

SAP NetWeaver Upgrade Master Guide



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Document History

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

Caution

Before you start the implementation, make sure that you have the latest version of this document. You can find the latest version at <http://help.sap.com/nw74> ► *Installation and Upgrade* ►.

Table 1:

Version	Date	Description
1.0	2013-05-10	Initial Version
1.1	2013-05-10	Information regarding the SUM tool adapted in chapter Upgrade Tools
1.2	2013-07-15	Content revised for SAP NetWeaver 7.4 SP03
1.3	2013-07-23	Minor corrections and additions
1.4	2013-09-13	Minor changes with regard to NW 7.4 SR1
1.5	2013-11-20	Chapter 2.2.2: Information about Dual Stack split revised
1.6	2013-12-20	Information about SAP NW BW updated
1.7	2014-01-15	Paths to SLToolset Documentation updated
1.8	2014-03-04	SAP Note 1751237 added to chapter 3.2 Preparatory Activities
1.9	2014-09-15	Minor corrections and changes; terminology revised; Changes and enhancements related to Support Release 2 of SAP NetWeaver 7.4
1.10	2014-10-06	Information regarding SAP BW powered by SAP HANA DB revised
1.11	2014-10-14	Minor changes

Version	Date	Description
1.12	2016-02-29	Corrected a paragraph about the SAP NetWeaver Application Server for ABAP in chapter Systems with Product Instances [page 89].
1.13	2017-06-01	Added information about SAP Gateway Foundation in chapter Standalone Engines [page 102]. Several link and graphic updates

1 Getting Started

1.1 About this Document

This Upgrade Master Guide provides a central starting point for the technical upgrade to SAP NetWeaver 7.4 including Support Releases 1 (SR1) and 2 (SR2). It outlines the overall upgrade process, and refers you to the required detailed upgrade documentation, installation documentation, and SAP Notes.

Caution

The *Upgrade Master Guide* is regularly updated. Make sure that you have the latest version by checking <http://help.sap.com/nw74> ► *Installation and Upgrade* ► immediately before starting the update or upgrade.

Note

Support Releases and Support Packages

If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately.

SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.

Constraints

The business scenarios that are presented here serve as examples of how you can use SAP software in your company. The business scenarios are intended only as models and do not necessarily run the way they are described here in your customer-specific system landscape. Check your requirements and systems to determine whether these scenarios can be used productively at your site. Furthermore, we recommend that you test these scenarios thoroughly in your test systems to ensure that they are complete and free of errors before going live.

See Also

The technical implementation of this SAP solution is described in the document *Master Guide – SAP NetWeaver 7.4*. The Master Guide is available at <http://help.sap.com/nw74> ► *Installation and Upgrade* ►.

1.2 Glossary

Short overview of some technical terms as well as SAP NetWeaver key terms:

Note

Usage Type, Technical Usage, and Product Instance

The term “product instance” replaces the terms “usage type” and “technical usage” for SAP systems based on SAP NetWeaver 7.3 including enhancement package 1 and higher. For more information, see SAP Note [1877731](#). Note that there is no terminology change for older releases and all mentioned terms can be used as synonyms.

Table 2:

Term	Explanation
Client	Clients are additional installable programs or tools. They reside either on local front-end PCs accessed by users or on back-end systems where they act as client programs within an SAP NetWeaver system landscape.
Functional Unit	A configured and activated unit of SAP NetWeaver that provides a set of functions, allowing the implementation and execution of activities such as process steps within IT scenarios. It is nestable and can be grouped into larger functional units. Examples include transport management system, system landscape directory, adapter framework, and business process engine.
Landscape Pattern	Defines if a technical system is used by one or several product systems to calculate update and upgrade methods. The landscape pattern can be defined as “hub” system (if used by several product systems) or as “sidecar” system (if used by one product system).
LMDB	<p>Landscape Management Database</p> <p>Central storage and editor for system information in SAP Solution Manager, supplied by a central SLD. In the LMDB, you manage technical information (such as technical systems and hosts) and logical information (such as product systems and technical scenarios). This data is the basis for other applications, like monitoring and alerting, diagnostics, maintenance transactions, and SAP Support Portal.</p> <p>As of SAP Solution Manager 7.1, the LMDB replaces the previous information storage SMSY.</p>
Logical Component	Group of technical systems that provide a concrete business function by installed product instances and by different roles (such as development, test or production system).
Maintenance Optimizer (MOpz)	Application within SAP Solution Manager that guides you through planning and downloading stack XML files for enhancement packages, support packages, and additional update packages. These files can be used as input files for the installation by update tools like Software Update Manager.
Product	<p>An SAP offering in the SAP price list that performs business tasks.</p> <p>The complete product model is shipped as SAP Software Catalog. The availability of products is published in the Product Availability Matrix (PAM). The product model defines the product structure with its product instances, software components, version, and technical dependencies between product and its components. Products typically have a name starting with 'SAP...' and are characterized by a version period and a maintenance cycle. A product can be installed on one or more technical systems. All technical systems that are involved form the product system.</p> <p>Examples for products are SAP ERP, SAP NetWeaver, and SAP Solution Manager.</p>

Term	Explanation
Product Instance	<p>Part of a product version that bundles one or more software components.</p> <p>A product instance is part of only one product version. It must be installed and updated as a whole on a single technical system. (ABAP-Java dual-stacks are considered one technical system.) Patches can still be installed for individual software components. A product instance can contain other product instances. It can be re-used across products.</p> <p>Examples for product instances are SAP ECC Server and SAP NetWeaver AS ABAP.</p>
Product System	<p>A group of technical systems on which a product version is installed. Product system descriptions are used to maintain and plan products in the system landscape.</p>
Product Version	<p>A release of an SAP product.</p> <p>It bundles product instances and the included software component versions that are available at a particular time for a specific scope of functionality. Like products, product versions are shipped in the SAP Software Catalog. They are the basis for the compatibility of closely coupled systems and the maintenance of product systems.</p> <p>An example is SAP ERP 6.0, which is a product version of the product SAP ERP.</p>
Optional Standalone Units	<p>Optional standalone units are additional software units that you install separately. They are based on Application Server Java (AS Java) and provide specific (server) functions in combination with one or more SAP systems.</p>
SLD	<p>System Landscape Directory</p> <p>Central provider of information on technical systems, for consumers in the system landscape and for external consumers. The SLD gets its information mainly from SLD data suppliers, which are installed on the technical systems, and from the SAP software catalog.</p> <p>With the SLD, you collect and edit system data that is required for system landscape management. This information can be used by other consumers, such as SAP Process Integration, WebDynpro for Java, and SAP Solution Manager.</p>
SMSY	<p>The SAP Solution Manager System Landscape collects information about the SAP systems in the landscape. (SMSY is the name of the transaction in SAP Solution Manager.) As of SAP Solution Manager 7.1, the new information storage LMDB replaces SMSY.</p>
Software Component	<p>Delivery and product unit of an SAP software product</p> <p>A software component comprises a set of packages that are delivered in a single unit. You always assign repository objects to a software component by assigning the package containing these objects. This makes it possible to move repository objects from one software component to another during a release upgrade. A software component is released in successive releases with new functions. You can import patches into each software component separately.</p>
Software Provisioning Manager	<p>A tool that performs software provisioning processes such as installation, uninstallation, system copy, or system transformation. The Software Provisioning Manager is delivered with the Software Logistics Toolset.</p>

Term	Explanation
Stack configuration file	The stack configuration file is created by the Maintenance Optimizer and is system-specific. Depending on the software components that are installed in a system, the Maintenance Optimizer calculates the required software components that have to be updated to reach a certain target configuration.
Standalone Engine	Standalone engines of SAP NetWeaver are additional installable software units. They do not work as full-blown systems of SAP NetWeaver, but as standalone engines that provide a specific (server) function in combination with one or more SAP NetWeaver systems. Standalone engines are not part of a product instance. They do not run on AS ABAP or AS Java.
Technical System	<p>Describes a part of a product's software that is installed on one or several physical or virtual hosts.</p> <p>A technical system is installed and administered as a whole. It is identified by a system ID (SID) or extended SID, a host, and an installation number. There are different technical system types, for example Application Server (AS) ABAP, AS Java, or TREX. Technical systems are central elements when it comes to software component deployment and operational activities, such as monitoring and alerting.</p>
Update	<p>Activities to maintain or enhance a system, such as installing enhancement packages, installing add-ons, or applying Support Package stacks or Support Packages.</p> <p>Note: The tool for system maintenance tasks is the Software Update Manager (SUM). In the SUM guide, the term "Update" is used as collective term for all the tasks that can be performed using this tool (such as performing release upgrades, installing enhancement packages, or updating a system with Support Package Stacks).</p>
Upgrade	The switch from an older software version to a new version. Typically, both the server component of a system landscape and other components are upgraded. Several different technical upgrade procedures are used to upgrade the server component, such as the Repository Switch upgrade or the System Switch upgrade.
Usage Type	<p>An installed and correspondingly configured part of an SAP NetWeaver system that provides key capabilities for a system landscape. It specifies the intended purpose of a system, and it is the result of the configuration of the underlying installed software units and the configuration of the underlying functional units.</p> <p>Examples include business intelligence, process integration, and enterprise portal.</p>
Use Case	A definition of use from the end users' perspective for accomplishing a specific goal within a system. Use cases represent the main capabilities of the system to fulfill specific requirements.

1.3 SAP NetWeaver Use Cases

Use

The use cases illustrate how you can use your SAP NetWeaver implementation. The main use cases of SAP NetWeaver and their corresponding key areas of SAP NetWeaver are as follows:

Table 3:

Use Case	Corresponding Key Area of SAP NetWeaver
Building Composite Applications	SAP Composition Environment
Data Warehousing	SAP Business Warehouse
Building Integration Scenarios	SAP Process Integration
Integrating and Self Servicing Content with SAP Enterprise Portal	SAP Enterprise Portal
Mobilizing Business Processes	SAP NetWeaver Mobile
Custom Application Development (ABAP)	(All areas that allow ABAP development on the SAP NetWeaver Application Server ABAP)

Constraints

As of SAP enhancement package 1 for NetWeaver 7.3, SAP NetWeaver Mobile is only available as add-on to SAP NetWeaver. For more information see SAP Note [1645275](#).

More Information

You can get all information about the key areas with regard to SAP NetWeaver 7.4 in the SAP Help Portal and in the SAP Community Network (SCN):

- **SAP Help Portal**

SAP Help Portal bundles access to SAP product documentation and also related information, such as SAP Notes, product availability information, as well as community content.

For SAP NetWeaver 7.4, you access the Help Portal using the address <http://help.sap.com/nw74>.

1. Choose ► *Application Help* ► *<key area>* ► for instructions for using the application.
2. Choose ► *Application Help* ► *Function-Oriented View* ► *<functional area>* ► for a component-based reference of all functions and tasks that can be performed with the product.


- **SAP Community Network (SCN)**

The SCN is organized into more than 300 “spaces”, which support small, self-contained communities. These communities are typically focused around a topic, an SAP product, or an industry. Each space contains a

complete set of social networking tools including a discussion forum, a blogging area, and an area where you can publish and collaborate on documents.

As a logged-on member, you can go to any space in the SCN landscape but it's likely that you will be interested in visiting and following a particular set of spaces that reflect your particular range of interests and where members who share your interests are likely to hang out.

SCN spaces are where you get the latest news from SAP and the community, where you interact with your peers, where you earn points for your contributions, and where you establish reputation as being expert on certain topics

You access the SCN using the address <http://scn.sap.com> .












1. To learn more about SAP NetWeaver, choose:
 - [Products](#) > [tab "Technology"](#) > [Application Foundation/Integration](#) > [SAP NetWeaver](#) > [SAP NetWeaver](#)  or
 - [Lines of Business](#) > [Information Technology](#) > [SAP NetWeaver](#) 
 - <http://scn.sap.com/community/netweaver> 
2. Moreover, the SAP Community Network provides you with detailed information regarding the SAP NetWeaver use cases:

Table 4:

For the use case	choose in the SCN Community:
Integrating and Self Servicing Content with SAP Enterprise Portal	Products > tab "Technology" > Application Foundation/Integration > SAP NetWeaver > Team Productivity > SAP Enterprise Portal  or choose http://scn.sap.com/community/enterprise-portal 
Data Warehousing	Products > tab "Technology" > Application Foundation/Integration > SAP NetWeaver > Information Management > SAP Business Warehouse  or choose http://scn.sap.com/community/data-warehousing/bw 
Building Composite Applications	Products > tab "Technology" > Application Foundation/Integration > SAP NetWeaver > Process Orchestration > Business Process Management  or choose http://scn.sap.com/community/bpm 
Custom Application Development	Products > tab "Technology" > Application Foundation/Integration > Custom Development > ABAP Development > ABAP Development  or choose http://scn.sap.com/community/abap 

For the use case	choose in the SCN Community:
Mobilizing Business Processes	▶ <i>Products</i> ▶ <i>tab "Technology"</i> ▶ <i>Enterprise Mobility</i> ▶ <i>Enterprise Mobility</i> ▶ or choose http://scn.sap.com/community/mobile
Building Integration Scenarios	▶ <i>Products</i> ▶ <i>tab "Technology"</i> ▶ <i>Application Foundation/</i> <i>Integration</i> ▶ <i>SAP NetWeaver</i> ▶ <i>Process Orchestration</i> ▶ <i>Process Integration & SOA Middleware</i> ▶ or choose http://scn.sap.com/community/pi-and-soa-middleware

1.4 Business View of the Use Cases

For implementation and configuration purposes, the SAP NetWeaver use cases are structured according to the business view of SAP's Software Portfolio. This portfolio is structured using elements such as

- Solutions
- Solution Editions
- Key Capabilities / Scenario Groups
- Scenarios / Processes

Various tools, services and processes, such as the Business Process Repository for the SAP Solution Manager, use the business view of the SAP Software Portfolio.

