscape you use the Integration Repository to create and enhance enterprise service definitions.

- **Services Registry**

The Services Registry is shipped with SAP NetWeaver PI and SAP NetWeaver CE starting with SAP NetWeaver PI 7.1 and SAP NetWeaver CE 7.1. The Service Registry is only required for the publication of enterprise service end-points (Web services) that have been configured and activated in the SAP Business Suite.

- **SAP NetWeaver CE 7.1 or higher**

The SAP NetWeaver Composition Environment (SAP NetWeaver CE) provides a robust environment for the design and implementation of composite applications.

The design time environment of SAP NetWeaver CE can be used for the model-driven design and development of composite applications based on enterprise services. SAP NetWeaver CE offers the tools and the environment necessary for running composite applications fast and efficiently in a runtime environment.

4.2.2 Installation of the Service-Oriented Architecture (SOA)


The installation of service interfaces, and therefore the service enablement of SAP Business Suite, consists of one or more of the following phases:

- **Identification of software components and required business functions**

You use the technical data section of the enterprise service documentation to identify the following data for each enterprise service:

- the software component version with which the service was shipped
- the business function(s) required to be activated

- **Identification of technical usages** (relevant for SAP ERP only)

SAP Note [1818596](#)  provides a mapping of business functions and software component versions to technical usages. You use this documentation to identify the required technical usages for your list of software component versions and business functions.

- **Installation of the software component ECC-SE** (relevant for SAP ERP only)

The software component ECC-SE contains service implementations for ECC (the ERP Central Component). This component must be explicitly installed if you intend to use enterprise services for ECC functionality. In this case you must also select the technical usage “ESA ECC-SE” during the enhancement package installation.

- **Selection and installation together with the other parts of the enhancement package**

In the enhancement package installation process you must select all the technical usages you have identified for service enablement together with the technical usages you identified for enhanced features in SAP Business Suite. The selected technical usages will install the corresponding software components that contain the enterprise services interfaces and implementations.

- **Import of ESR Content (aka XI Content)** (optional)

To install the content required for the enterprise service definitions you must select the technical usage “XI Content” in the enhancement package installation process. This downloads the content files for SAP NetWeaver PI 7.0 or higher. Unpack the ZIP file and copy the tpz files corresponding to your SAP NetWeaver PI version into the import directory of your Integration Repository (for SAP NetWeaver PI 7.0x) or Enterprise Services Repository (for SAP NetWeaver ES Repository 7.1 or higher). Use the import function to import the content files into the corresponding repository (Integration Repository or Enterprise Services Repository). (Choose ► [Tools](#) ► [Import Design Objects](#) ►)

- **Services Registry** (optional)



The services registry is shipped starting with SAP NetWeaver PI 7.1 and CE 7.1. You must configure the services registry and then publish the enterprise services from the Business Suite application to the registry using the transaction `SOAMANAGER` in the backend.

For further information regarding the SAP NetWeaver PI, CE and ES Repository, refer to the corresponding SAP NetWeaver Installation and Master Guides.

4.2.3 Related Documentation

For more information about the service-oriented architecture (SOA), see the following information sources:

- SCN Community in the SAP Network at scn.sap.com/community/soa  (registration required)

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- SAP Note [1359215](#) : Technical prerequisites for using enterprise services (relevant for *ERP* only)
 - SAP note [838402](#) : Problems with non-Unicode system landscapes

5 References

List of Documents

The following table lists all documents mentioned in this Upgrade Master Guide:















Table 37




Title	Location
SAP NetWeaver 7.4	► help.sap.com/nw ► SAP NetWeaver 7.4 ► <i>Installation and Upgrade Information</i> ► <i>Master Guide</i> ►

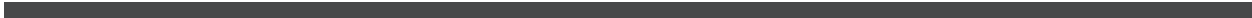
List of SAP Notes

The following table lists all SAP Notes mentioned in this Master Guide:

Table 38

SAP Note Number	Title
2021449 	Installation/Delta Upgrade note for SAP TM 9.2
2091829 	SAP TM 9.2 - Collection of notes recommended to be implemented
1911687 	SAP TM 9.1– Collection of notes recommended to be implemented
1699407 	SAP TM 9.0 – Collection of notes recommended to be implemented
1597030 	SAP TM 8.1 – Collection of notes recommended to be implemented
1625213 	SAP TM 8.1 (RTC) – Collection of notes recommended to be implemented
1522754 	SAP TM 8.0 – Collection of notes recommended to be implemented
1678998 	Release strategy for the Product SAP TM
1539802 	SAP TM: Overview note
1556224 	SAP TM 100: Support Packages for SAP TM 100
1604980 	SAP TM 101: Support Packages for SAP TM 101
1731820 	SAP TM 110 :Support Packages for SAP TM 110
1986216 	Support packages for SAP TM 120
1686826 	Implementing the SAP SCM Optimizer

SAP Note Number	Title
1900479 	Implementing the SAP SCM Optimizer 11.0
2050605 	SAP Event Management 9.2 - Installation/Upgrade
900000 	NetWeaver Business Client – FAQ
934412 	Consulting Note for Geocoding (PTV eServer)
1846034 	SAP Visual Business 2.1: Information about patches
1738013 	TM: Integration with EM, ERP, CRM and EWM - Releases, Enhancement Packages and Support Packages
1224284 	Enterprise Services, Installing and Accessing the SOA Docu This SAP Note lists the business-related grouping of Enterprise Services.
1515223 	SAP NetWeaver Process Integration: Release Recommendation
1388258 	Version Interoperability within the SAP Business Suite
1573180 	AEX Enablement for SAP Business Suite
1566412 	Enhancement package 6 for SAP ERP 6.0: Required SWC
1359215 	Technical prerequisites for using enterprise services
838402 	Problems within non-Unicode system landscapes



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