The following table displays the structured business view of the use cases in the SAP Solution Manager:

Table 5:

Use Case	Corresponds to Business Scenario Group/Key Capability	Includes the Scenarios/Processes
Building Composite Applications	Building Composite Applications	<ul style="list-style-type: none"> • Business Rules Management • Java Development and SOA Infrastructure • Process Composition
Data Warehousing	Enterprise Data Warehousing	<ul style="list-style-type: none"> • Data Modelling • Define Data Flow • Metadata Management • Performance Optimization • Scheduling and Monitoring
Building Integration Scenarios	Building Integration Scenarios	Building Integration Scenarios

Use Case	Corresponds to Business Scenario Group/Key Capability	Includes the Scenarios/Processes
	Building integration-centric processes	Building integration-centric processes using the single-SID PI and BPM solution
Integrating and Self Servicing Content with SAP Enterprise Portal	Integrating and Self Servicing Content with SAP NetWeaver	<ul style="list-style-type: none"> • Building Communities with Wikis & Forums • Content Management Scenarios with Knowledge Management • Managing and mashing up portal pages with Web Page Composer • Portal Landscape Interoperability and Openness • Unified Access to Applications and Processes
Mobilizing Business Processes	Mobilizing Business Processes	<ul style="list-style-type: none"> • Developing Mobile Applications for Occasional Connection • Enabling Mobile Applications for Occasional Connection*
Custom Application Development (ABAP)	Custom Application Development (ABAP)	Custom Application Development (ABAP)
—	Application Lifecycle Management	Application Lifecycle Management

1.5 Mapping of Use Cases to Installable Software Units

To give you a quick overview of SAP NetWeaver 7.4, the table below shows the mapping between use cases of this SAP NetWeaver version and required SAP NetWeaver software units. For details about the product instances, see section [Description of Software Units \[page 88\]](#). For more information about the use cases, see the *Master Guide - SAP NetWeaver 7.4*.

Table 6:

Use Case	Product Instance	Standalone Engines	Optional Standalone Units	Clients
Building Composite Applications: <i>Business Rules Management and Process Composition</i>	<ul style="list-style-type: none"> AS Java Adobe Document Services (optional) Business Process Management and Business Rule Management Composite Application Framework Composition Environment Platform NW Product Description DI [optional] 			<ul style="list-style-type: none"> SAP NetWeaver Developer Studio Visual Composer Adobe LiveCycle Designer (Optional) Web Browser
Building Composite Applications: <i>Java Development and SOA Infrastructure</i>	<ul style="list-style-type: none"> AS Java NW Product Description DI [optional] Enterprise Services Repository 			<ul style="list-style-type: none"> SAP NetWeaver Developer Studio Web Browser
Data Warehousing	<ul style="list-style-type: none"> AS ABAP BW ABAP AS Java NW Product Description [optional] AS Java Extensions [optional] BI Java [optional] EP Core – Application Portal [optional] Enterprise Portal [optional] 	Search and Classification (TREX)		<ul style="list-style-type: none"> SAP GUI with Business Explorer (BI Add-On) SAP BusinessObjects Analysis, Edition for Microsoft Office* [optional] SAP BusinessObjects Crystal Reports* [optional] SAP BusinessObjects Dashboards [optional] SAP BusinessObjects Web Intelligence* [optional] SAP BusinessObjects Design Studio* [optional]

Use Case	Product Instance	Standalone Engines	Optional Standalone Units	Clients
Building Integration Scenarios	<ul style="list-style-type: none"> • Application Server Java • NW Product Description • AS Java Extensions • Application Server ABAP • Process Integration • Enterprise Services Repository • Process Integration Adapter Engine 	<ul style="list-style-type: none"> • Adapter Engine (Java SE) [optional] 	<ul style="list-style-type: none"> • Advanced Adapter Engine [optional] • Advanced Adapter Engine Extended 	
Integrating and Self Servicing Content with SAP Enterprise Portal:	<ul style="list-style-type: none"> • AS Java • NW Product Description • AS Java Extensions • EP Core – Application Portal • EP • Portal Add-on (for <i>Building Communities with Wikis and Forums</i> only) 			
Mobilizing Business Processes: <i>Developing Mobile Applications for Occasional Connectivity</i>	<ul style="list-style-type: none"> • AS ABAP • Mobile • Application Server Java • DI • EP Core – Application Portal [optional] 			<ul style="list-style-type: none"> • SAP GUI • SAP NetWeaver Developer Studio • Mobile Client

Use Case	Product Instance	Standalone Engines	Optional Standalone Units	Clients
Mobilizing Business Processes: <i>Enabling Mobile Applications for Occasional Connectivity</i>	<ul style="list-style-type: none"> AS ABAP Mobile Application Server Java DI EP Core – Application Portal [optional] 			<ul style="list-style-type: none"> SAP GUI SAP NetWeaver Developer Studio Mobile Client
Custom Application Development	<ul style="list-style-type: none"> AS ABAP 			<ul style="list-style-type: none"> SAP GUI ABAP Development Tools (Eclipse)
SAP Knowledge Warehouse	<ul style="list-style-type: none"> AS ABAP AS Java 	<ul style="list-style-type: none"> Search and Classification (TREX) Content Server 		<ul style="list-style-type: none"> Web Browser SAP GUI (KW Add-on included)

*Note that SAP BusinessObjects products require separate licenses.

1.6 Enhancement Packages

1.6.1 Enhancement Package Concept

We have adapted our major release strategy to better fit your adoption cycle. To ensure that you benefit from new developments and innovations while minimizing the impact on your core operational systems, SAP uses enhancement packages to speed up the delivery of new functions.

With SAP enhancement packages, you can install and activate new functions depending on your business needs without having to perform a system upgrade.

You can selectively implement the new functions and activate the software upon business demand. As a result, you can isolate the impact of software updates and make new functions available faster due to shortened test cycles.

Implementation

There are three different scenarios to implement an enhancement package:

- Installation of an enhancement package on an existing SAP system

- New installation of an SAP system including an enhancement package
- Upgrade of an SAP system including an enhancement package




Maintenance

SAP enhancement packages have Support Packages of their own that are equivalent to the Support Package versions of the underlying SAP system. We highly recommend installing the enhancement package in combination with the latest available Support Package stack. This approach reduces installation, modification adjustment, and testing effort. Using this strategy, you can install SAP enhancement packages as a normal maintenance activity together with Support Package stacks.

An enhancement package requires a specific Support Package stack level in the source release SAP system.

Note

If the SAP system is on a lower Support Package stack level, all relevant Support Package stacks for the enhancement package installation are **automatically included** into the download queue by the Maintenance Optimizer, as well as the latest available Support Packages for the enhancement package.

For a better understanding of the general concepts and principles of updating a system, see the *Maintenance Planning Guide* at <http://support.sap.com/mopz>   *section "Guides"* 

Tools


The enhancement package installation requires the following tools:

1. SAP Solution Manager

Note

Use of SAP Solution Manager is **mandatory**.





Tool versions:

We recommend to always use the latest version of the SAP Solution Manager. For more information, see SAP Support Portal at <http://support.sap.com/solutionmanager> .

System Landscape Maintenance with SAP Solution Manager:

Make sure that you have correctly defined and maintained your system landscape in SAP Solution Manager:

- SAP Solution Manager 7.0: Use the SAP Solution Manager System Landscape (transaction `SMSY`) for the complete system description.
- SAP Solution Manager 7.1 SP01 to SP04, use the Landscape Management Database (transaction `LMDB`) to maintain technical system information. For logical product system information, use transaction `SMSY`.
- SAP Solution Manager 7.1 SP05 and higher, use the Landscape Management Database (transaction `LMDB`) for the complete system description. (The transaction `SMSY` is no longer required.)

For more information about the Landscape Management Database (LMDB), see <http://help.sap.com/solutionmanager71>   *Application Help*  *SAP Library SAP Solution Manager 7.1 <SP version>*  *SAP*

Landscape Verification with SAP Solution Manager:

To verify and correct your system landscape, SAP highly recommends that you use the verification functions of the SAP Solution Manager:

➔ Recommendation

Before installing the enhancement package, we recommend that you run a landscape verification to check your landscape setup and your system descriptions, and to correct data if necessary.

- SAP Solution Manager 7.0 to 7.1 SP04: Use Landscape Verification 1.0 for SAP Solution Manager. 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.
- SAP Solution Manager 7.1 SP05 or higher: Use the landscape verification function that is embedded into the product system editor of the Landscape Management Database (LMDB). It replaces the previous Landscape Verification tool.

For more information about the landscape verification, see the SAP Community Network at <http://scn.sap.com/docs/DOC-8793>.

2. Installation or upgrade tools (depending on your scenario)

- SAP Solution Manager Maintenance Optimizer (MOpz)
The [SAP Solution Manager Maintenance Optimizer \(MOpz\)](#) (accessible from the [Change Management](#) work center) supports the download of a consistent queue that includes all necessary Support Packages and enhancement packages. In addition, SAP Solution Manager calculates a valid import queue for the selected SAP system and generates the enhancement package stack configuration file that you require for the installation.
- Software Provisioning Manager 1.0
For the new installation of an SAP system including an enhancement package you use the standard installation tool [software provisioning manager 1.0](#).
- Software Update Manager (SUM)
To install an enhancement package on an existing SAP system, as well as for the upgrade of an SAP system to a higher release including an enhancement package, you use the [Software Update Manager \(SUM\)](#).

1.6.2 Key Facts About Enhancement Packages

The following list summarizes important facts about the enhancement package concept and recommended approaches:

- Install only selected parts of the enhancement package. The selection is driven by the functional need from a business point of view.
- You cannot mix the installation of different enhancement package versions in your ABAP-based SAP system. You can have just one enhancement package version in the SAP system. This means, if you have already updated product instances to a previous EHP you need to apply the current EHP to those components as well.
- SAP enhancement packages are cumulative, meaning that each new enhancement package includes new innovations of its own as well as all innovations delivered with prior packages.

-
- We recommend installing the latest available enhancement package version.
 - Install enhancement packages and Support Packages in one single step (this includes the preconditioned Support Packages).
 - SAP enhancement packages have Support Packages of their own that are equivalent to the Support Package versions of the underlying SAP system.
 - SAP enhancement packages have the same maintenance period as the underlying core application.
 - The installation of an enhancement package is irreversible.
 - As long as you do not activate a business function, the installation of an enhancement package has no impact on existing business processes or user interfaces.
You can only activate business functions in ABAP-based systems, not in Java-based SAP systems.
 - The activation of most business functions and extension sets is irreversible. Only a small number of business functions is reversible.
Test the installation process and activation of new functions in advance on a sandbox system. Ensure that you evaluate the runtime and the SAP system behavior, its dependencies and impacts. Make sure that your SAP system is free of errors before going live.

2 Upgrade at a Glance

2.1 The Overall Process at a Glance

Use

The following graphic shows the main steps that are involved in the process and which are explained below:

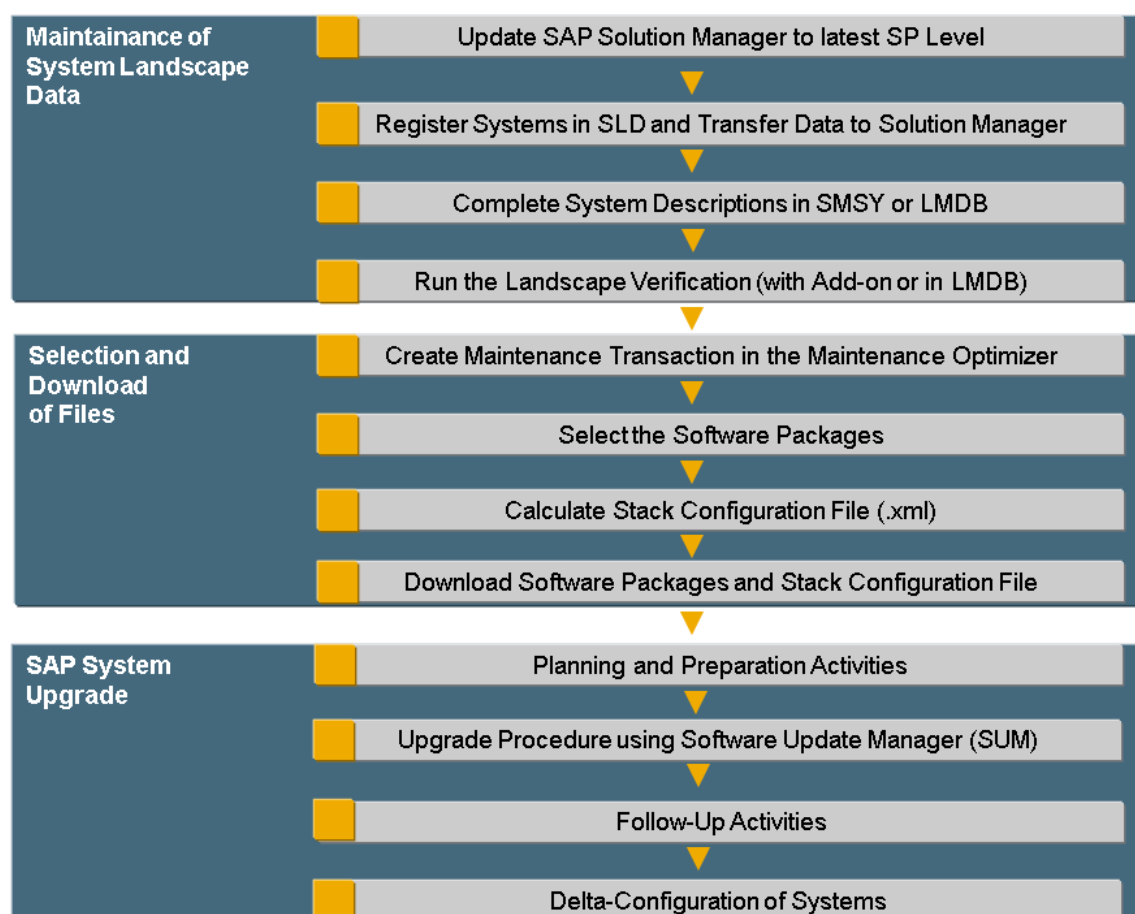


Figure 1: Overview of Main Steps of the Upgrade Process

1. You need the latest SAP Solution Manager system with the latest available Support Package stack level, and the SAP Solution Manager Maintenance Optimizer needs to be configured.
2. You register your systems in the System Landscape Directory (SLD) and transfer the system data to SAP Solution Manager.
3. You check and complete system data with transaction `SMSY` or `LMDB` and update them, if necessary.
4. You run the landscape verification in SAP Solution Manager with the Landscape Verification add-on or with transaction `LMDB` to check if the system data is sufficiently maintained to use the Maintenance Optimizer.

5. As soon as the system data is maintained correctly, you start a new maintenance transaction with the Maintenance Optimizer.
6. As part of the maintenance transaction, you have to select the required software units you want to update as well as the target Support Package level.
7. This selection is used by the Maintenance Optimizer to generate a stack configuration file and to calculate the software components as well as the Support Packages.
8. You download the files using the Download Manager.
9. You plan and prepare the upgrade as described in SUM guide.
10. You upgrade the system using the Software Update Manager (SUM).
11. You carry out the follow-up activities as described in SUM guide and the NW74 update and upgrade guides.
12. You check the configuration of your system and perform the configuration of the delta, if necessary.

More Information

- Regarding the SAP Solution Manager and the transactions `SMSY` and `LMDB` as well as the landscape verification, see also [Enhancement Package Concept \[page 16\]](#), section *Tools*.
- For a better understanding of the general concepts and principles of updating a system, see the *Maintenance Planning Guide* at <http://support.sap.com/mopz> ► [section "Guides"](#) ►
- For information about finding other referenced guides, see section [Documentation References \[page 82\]](#).

2.2 Documentation Reading Sequence

In the different phases of your upgrade or enhancement package implementation project, different documents and information sources support you with information. We recommend to read the documents in the following order which leads you from overview documentation to detailed documentation

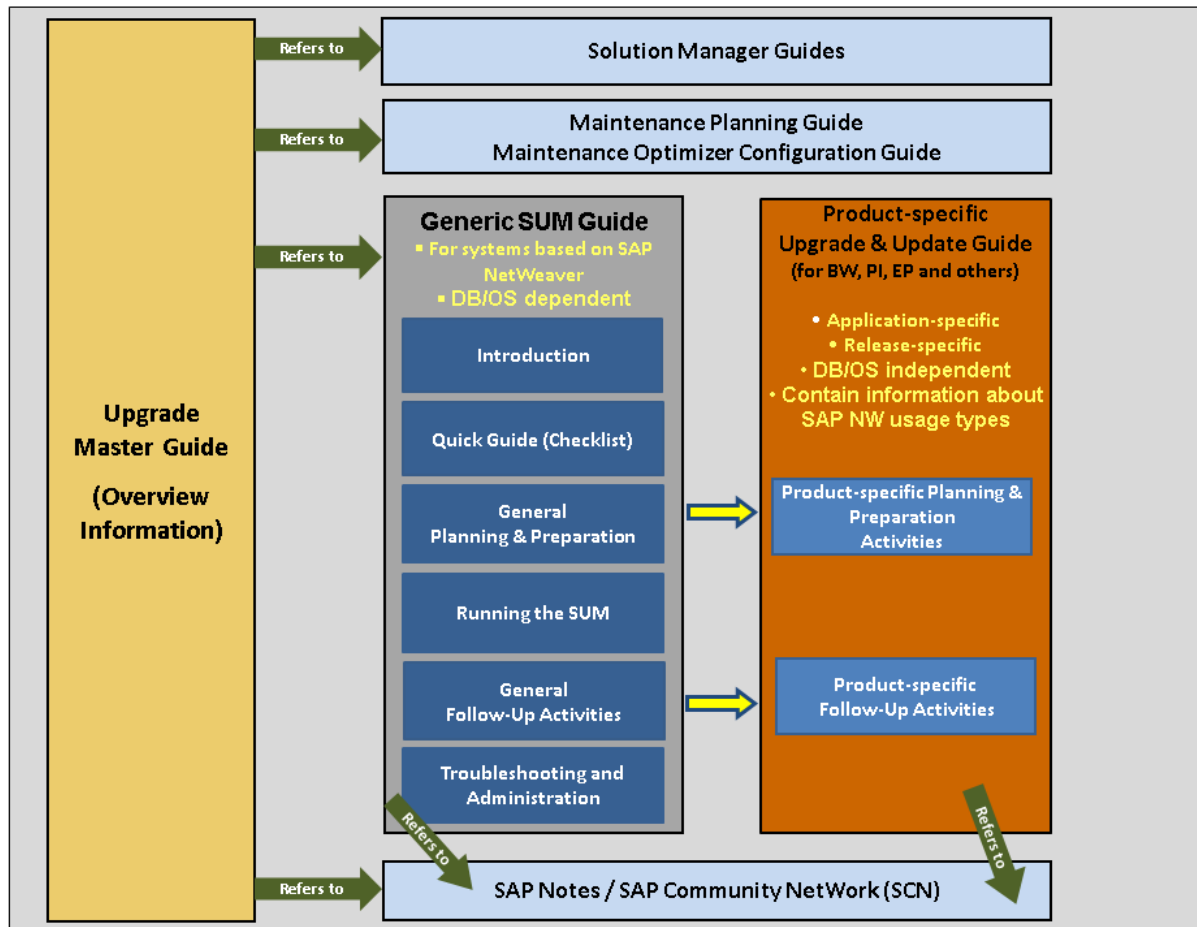


Figure 2: Reading Sequence for Upgrade and EHP Installation

2.3 Upgrade Paths: Upgrade or EHP Installation

From a technical point of view, either an upgrade or an enhancement package installation will be carried out to achieve the target release SAP NetWeaver 7.4, depending on the technology and the start release.

The following table provides an overview about the possible upgrade paths from earlier releases:

Table 7:

Start Release	Upgrade or Enhancement Package installation (EHP inst.)	Comment
<ul style="list-style-type: none"> SAP NetWeaver 2004 (AS-ABAP 6.40) 		No direct upgrade supported
<ul style="list-style-type: none"> SAP NetWeaver 7.0 SAP NetWeaver 7.0 including Enhancement Package 1 SAP NetWeaver 7.0 including Enhancement Package 2 	ABAP: EHP inst. Java: Upgrade	SAP NW 7.0 with Support Package 14 or higher

Start Release	Upgrade or Enhancement Package installation (EHP inst.)	Comment
<ul style="list-style-type: none"> SAP Composition Environment 7.1 SAP Composition Environment 7.1 including Enhancement Package 1 SAP Composition Environment 7.2 	EHP inst.	
<ul style="list-style-type: none"> SAP Process Integration 7.1 SAP Process Integration 7.1 including Enhancement Package 1 	ABAP: Upgrade Java: EHP inst.	
<ul style="list-style-type: none"> AS ABAP 7.10 (Banking) 	Upgrade	
<ul style="list-style-type: none"> SAP NetWeaver 7.3 	ABAP: Upgrade Java: EHP inst.	
<ul style="list-style-type: none"> SAP NetWeaver 7.3 including Enhancement Package 1 	EHP inst.	

To perform both options, you use the Software Update Manager (SUM). For more information, see section [Upgrade Tools \[page 23\]](#).

➔ Recommendation

Check also the PDF-document *SUM SP <version> paths* for a graphical representation of the supported update and upgrade paths, that are possible with the Software Update Manager. This document is attached to every central Software Update Manager note. You can find the latest central SUM Note at: <http://support.sap.com/sltoolset> ➔ [System Maintenance](#) ➔ [System Update Manager \(SUM\) <version>](#) ➔.

2.4 Upgrade Tools

SAP Solution Manager and SAP Maintenance Optimizer (MOPZ)

These tools for the upgrade to SAP NetWeaver 7.4 are described in this document in the [Enhancement Package Concept \[page 16\]](#).

For further information about setting up and maintaining SAP Solution Manager for supporting the upgrade, see [Preparing SAP Solution Manager \[page 41\]](#).

Software Update Manager (SUM)

From a technical point of view, either an upgrade or an enhancement package installation will be carried out to achieve the target release SAP NetWeaver 7.4, depending on the technology and the start release. For an

overview about the possible upgrade paths from earlier releases, see chapter [Upgrade Paths: Upgrade or EHP Installation](#) [page 22].

To perform both options, you use the Software Update Manager (SUM). The Software Update Manager internally calls the `SAPup` tool for upgrade and enhancement package installation. SAP recommends that you download the latest Support Package of the Software Update Manager as it contains latest corrections and is updated regularly. The tool is delivered in regular intervals, independent from SAP application product shipments, via Software Logistics Toolset (SL Toolset).

For more information about the SUM, see the SAP Service Marketplace at <http://support.sap.com/sltoolset>

► [System Maintenance](#) ► [Software Update Manager <Version>](#) ► [Guides](#) ►

The following overview shows how the Maintenance Optimizer and the Software Update Manager work together:

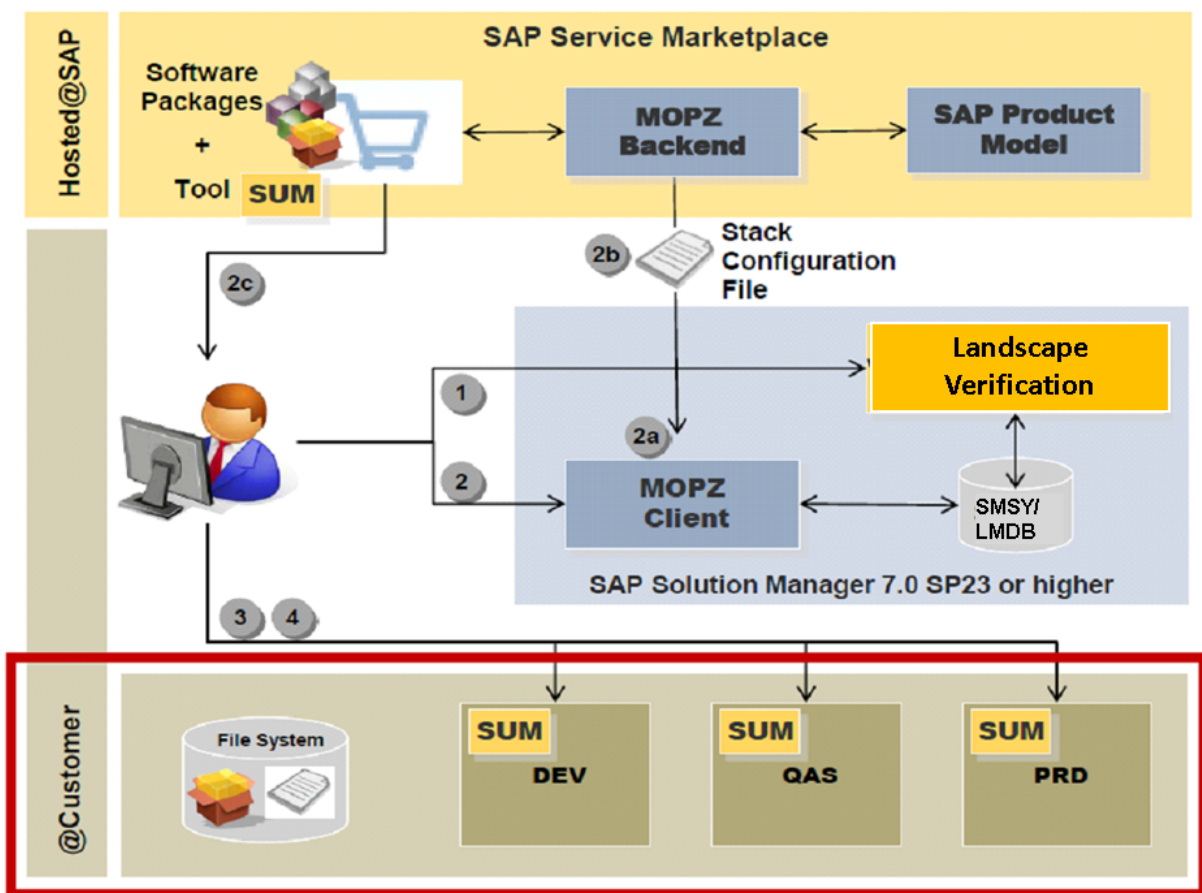


Figure 3: How the Upgrade tools work together

Tools for Special Purposes

- **Upgrade Dependency Analyzer**
When you plan your upgrade, you can use the Upgrade Dependency Analyzer to check the existence of upgrade dependencies between two separately installed SAP systems in your system landscape. For more information, see SAP Service Marketplace at <http://service.sap.com/uda>.
- **Unicode Conversion**

If you want to upgrade a non-Unicode system to a Unicode system, you have to perform a special procedure named "Combined Upgrade & Unicode Conversion (CU&UC)". For more information, see the SAP Community Network at <http://scn.sap.com/docs/DOC-8284>.

- Installation of Additional Java Product Instances

If you want to install additional Java product instances in your upgraded system, you use the Software Update Manager. For more information and installation instructions, see a SUM guide for Java that is relevant for your database and operating system: *Update Guide – Updating SAP Systems Using Software Update Manager (for Java)*, section *Installing Additional Product Instances in an Existing SAP System*.

2.5 Dual-Stack Split

Use

Before you perform an upgrade to SAP NetWeaver 7.4 and higher, you have to split your optional dual-stack system (ABAP+Java system). For more information, see the SAP Community Network at: <http://scn.sap.com/docs/DOC-33703>.

Before you perform an upgrade of a pure SAP NetWeaver system to SAP NetWeaver 7.3 or SAP enhancement package 1 for SAP NetWeaver 7.3, SAP recommends that you split your SAP dual-stack system. (A pure SAP NetWeaver system is an SAP NetWeaver system that does not have SAP Business Suite components deployed. For more information, see SAP Note [1816819](#).)

This is due to the following:

- The dual-stack split procedure is available only for SAP NetWeaver 7.0 systems, SAP NetWeaver 7.3 systems, and SAP NetWeaver 7.3 systems with SAP enhancement package 1.
- SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3, is the last SAP Business Suite release with dual-stack support. No upgrade or update of dual-stack SAP Business Suite systems is supported to higher releases. For more information, see SAP Note [1816819](#).
- As of release 7.4, we strongly recommend to migrate to the single stack. No upgrade or update of optional dual-stack SAP NetWeaver systems is supported to SAP NetWeaver 7.4 and higher. By way of exception, dual-stack implementations can still exist in former SAP Process Integration (SAP PI) installations.
- However, note that a single-stack SAP Process Integration Java (Advanced Adapter Engine Extended) exists that offers almost all features of classical dual-stack implementations. Therefore, you should investigate, if a Java-only implementation of SAP PI is a feasible approach for your use cases. Due to the harmonized process orchestration stack (SAP PI and SAP BPM running on the same Java instance), stateful system-centric processes can be developed using SAP Process Orchestration capabilities. Processes that are created with ccBPM need to be redesigned and modeled with SAP Business Process Management (SAP BPM). For more information about how to do this, see the SAP Community Network at: <http://scn.sap.com/docs/DOC-28803>.

Caution

SAP BW powered by SAP HANA database

The dual-stack split is mandatory if you want to upgrade and migrate to SAP BW on SAP HANA database.

Prerequisites

The dual-stack split procedure is valid for SAP dual-stack systems based on the following release levels:

SAP NetWeaver 7.0 SP14 or higher

SAP NetWeaver 7.0 including Enhancement Package 1 or 2 or 3

Features

You split a dual-stack system into one ABAP stack and one Java stack each with its own system ID using the Dual-Stack split tool. This tool is part of the Software Logistics Toolset (SL Toolset) 1.0. See <http://support.sap.com/sltoolset> ► *System Provisioning* ► *Split Option* ► *Guide for Systems Based on SAP NW <version>* ► for more information.

Integration

SAP Business Suite 7i2011 is the last SAP Business Suite release with Dual-Stack support. Only in few cases, Dual-Stack is still required (SAP Solution Manager, SAP Process Integration). We recommend to move away from Dual-Stack systems where possible.

Any Dual-Stack-Split-Tool functionality will be offered in the Software Logistics Toolset (SL Toolset). For the SL Toolset offering and release schedule, see the SAP Note [1563579](#) ► (Central Release Note for Software Logistics Toolset 1.0).

More Information

- For more information about the discontinuation of optional dual-stack deployments, see SAP Community Network at: <http://scn.sap.com/docs/DOC-33703> ►.
- For more information on the dual-stack split procedure offered by SAP, see the SAP Community Network at: <http://scn.sap.com/docs/DOC-25162> ►.
- For information about the Dual-Stack Split Tool refer to the *Dual-Stack Split Guide* at <http://support.sap.com/sltoolset> ► *System Provisioning* ► *Split Option* ► *Guide for Systems Based on SAP NW <version>* ►. This guide also informs about the current SAP Notes regarding the dual-stack split. They contain the most recent information on the dual-stack split, as well as corrections to the dual-stack split documentation.
- For information about the use cases for splitting dual-stack systems, see SAP Note [1655335](#) ►.
- For information about the dual stack support for Business Suite systems, see SAP Note [1816819](#) ►.
- For more information about the Software Logistics Toolset in general, see SAP Note [1563579](#) ► (Central Release Note for Software Logistics Toolset 1.0).

2.6 Transition from SAP NetWeaver 2004

Caution

As the extended maintenance of SAP NetWeaver 2004 has been terminated in 2013, an direct upgrade from SAP NetWeaver 2004 to SAP NetWeaver 7.4 is not possible anymore. The following describes the main differences between the SAP NetWeaver release 2004 and 7.4 for your information only.

Relation Between Scenarios and Use Cases

SAP NetWeaver 7.4 no longer uses technical scenarios as defined with SAP NetWeaver 2004 to describe the capabilities SAP NetWeaver provides. Instead, a set of “use cases” illustrates how you can implement and use SAP NetWeaver. Use cases provide a structured access to configuration information in SAP Solution Manager and therefore ease the implementation process.

From the following table you can see how SAP NetWeaver 2004 technical scenarios translate into SAP NetWeaver 7.4 use cases.

Table 8:

SAP NetWeaver 2004 - Technical Scenarios	SAP NetWeaver 7.4 - Use Cases
SAP Business Information Warehouse (SAP BW)	Data Warehousing
BI Information Broadcasting	Data Warehousing
SAP Enterprise Portal (SAP EP)	Integrating and Self Servicing Content with SAP Enterprise Portal
SAP Mobile Infrastructure (SAP MI)	Mobilizing Business Processes
SAP Knowledge Warehouse (SAP KW)	No specific use case in SAP NetWeaver 7.4; Knowledge Warehouse is an integral part of AS ABAP and AS Java
SAP NetWeaver Development Environment: Development of ABAP applications	The preferred SAP NetWeaver version for custom application development in ABAP is SAP NetWeaver 7.0 as part of the SAP Business Suite. SAP Business Suite is based on SAP NetWeaver 7.0 and the features of AS ABAP included in SAP Business Suite 7i2011 and SAP NetWeaver 7.4 have been aligned to a great extent. Although AS ABAP is fully supported as a development platform in SAP NetWeaver 7.4, we recommend using the enhancement packages for SAP NetWeaver 7.0 for ABAP development. For information about the enhancement package availability, see SAP Service Marketplace at http://support.sap.com/releasesstrategy .
SAP NetWeaver Development Environment: Development of Java applications	Not described as a separate use case, part of the AS Java and NWDI installation


SAP NetWeaver 2004 - Technical Scenarios	SAP NetWeaver 7.4 - Use Cases
SAP NetWeaver Development Environment: Team-oriented development of Java applications	Not described as a separate use case, part of the AS Java and NWDI installation
SAP NetWeaver Development Environment: Development with SAP NetWeaver Java Development Infrastructure	Not described as a separate use case, part of the AS Java and NWDI installation
SAP NetWeaver Development Environment: Interactive Forms based on Adobe software	Custom Application Development ABAP (Web Dynpro Development). Note that the preferred SAP NetWeaver version for custom application development in ABAP is SAP NetWeaver 7.0 as part of the SAP Business Suite.
SAP NetWeaver Development Environment: Development of Portal iViews Using SAP NetWeaver Visual Composer	Integrating and Self Servicing Content with SAP Enterprise Portal
SAP NetWeaver Development Environment: Development of Portal Content with PDK for .NET	Integrating and Self Servicing Content with SAP Enterprise Portal

Installable Software Units

With SAP NetWeaver 7.0, usage types have been introduced. They replace the formerly known software components, such as SAP Web AS ABAP. Usage types represent the capabilities of an SAP NetWeaver system offered by a collection of installed and configured (technical) software components. A usage type defines the role a system plays in a given scenario.

Note

Product Instance replaces Usage Type as of SAP NW 7.31

The term “product instance” replaces the terms “usage type” and “technical usage” for SAP systems based on SAP NetWeaver 7.3 including enhancement package 1 and higher. For more information, see SAP Note [1877731](#) . Note that there is no terminology change for older releases and all mentioned terms can be used as synonyms.

When you upgrade your SAP NetWeaver 2004 components to a SAP NetWeaver release lower than 7.4, the components are mapped to the corresponding product instances and upgraded accordingly. Missing software is deployed so that your system contains complete product instances after the upgrade.

In addition to SAP systems with product instances, there are additional SAP NetWeaver building blocks: standalone engines and clients. See the [Glossary \[page 6\]](#) for a definition of these terms. For a description of these software units, see [Description of Software Units \[page 88\]](#).

The following table provides an overview of the mapping between SAP NetWeaver 2004 components and the software units of SAP NetWeaver 7.4.

Table 9:

SAP NetWeaver 2004 Components	Building Blocks of SAP NetWeaver 7.4
SAP Web Application Server Components	

SAP NetWeaver 2004 Components	Building Blocks of SAP NetWeaver 7.4
SAP Web Application Server ABAP 6.40	Application Server ABAP (AS ABAP) [product instance]
SAP Web Application Server Java 6.40	<ul style="list-style-type: none"> • Application Server Java (BASIC) [product instance] • AS Java Extensions (AS) [product instance] • NW Product Description (NW-MODEL) [product instance]
Adobe Document Services	Adobe Document Services [product instance]
SAP GUI	SAP GUI [client]
SAP Internet Transaction Server (SAP ITS)	Included in Application Server ABAP (AS ABAP) [product instance]
SAP Gateway	Gateway [standalone engine]
SAP NetWeaver Visual Composer	Part of Composition Environment Platform (CE-ENV) [product instance]
PDK for .Net (Portal Add-In for Visual Studio 2005, Portal Runtime for Microsoft .NET, Java-.NET Interoperability Framework).	Part of EP Core – Application Portal (EPC) [product instance]
Forums Application	Part of Portal add-on
Search and Classification Components	
Search and Classification (TREX)	Search and Classification (TREX) [standalone engine]

2.7 Transition from SAP NetWeaver 7.0

Caution

The upgrade to SAP NetWeaver 7.4 requires SAP NetWeaver 7.0 with Support Package 14 or higher.

Relation Between IT Scenarios and Use Cases

SAP NetWeaver 7.4 no longer uses IT scenarios as defined with SAP NetWeaver 7.0 to describe the capabilities SAP NetWeaver provides. Instead, a set of use cases illustrate how you can implement and use SAP NetWeaver. Use cases provide structured access to configuration information in SAP Solution Manager and therefore ease the implementation process.

From the following table you can see how SAP NetWeaver 7.0 IT scenarios translate into use cases for SAP NetWeaver 7.4:

Table 10:

SAP NetWeaver 7.0 - IT Scenarios	SAP NetWeaver 7.4 - Use Cases	More Information
Running an Enterprise Portal	Integrating and Self Servicing Content with SAP Enterprise Portal	Upgrade of Scenarios Based on SAP Enterprise Portal [page 53]
Accelerating Global Delivery of Application	Delivered as separate product — not part of the SAP NetWeaver 7.4 shipment	For information about Accelerated Application Delivery, see SAP Community Network at http://scn.sap.com/community/accad-for-netweaver
Enterprise Knowledge Management: Content Integration and Management; Content Creation, Publication, and Access	Integrating and Self Servicing Content with SAP Enterprise Portal	Upgrade of Scenarios Based on SAP Enterprise Portal [page 53]
Enterprise Knowledge Management: Documentation, Training Materials and Manuals Management	No specific use case in SAP NetWeaver 7.4; Knowledge Warehouse is an integral part of AS ABAP and AS Java	Upgrade of SAP Knowledge Warehouse [page 73]
Enterprise Search: Enabling Embedded Search	No use case in SAP NetWeaver 7.4; Embedded search is provided as part of AS ABAP	
Enabling User Collaboration	Integrating and Self Servicing Content with SAP Enterprise Portal	Upgrade of Scenarios Based on SAP Enterprise Portal [page 53]
Business Planning and Analytical Services	Data Warehousing	Upgrade of Scenarios Based on SAP BW [page 56]
Enterprise Reporting, Query, and Analysis	Data Warehousing	Upgrade of Scenarios Based on SAP BW [page 56]
Enterprise Data Warehousing	Data Warehousing	Upgrade of Scenarios Based on SAP BW [page 56]
Enabling Application-to-Application Processes	Building Integration Scenarios	Upgrade of Scenarios Based on SAP Process Integration [page 61]
Enabling Business-to-Business Processes	Building Integration Scenarios	Upgrade of Scenarios Based on SAP Process Integration [page 61]
Business Task Management	Building Composite Applications	Upgrade of Scenarios Based on SAP Composition Environment [page 68]
Enabling Enterprise Services	Building Integration Scenarios	Upgrade of Scenarios Based on SAP Process Integration [page 61]


SAP NetWeaver 7.0 - IT Scenarios	SAP NetWeaver 7.4 - Use Cases	More Information
<p>Developing, Configuring, and Adapting Applications:</p> <ul style="list-style-type: none"> Developing Java Applications using Web Dynpro Creating Composite Applications Creating Applications Using SAP NetWeaver Visual Composer 	Building Composite Applications	Upgrade of Scenarios Based on SAP Composition Environment [page 68]
<p>Developing, Configuring, and Adapting Applications:</p> <ul style="list-style-type: none"> Creating Business Applications Using ABAP Developing ABAP Applications Using Web Dynpro 	<p>The preferred SAP NetWeaver version for custom application development in ABAP is SAP NetWeaver 7.0 as part of the SAP Business Suite. SAP Business Suite is based on SAP NetWeaver 7.0 and the features of AS ABAP included in SAP Business Suite 7i2011 and SAP NetWeaver 7.4 have been aligned to a great extent. Although AS ABAP is fully supported as a development platform in SAP NetWeaver 7.4, we recommend using the enhancement packages for SAP NetWeaver 7.0 for ABAP development.</p> <p>For information about the enhancement package availability, see http://support.sap.com/releasesstrategy.</p>	
Developing, Configuring, and Adapting Applications: Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications	Not described as a separate use case in SAP NetWeaver 7.4, part of AS Java and DI installation.	
<p>Developing, Configuring, and Adapting Applications:</p> <p>Developing Mobile Applications for Occasional Connection</p>	Mobilizing Business Processes	Upgrade of Scenarios Based on SAP NetWeaver Mobile [page 70]
<p>Developing, Configuring, and Adapting Applications:</p> <p>Creating Portal Applications Using PDK for .NET</p>	Integrating and Self Servicing Content with SAP Enterprise Portal	Upgrade of Scenarios Based on SAP Enterprise Portal [page 53]
SAP NetWeaver Operations	The Adaptive Computing Controller which was part of the SAP NetWeaver Operations IT scenarios, is delivered as a separate product.	For more information about the Adaptive Computing Controller, see SAP Community Network at http://scn.sap.com/docs/DOC-8646 .

SAP NetWeaver 7.0 - IT Scenarios	SAP NetWeaver 7.4 - Use Cases	More Information
Software Life-Cycle Management	No separate use case described for SAP NetWeaver 7.4; lifecycle management capabilities of SAP NetWeaver are part of every installation.	
Mobilizing Business Processes	Mobilizing Business Processes.	Upgrade of Scenarios Based on SAP NetWeaver Mobile [page 70]
Authentication and Single Sign-On	No separate use case defined in SAP NetWeaver 7.4. For information about authentication and single sign-on, see SAP Help Portal at http://help.sap.com/nw74 ▶ <i>Application Help</i> ▶ <i>Function-Oriented View</i> ▶ <i>Security</i> ▶ <i>User Authentication and Single Sign-On</i> ▶	
Integrated User and Access Management	No separate use case defined in SAP NetWeaver 7.4. For information about Integrated user and access management, see SAP Library at http://help.sap.com/nw74 ▶ <i>Application Help</i> ▶ <i>Function-Oriented View</i> ▶ <i>Security</i> ▶ <i>Identity Management</i> ▶	

Changes in Usage Types

Note

Product Instance replaces Usage Type as of SAP NW 7.31

The term “product instance” replaces the terms “usage type” and “technical usage” for SAP systems based on SAP NetWeaver 7.3 including enhancement package 1 and higher. For more information, see SAP Note [1877731](#) . Note that there is no terminology change for older releases and all mentioned terms can be used as synonyms.

Compared to SAP NetWeaver 7.0, some additional product instances are available with SAP NetWeaver 7.4. For example, SAP NetWeaver Composition Environment has been integrated into the SAP NetWeaver platform.

When you upgrade your SAP NetWeaver 7.0 systems, the source release usage types are mapped to the corresponding target release product instances. The following table shows which product instances will be in your system after an upgrade to SAP enhancement package for NetWeaver 7.3 depending on the source release usage types.

Table 11:

SAP NetWeaver 7.0 - Usage Types	SAP NetWeaver 7.4 - Product Instances
Application Server Java	<ul style="list-style-type: none"> • Application Server Java (BASIC) • Application Server Java Extensions (AS) • NW Product Description (NW-MODEL) • Adobe Document Services (ADOBE) • Composite Application Framework (CE-APPS)
Process Integration	<ul style="list-style-type: none"> • Process Integration (PI) • Advanced Adapter Engine (PI-AF) • Enterprise Service Repository (ESR)
Development Infrastructure	<ul style="list-style-type: none"> • Development Infrastructure (DI)
Enterprise Portal	<ul style="list-style-type: none"> • Enterprise Portal (EP) • Composition Environment (COMP-ENV)
Enterprise Portal Core	<ul style="list-style-type: none"> • EP Core – Application Portal (EPC) • Guided Procedures (CE-PROCESS)
BI Java	<ul style="list-style-type: none"> • BI Java (BI)

2.8 Transition from SAP NetWeaver PI 7.1

Use Case

The SOA-Based Integration use case has been renamed to *Building Integration Scenarios*.

Software Units

Compared to SAP NetWeaver 7.1, some additional product instances are available with SAP NetWeaver 7.4, for example, SAP NetWeaver Composition Environment has been integrated into the SAP NetWeaver platform. The following table shows which product instances will be in your system after the upgrade.

Table 12:


SAP NetWeaver Process Integration 7.1	SAP NetWeaver 7.4
Process Integration (PI)	<ul style="list-style-type: none"> • Process Integration (PI) • Advanced Adapter Engine (PI-AF) • Enterprise Services Repository (ESR)

SAP NetWeaver Process Integration 7.1	SAP NetWeaver 7.4
Application Server Java	<ul style="list-style-type: none"> • Application Server Java (BASIC) • AS Java Extensions (AS) • Adobe Document Services (ADOBE) • Composite Application Framework (CE-APPS) • NW Product Description (NW MODEL)

For more information, see [Upgrade of Scenarios Based on SAP Process Integration \[page 61\]](#).

Note

Product Instance replaces Usage Type as of SAP NW 7.31

The term “product instance” replaces the terms “usage type” and “technical usage” for SAP systems based on SAP NetWeaver 7.3 including enhancement package 1 and higher. For more information, see SAP Note [1877731](#) . Note that there is no terminology change for older releases and all mentioned terms can be used as synonyms.

2.9 Transition from SAP NetWeaver Mobile 7.1

In comparison to SAP NetWeaver Mobile 7.1, SAP NetWeaver Mobile is available as an add-on technology solution for SAP NetWeaver as of SAP enhancement package 1 for NetWeaver 7.3. You install SAP NetWeaver Mobile separately on top of an Application Server ABAP system, and you perform the related configuration and set up tasks after the installation.

The functional scope of SAP NetWeaver Mobile 7.1 and SAP NetWeaver Mobile 7.1 including enhancement package 1 is covered by the [Mobilizing Business Processes](#) use case of SAP NetWeaver 7.4.

For more information, see [Upgrade of Scenarios Based on SAP NetWeaver Mobile \[page 70\]](#).

2.10 Transition from SAP NetWeaver Composition Environment 7.1 and 7.2

SAP NetWeaver Composition Environment has been integrated into the SAP NetWeaver platform. The functional scope is covered by the use case [Building Composite Applications](#) including the capabilities [Business Rules Management](#), [Process Composition](#), [Java Development and SOA Infrastructure](#).


Compared to SAP NetWeaver Composition Environment 7.1 and 7.1 including enhancement package 1, SAP NetWeaver 7.4 includes a different set of product instances. When you upgrade system to SAP NetWeaver 7.4, the source release usage types are mapped to the target release product instances and then the system is upgraded accordingly.

SAP NetWeaver Composition Environment 7.2 and SAP NetWeaver 7.4 have the same usage type structure, so there will be no changes when you upgrade your system except of the removal of the CE-Voice product instance.

For more information, see <http://help.sap.com/nw74> ► [Application Help](#) ► [Function-Oriented View](#) ► [Composition Environment](#) ► [Compatibility and Removed Usage Types](#) ►

Note

Product Instance replaces Usage Type as of SAP NW 7.31

The term “product instance” replaces the terms “usage type” and “technical usage” for SAP systems based on SAP NetWeaver 7.3 including enhancement package 1 and higher. For more information, see SAP Note [1877731](#) . Note that there is no terminology change for older releases and all mentioned terms can be used as synonyms.

The following tables show the mapping of usage types SAP NetWeaver Composition Environment 7.1 and 7.1 including enhancement package 1, respectively to the product instances of SAP NetWeaver 7.4.

Source Release SAP NetWeaver Composition Environment 7.1

Table 13:

SAP NetWeaver Composition Environment 7.1	SAP NetWeaver 7.4
Basic (BASIC)	<ul style="list-style-type: none">• Application Server Java (BASIC)• Demo Applications (BASIC-RA)• CE Product Description (CE-MODEL)*
Composite Applications (CE-APPS)	Composite Application Framework (CE-APPS)
Composite Views (CE-VIEWS)	Composition Environment Platform (COMP-ENV)
Composite Voice (CE-VOICE)	Removed**
Composite Process (CE-PROCESS)	Guided Procedures (CE-PROCESS)*
Adobe Print Services (CE-ADOBE)	Adobe Document Services (ADOBE)
IDE Update Site (IDE-Update-Site)	NWDS Update Site (IDE-Update-Site)*
Enterprise Service Repository (ESR)	Enterprise Service Repository (ESR)

Source Release SAP NetWeaver Composition Environment 7.1 Including enhancement package 1

Table 14:

SAP NetWeaver Composition Environment 7.1 Including enhancement package 1	SAP NetWeaver 7.4
Application Server Java (BASIC)	<ul style="list-style-type: none">• Application Server Java (BASIC)• Demo Applications (BASIC-RA)• CE Product Description (CE-MODEL)*
Composite Applications (CE-APPS)	Composite Application Framework (CE-APPS)
Composite Views (CE-VIEWS)	Composition Environment Platform (COMP-ENV)

SAP NetWeaver Composition Environment 7.1 Including enhancement package 1	SAP NetWeaver 7.4
Composite Voice (CE-VOICE)	Removed**
Guided Procedures (CE-PROCESS)	Guided Procedures (CE-PROCESS)*
Adobe Document Services (CE-ADOBE)	Adobe Document Services (ADOBE)
IDE Update Site (IDE-Update-Site)	NWDS Update Site (IDE-Update-Site)*
Enterprise Service Repository (ESR)	Enterprise Service Repository (ESR)
Business Process Management (BPEM)	Business Process Management and Business Rules Management (BPM)
BPM Portal Integration (BPEM-PP-Integration)	Business Process Management and Business Rules Management (BPM)
NW Development Infrastructure (NWDI)	Development Infrastructure (DI)

* Note that CE Product Description, Guided Procedures, and NWDS Update Site are only provided for compatibility reasons. These product instances are not included in a new installation of SAP NetWeaver 7.4. You can install them directly from SAP Service Marketplace on top of a new SAP NetWeaver 7.4 installation. Guided Procedures and NWDS Update Site have been replaced by newer technologies. CE Product Description illustrates the usage of SAP NetWeaver Composition Environment for previous releases, so it is not relevant for SAP NetWeaver 7.4.

For more information, see [Upgrade of Scenarios Based on SAP NetWeaver Composition Environment \[page 68\]](#)

** The Composite Voice (CE-VOICE) product instance is removed with SAP NetWeaver 7.4. For more information, see <http://help.sap.com/nw74> ► *Application Help* ► *Function-Oriented View* ► *Composition Environment* ► *Compatibility and Removed Usage Types* ►.

2.11 Transition from SAP NetWeaver 7.3 and SAP EHP 1 for NetWeaver 7.3

Use

SAP NetWeaver 7.4 is the compatible successor release of SAP NetWeaver 7.3 and SAP enhancement package 1 for NetWeaver 7.3. From a technical perspective, SAP NetWeaver 7.4 is positioned as an enhancement package and follows all enhancement package rules with respect to compatibility and consumption.

SAP NetWeaver 7.4 is deployed on premise and serves as foundation for the Business Suite (both Business Suite i2013 and Business Suite on SAP HANA). Therefore, this release was designed to provide optimized access to SAP HANA and to leverage the consumption of native SAP HANA artifacts such as analytical views and database procedures.

Besides the optimization for SAP HANA, SAP NetWeaver 7.4 offers a wide range of additional capabilities compared to NW 73/731. The following list emphasizes the highlights of the 7.4 release:

- It comes with a fully integrated set of ABAP development tools for Eclipse to increase developer productivity, and it offers an integrated development framework for the emerging HTML5 standard.
- The user interface has been harmonized with SAP NetWeaver Business Client 4.0 that offers a completely new user experience based on tabbed browsing, incremental search and content adaptation exposed in the contextual Side Panel.
- It delivers flexible modeling capabilities for BW on SAP HANA. It lowers TCO and dramatically increases performance and flexibility of SAP HANA deployments with integrated lifecycle management capabilities.
- It provides backend connectivity to consumers of the OData protocol with embedded Gateway capabilities.
- It delivers a new Portal experience with customized access to mobile users.
- It facilitates unified Process Orchestration features running on a simple Java stack eliminating the need for dual stack deployments. Integration scenarios can be monitored via SAP Solution Manager.
- It fully enables single sign-on and identity federation.

More Information

For a complete list of all features and changes, see:






- SAP NetWeaver 7.4 library at <http://help.sap.com/nw74>  *What's new – Release Notes.* 
- SAP Community Network at <http://scn.sap.com/docs/DOC-35002> 

3 Planning and Preparation

3.1 Major Planning Steps and Related Documentation

During an implementation project, you have to take into account many aspects and to take various decisions. The major planning steps of this process are outlined below.

Table 15:

Step	Step Description	Further Information
Scope and Requirements	You determine the scope of your SAP NetWeaver implementation.	For more information, see SAP NetWeaver Use Cases [page 10] .
Installable Software Units	You determine which installable software units (that is, systems with product instances, standalone engines, optional standalone units and clients) are required for the use cases.	For more information, see the Mapping of Use Cases to Installable Software Units [page 13] section.
Landscape Planning	You determine the system landscape and consider the landscape-relevant aspects concerning your required use case.	See Upgrading Procedures for NetWeaver Key Areas [page 53] .
Hardware & Software Prerequisites	Use the <i>Product Availability Matrix</i> (PAM) to check which platforms (operating systems, databases, browsers) are supported for your SAP NetWeaver components.	http://support.sap.com/pam 
	Check the database dependencies and the recommended minimum database versions.	See SAP Notes 1951491  and 1914052  .
	Check which hardware sizing is required for your SAP NetWeaver release.	http://service.sap.com/sizing 
Release Restrictions	Check SAP Notes for any release restrictions.	Regarding SAP NetWeaver 7.4 release restrictions, see SAP Note 1730102  .

Step	Step Description	Further Information
SAP Solution Manager Prerequisites	<p>We recommend to always use the latest SAP Solution Manager release.</p> <p>Make sure that your SAP Solution Manager system has the required support package level and content.</p> <p>Check if you need to do an update or upgrade of your SAP Solution Manager application or content.</p> <p>After an upgrade or update to the latest SAP Solution Manager release, you need to do follow-up actions described in the section Software Change Management of the Solution Operations Guide.</p>	<ul style="list-style-type: none"> • See SAP Note 631042 for information about the Release strategy for Implementation Content (ST-ICO). • See SAP Note 781448 for information about Support Package levels of SAP Solution Manager installations and upgrades. • The Solution Operations Guide for SAP Solution Manager is available at: http://service.sap.com/instguides SAP Components SAP Solution Manager > <Release> Operations.

3.2 Preparatory Activities

From a technical point of view, either an upgrade or an enhancement package installation will be carried out to achieve the target release SAP NetWeaver 7.3 including enhancement package 1, depending on the technology and the start release. If the start release is SAP NetWeaver 7.1 or higher and you use a dual-stack system or an AS Java system, then it is handled as an enhancement package installation. For all other start releases and for AS ABAP systems in general, it is handled on a technical level as an upgrade.

To perform both options, you use the Software Update Manager (SUM). General planning, preparation and follow-up activities as well as the handling of the Software Update Manager (SUM) are described in the document *Update Guide – Update of SAP Systems Using the Software Update Manager <version>* available at <http://service.sap.com/maintenancenw74> or <http://support.sap.com/sltoolset> [System Maintenance](#) [Software Update Manager \(SUM\) <version>](#) [Guides for SUM <version>](#).

In addition, you have to perform preparations and follow-up activities specific to your product instance. These specific actions are described in this guide in the following sections.

Caution

You have to perform both the general preparation activities as well as the usage-type-specific preparations before you can start the Software Update Manager. Make sure you start with these preparations in good time. You can also consider performing these preparations in parallel to the preparation of SAP Solution Manager and the download of the required software packages and the stack configuration file.

SAP Kernel Update

Make sure that you apply the latest Kernel on your target system as described in the SUM guide *Update Guide – Update of SAP Systems Using the Software Update Manager <version>* available at <http://service.sap.com/>

[maintenancenw74](#) or <http://support.sap.com/sltoolset> ► [System Maintenance](#) ► [Software Update Manager \(SUM\) <version>](#) ► [Guides for SUM <version>](#) ►.

Support Package Stack (SPS)

As SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend always installing the latest available Support Package Stack.

Note

Support Releases and Support Packages

If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately.

SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.

SAP Notes for Preparing the Update or Upgrade

To prepare and perform the update of your SAP system, you require some additional information in a range of SAP Notes in SAP Support Portal <http://service.sap.com/notes>.

You must read some of the notes, **before** you start with the preparations. Besides the central Software Update Manager Note, there are separate SAP Notes for the database-specific sections. You must request the following SAP Notes from SAP Support Portal before you start the update procedure:

- Central Software Update Manager Note
- SAP Note for your database



During the upgrade, you may need information from some additional database-specific and database-independent SAP Notes.

You find a list of these relevant SAP Notes in the following two guides, which you use in parallel considering your specific combination of operating system, database and technology:


- *Update Guide – Update of SAP Systems Using the Software Update Manager <version>* available at <http://support.sap.com/sltoolset> ► [System Maintenance](#) ► [Software Update Manager \(SUM\) <version>](#) ► [Guides for SUM <version>](#) ►
- *Upgrade and Update Guide - SAP NetWeaver 7.4* available on the SAP Service Marketplace at <http://service.sap.com/maintenancenw74> ► [Upgrade - SAP NetWeaver Systems](#) ►

The following SAP Notes provide you with important information for your SAP NetWeaver implementation project.

Table 16: List of Important SAP NetWeaver Notes




SAP Note Number	Title	Description
1730102 	Release Restrictions for SAP NetWeaver 7.4	Some restrictions apply to the productive use of SAP NetWeaver 7.4. These are documented in this SAP Note.
1751237 	Add. info about the update/upgrade to SAP (incl. SPs and SRs)	This SAP Note describes problems that may occur when you upgrade or update your system and provides you with information on how to solve them.

Note

Make sure that you have the up-to-date version of each SAP Note, which you can find on SAP Service Marketplace at <http://service.sap.com/notes> .

SAP Solution Manager Update

To prepare and perform the update of your SAP system, make sure that you use the latest available SAP Solution Manager version. For an update to this SAP Solution Manager version, refer to the *Master Guide — SAP Solution Manager <release>*. After you have performed the upgrade, follow the steps described in the *SAP Solution Manager <release> Configuration Guide*.


Both guides are available on SAP Service Marketplace, at <http://service.sap.com/instguides>  **SAP Components**  **SAP Solution Manager Release <release>** .

3.3 Preparing SAP Solution Manager

3.3.1 Preparing SAP Solution Manager

To set up your SAP Solution Manager application, perform the following steps:

1. Maintain system data in the SAP System Landscape Directory (SLD).
2. Transfer system data from SLD to the SAP Solution Manager.
3. Complete system descriptions in SAP Solution Manager System Landscape (SMSY) or Landscape Management Database (LMDB).
4. Check the landscape data with the landscape verification function.
5. Create a maintenance transaction in the SAP Solution Manager Maintenance Optimizer to calculate support packages and packages for product instances.

These steps are described in the Maintenance Planning Guide, which is available at <http://support.sap.com/mopz>  (section *Guides*).

See the SAP Community Network (SCN) for more information about

- System Landscape Directory at <http://scn.sap.com/docs/DOC-8042>
- Landscape Verification at <http://scn.sap.com/docs/DOC-8793>

SAP Solution Manager Maintenance Optimizer (MOPZ)

The SAP Solution Manager Maintenance Optimizer plays a central role in the upgrade process. It is mandatory to use the Maintenance Optimizer for the calculation of the required upgrade packages, enhancement packages and Support Package stacks and for the creation of the stack configuration file (xml file). The upgrade program reads this stack configuration file and uses it as an input file for the upgrade.

The following sections explain how to prepare SAP Solution Manager and the Maintenance Optimizer:

- [SAP Solution Manager Update \[page 42\]](#)
- [Installation of Landscape Verification 1.0 for SAP Solution Manager \[page 43\]](#) (required for SAP Solution Manager releases 7.0 to 7.1 SP04)
- [Configuration of the Maintenance Optimizer \[page 43\]](#)
- [Maintaining System Landscape Information \[page 44\]](#)

3.3.2 SAP Solution Manager Update











We recommend that you use the latest available Solution Manager version, or that you always update your SAP Solution Manager to the latest Support Package stack.

Make sure that you run the guided procedure `SOLMAN_SETUP` after every installation or update of SAP Solution Manager and that it completes successfully.

Table 17: Checking SAP Solution Manager Prerequisites

Step Description	Documentation
<ol style="list-style-type: none">1. Make sure that your SAP Solution Manager system has the required support package level and content.2. Check if you need to do an update or upgrade of your SAP Solution Manager application or content.3. After an upgrade or update to the latest SAP Solution Manager release, you need to perform follow-up actions described in the section Software Change Management of the Solution Operations Guide	<ul style="list-style-type: none">• See SAP Note 608277 for information about SAP Solution Manager Content add-ons.• See SAP Note 781448 for information about Support Package levels of SAP Solution Manager installations and upgrades.• The Solution Operations Guide for SAP Solution Manager is available at: http://service.sap.com/instguides SAP Components > SAP Solution Manager > <Release> > Operations

Table 18: Information about SAP Solution Manager Update or Upgrade

Related Documents	Available at...
<p><i>Upgrade Guide SAP Solution Manager <Release></i></p> <p>Describes the update or upgrade to this release. You can include the installation of the required Support Package stack in the update procedure.</p>	<p>http://service.sap.com/instguides  SAP Components </p> <p>SAP Solution Manager  <Release>  Upgrade  -</p>
<p><i>Solution Operations Guide – SAP Solution Manager <Release> —> section Software Change Management.</i></p> <p>Describes the actions required after the SAP Solution Manager upgrade or update.</p>	<p>http://service.sap.com/instguides  SAP Components </p> <p>SAP Solution Manager  <Release>  Operations </p>

3.3.3 Installation of Landscape Verification 1.0 for SAP Solution Manager

Landscape verification is required to enable the Maintenance Optimizer to create a proper stack configuration XML file for the correct product constellation.

For the SAP Solution Manager releases 7.0 to 7.1 SP04, you install the Landscape Verification 1.0 as an add-on.


See SAP Note [1468605](#)  for information about the installation.

As of SAP Solution Manager 7.1 SP05, the verification function is integrated in the Landscape Management Database (LMDB) of SAP Solution Manager. You can run the verification directly from the product system editor to check the consistency of your system descriptions.

3.3.4 Configuration of the Maintenance Optimizer

If you have not already done so, configure the Maintenance Optimizer. For a list of configuration tasks, see the Maintenance Optimizer configuration guide.

Table 19:

Related Documents	Available at...
<p><i>Maintenance Optimizer Configuration Guide</i></p>	<p>http://support.sap.com/mopz </p> <p>(section Guides)</p>

3.3.5 Maintaining System Landscape Information

Use


The Maintenance Optimizer relies on up-to-date information about your system landscape. Therefore, it is crucial that this data is correctly maintained in the SAP Solution Manager System Landscape (transaction SMSY) or Landscape Management Database (LMDB). If you have already maintained the system landscape data, check carefully if this data is correct.

Proceed in the following order:

1. If you have not already done so, capture the system data using the System Landscape Directory (SLD).
2. Maintain the system data in SAP Solution Manager.
3. Run the landscape verification to check the system landscape data.









Procedure














Capturing System Data Using SLD

1. Register all systems that you want to update in your SLD. In case of a dual-stack system, you have to register both the ABAP stack and the Java stack.
Depending on your applications, it can either be the SLD of your SAP Solution Manager system (if there are no dependencies of production runtime systems), or you have to separate SLD systems for production and non-production use (default recommendation).
If you use a central runtime SLD, distribute the data of all technical systems that are registered in the central SLD, from the central SLD to the development SLDs and to the local SLD in SAP Solution Manager.
For more information about the SLD topology options and synchronization, see the *Planning Guide – System Landscape Directory* available at <http://scn.sap.com/docs/DOC-8042> 

To register Java systems, you use the Visual Administrator, or, as of SAP NetWeaver 7.1, the NetWeaver Administrator. To register the ABAP system, you use transaction RZ70. For more information about the registration of systems, see the SAP Library for your source release:




















Table 20:

Release	SAP Library Paths
SAP NetWeaver 7.0 and SAP NetWeaver 7.0 including EHP 1 and SAP NetWeaver 7.0 including EHP 2	http://help.sap.com/nw70  Application Help > Function-Oriented View > SAP NetWeaver by Key Capability > Solution Lifecycle Management by Key Capability > Software Life Cycle Management > System Landscape Directory > Configuring Systems to Connect to SLD 
	i Note Instead of the alias /nw70, you can use the aliases /nw701 or /nw702 accordingly.
SAP NetWeaver 7.3, SAP enhancement package 1 for NetWeaver 7.3	http://help.sap.com/nw73  Application Help > Function-Oriented View > Solution Lifecycle Management > Configuring, Working with and Administering System Landscape Directory > System Landscape Directory > Connecting Systems to the SLD 
	i Note Instead of the alias /nw73, you can use the alias /nw731 accordingly.
SAP NetWeaver Process Integration 7.1 including EHP1	http://help.sap.com/nwpi71  Application Help > Function-Oriented View > Application Server Infrastructure > Configuring, Working with and Administering System Landscape Directory > Configuring Systems to Connect to the SLD 
SAP NetWeaver Process Integration 7.1	http://help.sap.com/nwpi71  System Administration and Maintenance Information > Technical Operations for SAP NetWeaver > General Administration Tasks > Software Life-Cycle Management > Configuring, Working with and Administering System Landscape Directory > Configuring Systems to Connect to the SLD 

Release	SAP Library Paths
SAP NetWeaver Composition Environment 7.1 and SAP NetWeaver Composition Environment 7.1 EHP1	<p>Connecting the system to the SLD is part of the initial system configuration as described at:</p> <p>http://help.sap.com/nwce71  Application Help  Administrator's Guide  Configuration of SAP NetWeaver CE  Initial System Configuration  Configuring System Landscape Directory </p> <div style="background-color: #fff9c4; padding: 10px; margin-top: 10px;"> <p>i Note</p> <p>Instead of the alias /nwce71, you can use the alias /nwce711 accordingly.</p> </div>
SAP NetWeaver Composition Environment 7.2	<p>Connecting the system to the SLD is part of the initial system configuration as described at:</p> <p>http://help.sap.com/nwce72  Application Help  Administrator's Guide  Configuration of SAP NetWeaver CE  Configuring Mandatory Components  Configuring Application Server Java  Mandatory Configuration Tasks  Configuring System Landscape Directory </p>

If the registration was successful, both the ABAP system and the Java system appear in the SLD under *Technical Systems*.

2. Transfer the data from the SLD to the SAP Solution Manager:

- For SAP Solution Manager 7.0, schedule SLD update jobs in the SAP Solution Manager transaction SMSY_SETUP.
For more information, see the SAP Solution Manager Library at <http://help.sap.com/solutionmanager70>  [SAP Solution Manager 7.0 EHP1 SP26](#)  [SAP Library](#)  [Basic Settings](#)  [Solution Manager System Landscape](#)  [Set-Up Automatic Data Capture for System Landscape](#) 
 - For SAP Solution Manager 7.1, setup the SLD connection under  [SAP Solution Manager Configuration \(transaction SOLMAN_SETUP\)](#)  [System Preparation](#)  [Prepare Landscape Description](#)  [Select SLD and Set Up LMDB](#) 
- For more information, see the SAP Solution Manager Library at <http://help.sap.com/solutionmanager71>  [Application Help](#)  [SAP Solution Manager 7.1 SP<version>](#)  [SAP Solution Manager Operations](#)  [Landscape Management Database \(LMDB\)](#)  [Managing System Landscape Information](#)  [Set Up the Landscape Management Infrastructure](#)  [Connect LMDB to System Landscape Directory \(SLD\)](#) 

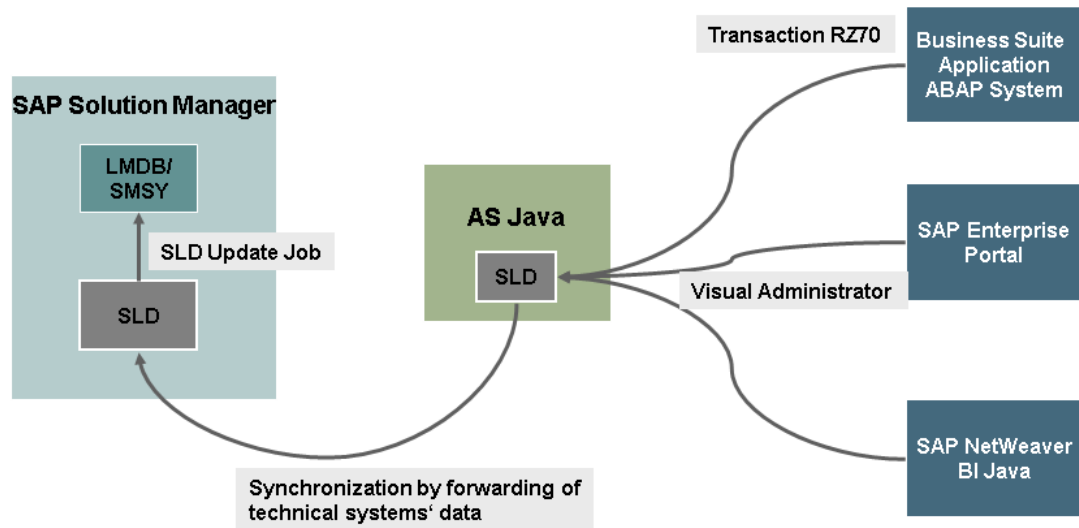


Figure 4: Synchronization of central SLD with local SLD in SAP Solution Manager

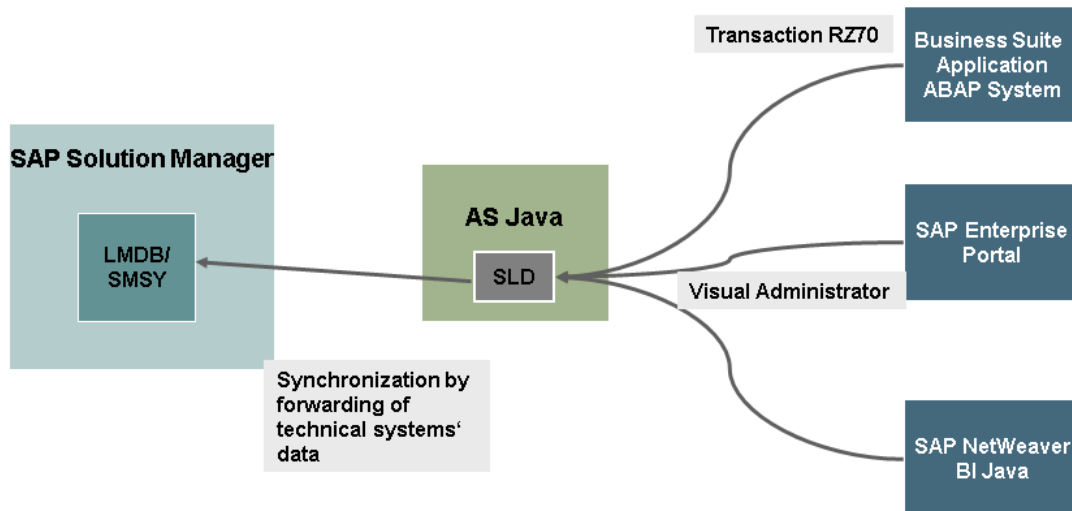


Figure 5: Direct synchronization of central SLD with landscape data storage in SAP Solution Manager (standard as of SAP Solution Manager 7.1)

Note

For more information about the synchronization of central SLD, see

- SLD Planning Guide at <http://scn.sap.com/docs/DOC-14151>
- Information in the SAP Solution Manager Library at <http://help.sap.com/solutionmanager71>
 ► Application Help ► SAP Library SAP Solution Manager 7.1 SP05 (or higher) ► SAP Solution Manager Operations ► Landscape Management Database (LMDB): ► Managing System Landscape Information

Running the Landscape Verification 1.0 in SAP Solution Manager 7.0 to 7.1 SP04

Running the landscape verification 1.0 in SAP Solution Manager 7.0 to 7.1 SP04 is an optional step. This tool checks how your systems are maintained in the SAP Solution Manager system. If it detects any inconsistencies, you are prompted to correct existing entries or enter missing data. The tool provides you with information about maintaining the data.

To start the landscape verification, call transaction `LVSM` in SAP Solution Manager.

For more information about the landscape verification, choose the [Help](#) link from within the application, and the documentation of landscape verification at <http://scn.sap.com/docs/DOC-8793>.

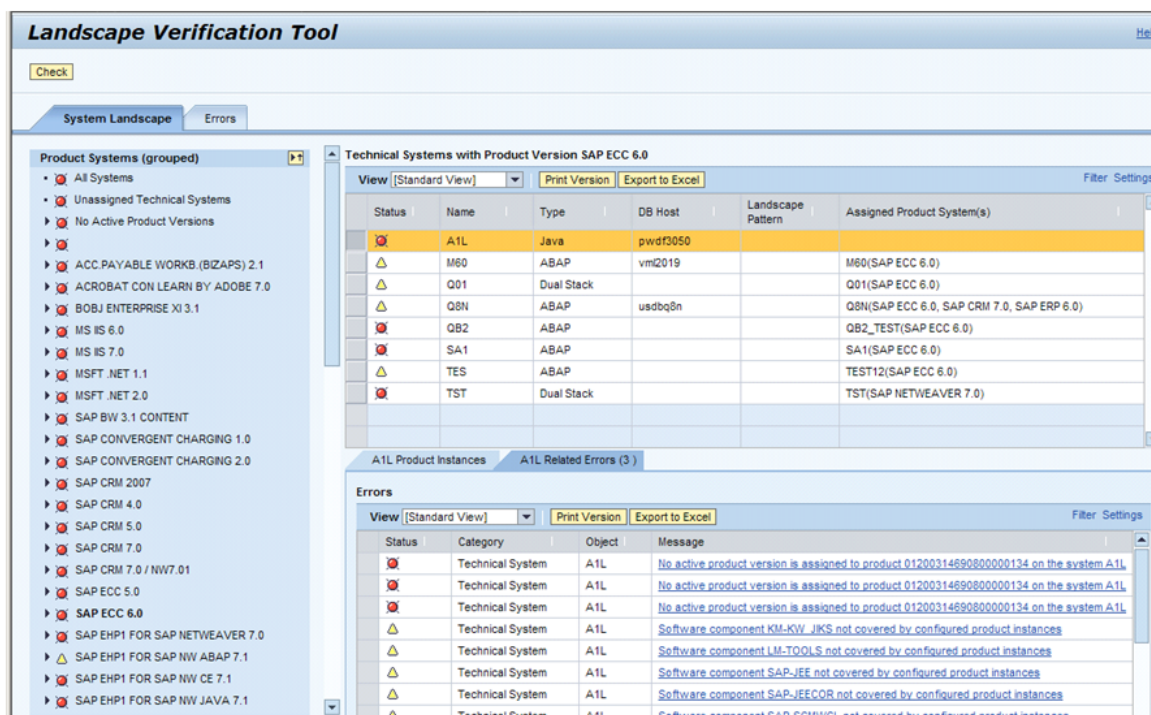


Figure 6: Landscape Verification 1.0

Running the Landscape Verification as of SAP Solution Manager 7.1 SP05

As of SAP Solution Manager 7.1 SP05, the landscape verification function is integrated in the product system editor of the *Landscape Management Database* (LMDB). You do not have to install an add-on any longer.

To start the landscape verification, start transaction `LMDB`, select a product system in edit mode and choose the *Verification* step in the navigation tree.

For more information, see the SAP Solution Manager Library at <http://help.sap.com/solutionmanager71>

► Application Help ► SAP Library SAP Solution Manager 7.1 SP05 (or higher) ► SAP Solution Manager Operations ► Landscape Management Database (LMDB): ► Managing System Landscape Information ► Manage Logical Landscape Information ► Execute Verification Checks ►.

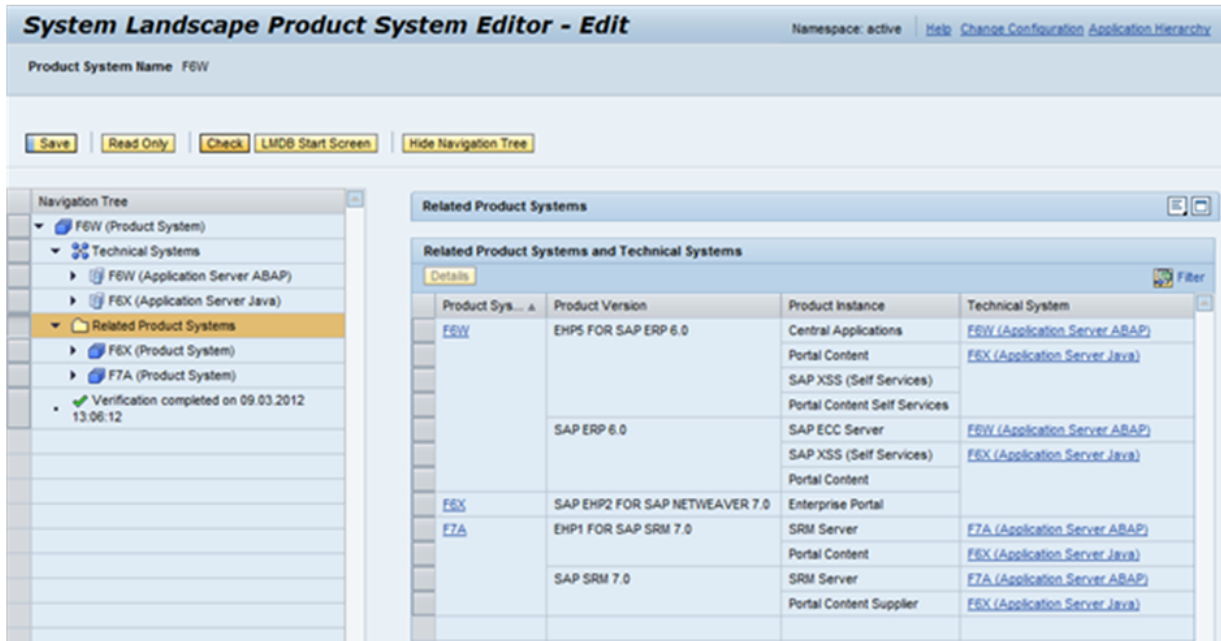


Figure 7: Landscape verification in the product system editor of the LMDB

Maintaining System Data

When your product systems are known in SAP Solution Manager, you have to check and maintain the system data, and add your system to a logical component and to a solution.

To manage logical components in SAP Solution Manager 7.0 to 7.1 SP08, you proceed as follows:

1. In transaction SMSY, choose [System Groups and Logical Components](#).
2. To create a logical component, choose [Create New Logical Component](#) in the context menu of [Logical Components](#). Enter your system data. The name of your logical component must start with "Z...".
3. Assign the related technical systems to the logical component.
4. In the [Current System Assignments](#) of the newly created logical component, add your systems with the appropriate roles (such as [Development System](#) or [Production System](#)).

For more information, see the SAP Solution Manager Library at <http://help.sap.com/solutionmanager71> [Application Help](#) [SAP Library SAP Solution Manager 7.1 SP05 \(or higher\)](#) [SAP Solution Manager Operations](#) [Landscape Management Database \(LMDB\)](#) [Managing System Landscape Information](#) [Manage Logical Landscape Information](#) [Edit Logical Components](#)

To manage logical components as of SAP Solution Manager 7.1 SP09, you proceed as follows:

1. To create and edit logical components, choose [SAP Solution Manager: Work Centers](#) [Solution Manager Administration](#) [Landscape](#) [Logical Components](#) .
2. Assign the related technical systems and the appropriate roles (such as Development System or Production System) to the logical component. You have the following options:
 1. Under [SAP Solution Manager Configuration](#) [Managed Systems Configuration](#) , you have to assign logical components to the technical systems registered in the LMDB. Select a technical system and choose [Configure System](#). Log messages tell you whether information is missing or inconsistent. These checks prepare a technical system so that it can be used for Early Watch Alerts, for example.

2. You can also start transaction `LMDB` and select a technical system from the *Technical Systems* tab. In the navigation tree, choose *Software* and *Assign to Logical Component*. For more information, see the documentation on the UI

For more information, see the SAP Solution Manager Library <http://help.sap.com/solutionmanager71>

► *Application Help* ► *SAP Library SAP Solution Manager 7.1 SP09 (or higher)* ► *SAP Solution Manager Operations* ► *Landscape Management Database (LMDB)* ► *Managing System Landscape Information* ► *Managing Logical Components* ►

To maintain system information in SAP Solution Manager 7.0 to 7.1 SP04, you proceed as follows:

1. In transaction `SMSY`, choose ► *Landscape Components* ► *Product System* ► *<System>* ►.
2. Check whether the product version is correct. The product version is displayed in the right pane below the name of your system.
3. Choose the *Selection of Product Instances* tab and check that everything that is installed in your system is flagged as *Relevant*. Make sure that no instance is marked as relevant that is not installed in your system, as this would lead to the installation of unwanted software components in your system.

Note

You can only select one ABAP instance as relevant. You have to flag further ABAP instances as *Also Installed in Relevant ABAP Product Instance*.

For more information about selecting the instances and required settings, see SAP Note [1344564](#) and SAP Note [1429764](#).

4. Optional: Add the product system to a solution.
It is no longer mandatory to create a solution and to add your product system to a solution. However, if you already have a solution, then add your product system to it. When you later create a maintenance transaction, you can select this solution and thus restrict the number of product systems displayed.
 1. Call transaction `SOLUTION_MANAGER` and create a solution, if it does not exist yet.
 2. Choose *Solution Landscape* and *Solution Landscape Maintenance*.
 3. Add your SAP system to the solution as follows:
 1. Change to edit mode.
 2. Place the cursor on a new line in the *Logical Component* column.
 3. Use the input help to select your system from the list (product, logical component).
 4. Choose *Complete System Data Replication*.
 5. Save your selection.

To maintain system information as of SAP Solution Manager 7.1 SP05, you proceed as follows:

1. In transaction `LMDB`, choose ► *Product Systems* ► *<System>* ► *Edit* ►.
2. In the navigation tree, choose *Technical Systems* to see which product instances of which product version of which technical systems are assigned to the product system.
3. Check, if the product version is correct.
4. To change the assignments, choose *Add* or *Edit Selected*.
5. We recommended that you start a verification run each time when you have changed an assignment. You can perform this in the *Verification* step of the navigation tree.

For more information, see the SAP Solution Manager Library at <http://help.sap.com/solutionmanager71>

► *Application Help* ► *SAP Library SAP Solution Manager 7.1 SP05* ► *SAP Solution Manager Operations* ►

[Landscape Management Database \(LMDB\)](#) › [Managing System Landscape Information](#) › [Manage Logical Landscape Information](#) › [Create Product System Information](#) ›

3.4 System Copy and Migration

Use

At several stages in the lifecycle of your SAP solution, you will face the requirement to perform a system copy or a migration. For example, SAP recommends that you perform a system copy to create test, demo and training systems. Also, if you need to change your operating system and/or database, you have to perform a migration of your SAP system.

For this, SAP is offering system copy and migration services that enable you to create consistent copies of your SAP systems, flexibly adapted to your needs - be it an SAP system distributed to several hosts, a high-availability system or a system on a rather exotic operating system/database combination.

More Information

- For an introduction into system copy and migration, see <http://scn.sap.com/docs/DOC-8324> in the SAP Community Network.
- System copy guides are available on SAP Service Marketplace at <http://service.sap.com/installnw74>.
- Alternatively, you can copy your system with a completely automated end-to-end framework available with the *SAP NetWeaver Landscape Virtualization Management <Release>, Enterprise Edition*. For more information, see the SAP Help Portal at <http://help.sap.com/nwlvmm>.

4 Upgrading, Configuration, and Follow-Up Activities

4.1 Upgrading Procedures for NetWeaver Key Areas

In the following you find an overview about the procedures with regard to the different key areas of SAP NetWeaver. For more information about the key areas, refer to [SAP NetWeaver Use Cases \[page 10\]](#).

4.1.1 Upgrade of Scenarios Based on SAP Enterprise Portal

Below you will find information about upgrading scenarios that are based on SAP Enterprise Portal. This section is relevant for you if you used one of the following scenarios:

- SAP NetWeaver 2004: SAP EP
- SAP NetWeaver 7.0:
 - Running an Enterprise Portal
 - Enterprise Knowledge Management: Content Integration and Management; Content Creation, Publication and Access
 - Enabling User Collaboration
 - Developing, Configuring and Adapting Applications: Creating Portal Applications Using PDK for .NET

As of SAP NetWeaver 7.3, the functional scope is covered by use case [Integrating and Self-Servicing Content with SAP Enterprise Portal](#). The following figure shows the software units which make up the use case.

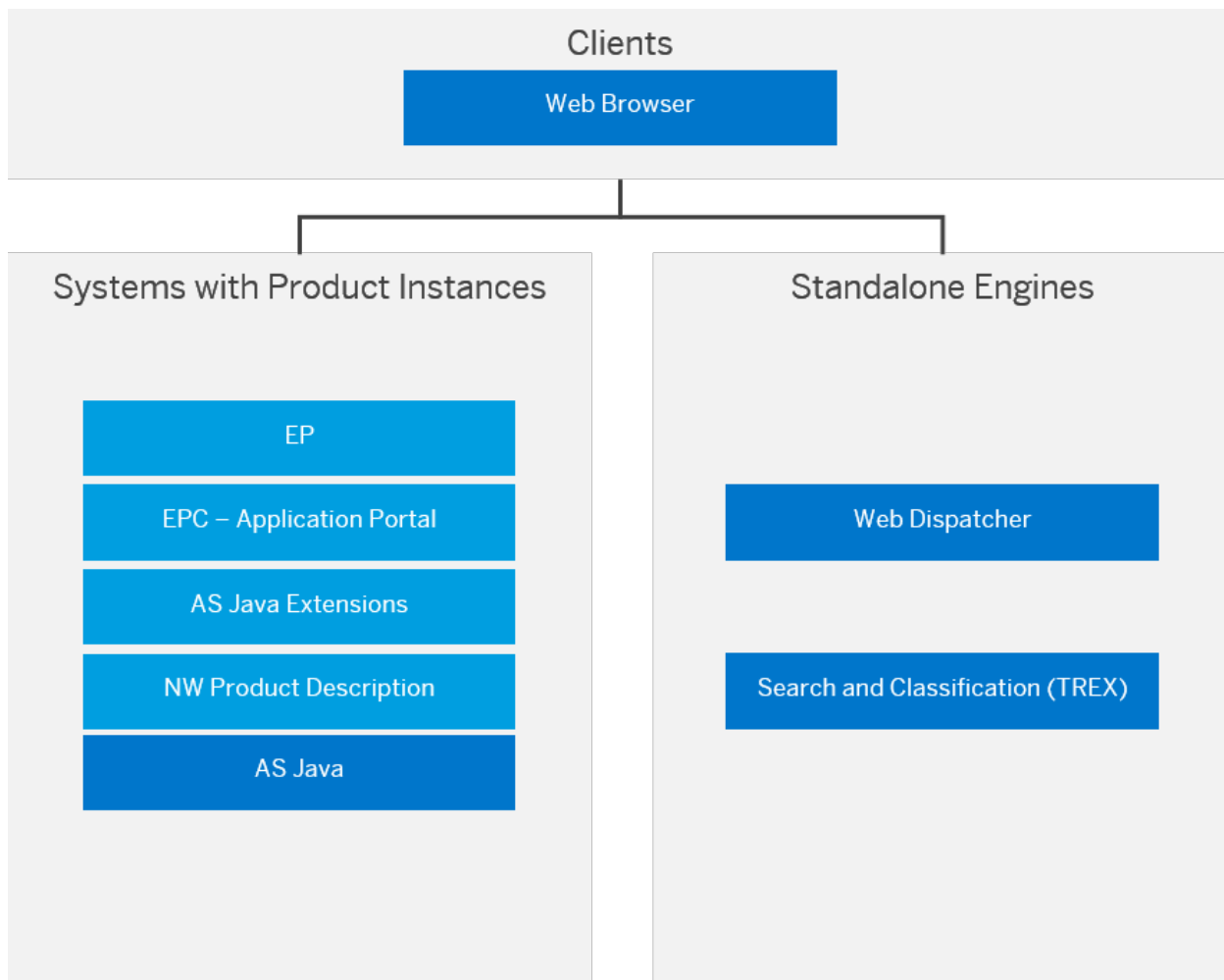


Figure 8: Integrating and Self-Servicing Content with SAP Enterprise Portal

i Note

SAP NetWeaver Application Server Java 7.4 SP03 or higher based on SAP HANA

As of SAP NetWeaver 7.4 SP03, the SAP HANA database supports Application Server Java and further product instances that are dependent on AS Java. For more information in terms of the implementation of SAP NetWeaver Application Server Java 7.4 based on SAP HANA database, see the *End-to-End Implementation Roadmap for SAP NetWeaver AS Java based on SAP HANA*.

This guide is available on the Service Marketplace at <http://service.sap.com/upgradenw74>  **Planning** .

4.1.1.1 Upgrade Sequence

The following table describes the sequence in which you have to perform the upgrade or installation steps.

i Note

For information about finding the referenced documentation, see section [Documentation References \[page 82\]](#).

Table 21:

No.	Action [Required Documentation]	Remarks / Subsequent Steps
1	<p>You upgrade SAP NetWeaver Portal 6.0 or SAP NetWeaver 7.0 Enterprise Portal.</p> <p>[<i>Update Guide – Update of SAP Systems Using Software Update Manager <version></i>]</p> <p>[<i>Upgrade and Update Guide - SAP NetWeaver 7.4 JAVA</i>]</p>	<p>As SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend that you always install the latest available Support Package stack.</p> <p>If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately.</p> <p>SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.</p>
2	<p>You upgrade the Portal Development Kit.</p> <p>[<i>Installation, Upgrade, and Configuration Guide – PDK for .NET</i>]</p>	
3	<p>If installed as a separate system: you upgrade the system with product instances AS Java and DI.</p> <p>[<i>Update Guide – Update of SAP Systems Using Software Update Manager <version></i>]</p> <p>[<i>Upgrade and Update Guide - SAP NetWeaver 7.4 JAVA</i>]</p>	

No.	Action [Required Documentation]	Remarks / Subsequent Steps
4	<p>You upgrade the standalone RTC application server.</p> <p>If you upgrade a standalone RTC application sharing server that is running on product instance AS Java, and which does not have product instance EPC installed, then the system contains the product instances EP Core – Application Portal and EP after the upgrade. The required software is calculated by the SAP Solution Manager Maintenance Optimizer and installed during the upgrade.</p> <p>[Update Guide – Update of SAP Systems Using Software Update Manager <version>]</p> <p>[Upgrade and Update Guide - SAP NetWeaver 7.4 JAVA]</p>	
5	<p>You upgrade the Forums Application.</p> <p>[SAP Note 1049553 📄]</p>	
6	<p>You upgrade SAP NetWeaver Search and Classification (TREX).</p> <p>[Upgrade Guide – TREX 6.1 to SAP NetWeaver 7.0 TREX (TREX 7.0)]</p> <p>[Upgrade Guide – TREX 7.0 to SAP NetWeaver 7.1 TREX (TREX 7.1)]</p>	
7	<p>Perform the delta configuration [page 80].</p>	

4.1.2 Upgrade of Scenarios Based on SAP Business Warehouse

Below you will find information about upgrading scenarios that are based on SAP Business Warehouse. This section is relevant for you, if you used one of the following scenarios:

- SAP NetWeaver 2004: SAP Business Information Warehouse; BI Information Broadcasting
- SAP NetWeaver 7.0: Business Planning and Analytical Services; Enterprise Reporting, Query, and Analysis; Enterprise Data Warehousing

As of SAP NetWeaver 7.3, the functional scope is covered by the use case [Data Warehousing](#). The following figure shows the software units that make up the use case.

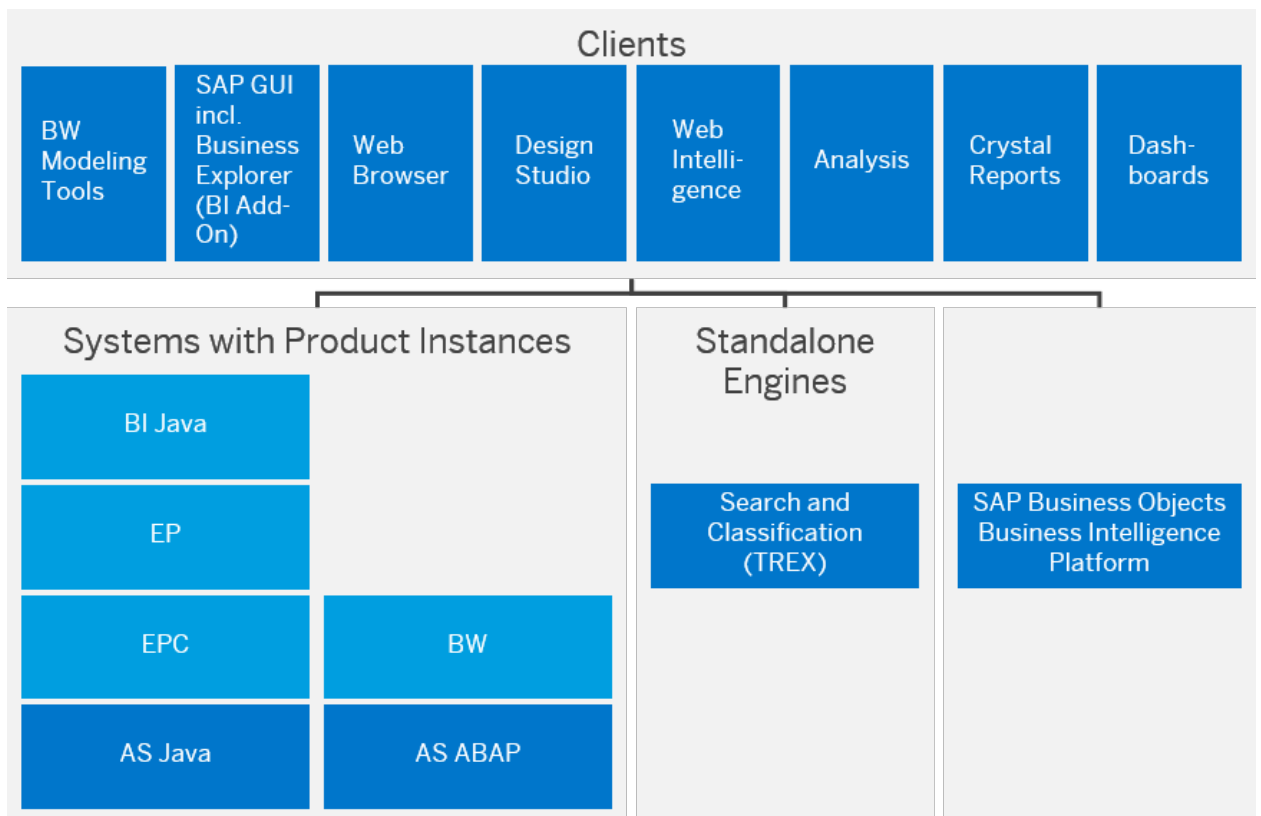


Figure 9: Data Warehousing

i Note

SAP Strategic Enterprise Management

If you have the SEM-BW add-on installed in your source release, read the following information in the SAP Community Network:

1. <http://scn.sap.com/docs/DOC-30452>
2. <http://scn.sap.com/community/data-warehousing/bw/blog/2013/11/13/good-news--easier-modeling-of-the-sem-add-on-in-solution-manager>

4.1.2.1 Data Warehousing on top of SAP HANA database

With SAP Business Warehouse (SAP BW) powered by SAP HANA database, SAP offers the SAP HANA database being the in-memory deployment option for the Data Warehousing use case. In combination with SAP BW 7.40 SPS08 (or higher) it is necessary to use SAP HANA SP08 or higher. Revision 82 is the minimum revision for SAP HANA SP08. We recommend to always use the latest available SAP HANA SP08 revision.






For more information on implementation conditions, scenario limitations and implementation sequence, see the *End-to-End Implementation Roadmap for SAP BW, powered by SAP HANA* on <http://service.sap.com/installnw74> and see SAP Note [1600929](#) as well as SAP Note [1949273](#).

4.1.2.2 Upgrade Sequence

Use



The following table describes the sequence in which you have to perform the upgrade or installation steps.

Note

- For information about finding the referenced documentation, see section [List of Documentation](#). [page 82] Consider also the composite notes for BW 7.30 Upgrade: [1636053](#)  (Upgrade SAP NetWeaver 7.30: BW-Server) and [1636057](#)  (Upgrade SAP NetWeaver 7.30: BI Java).
- For an overview about the steps needed for migrating an existing SAP BW installation to the SAP HANA database, refer to the *End-to-End Implementation Roadmap for SAP BW, powered by SAP HANA* available at <http://service.sap.com/installnw74>   [Planning](#) .

Procedure

Table 22:

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
	SAP BW on the SAP HANA database:	<div> Caution<ul style="list-style-type: none">• In case you want to deploy SAP BW on SAP HANA database, and you have ABAP+Java dual stack systems in your source release: Separate the ABAP stack from the Java stack. For more information, see section Dual-Stack Split [page 25].• If you want to upgrade from SAP BW 7.3 or 7.3 EhP1 running on SAP HANA, to SAP BW 7.4 running on SAP HANA: Update SAP HANA database to SPS 08, revision 82 or higher before you upgrade SAP BW (ABAP).• See SAP Note 1600929  for more information.</div>

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
1	<p>You upgrade the SAP BW ABAP server.</p> <p>[<i>Upgrade and Update Guide - SAP NetWeaver 7.4 ABAP</i>]</p> <p>SAP Note 1943931</p> <div data-bbox="379 600 911 795"> <p>i Note</p> <p>If you have a dual-stack system, both the ABAP and the Java upgrade run in parallel in an integrated procedure.</p> </div>	<ul style="list-style-type: none"> The required Basis plug-in (PI_Basis) is included in the upgrade. It includes the Enterprise Portal plug-in. You must update the BI_CONT add-on to BI_CONT 747 SPO5 or BI_CONT 757 during the upgrade of the SAP BW server. The upgrade process prompts you for the required DVD at the appropriate point in time. For more information, see SAP Notes 1808103 and 1853775. Alternatively, there is SAP Netweaver 7.4 BI Content 7.57 or SAP Netweaver 7.4 BI Content Extensions Add-On 7.57 available for SAP NetWeaver 7.4 SPS 05 and higher. This version of BI Content Add-On will be used for providing additional data flows that make use of the new BW features delivered only from SAP NetWeaver 7.4 SPS 05 and higher. If you use the already existing BI Content Add-on 7.47 then the limitation is that you would not receive the data flows based on Netweaver 7.4 SPS05 (and higher) features; it also means that the already existing BI Content Add-on 7.47 would not support the new BW features valid only for SAP Netweaver 7.4 SPS 05 and higher. Considering the above limitation we recommend that you upgrade to BI Content Add-on 7.57. Check also the SAP Note 153967 regarding the BI Content Release Strategy, and SAP Note 1000822 for an overview about the notes for the add-ons BI_CONT and BI_CONT_XT. <div data-bbox="933 1444 1474 1888"> <p>i Note</p> <p>Since SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend that you always install the latest available Support Package stack.</p> <p>If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately.</p> </div>

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
		<p>SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.</p> <p>Note for SAP BW on SAP HANA database:</p> <p>In addition to the SAP NetWeaver Support Package Stack, we recommend to apply the SAP Notes mentioned in SAP Note 1949273 for the respective Support Package Stack.</p>
2	<p>You upgrade your Java systems.</p> <p>[<i>Upgrade and Update Guide - SAP NetWeaver 7.4 JAVA</i>]</p>	<ul style="list-style-type: none"> Since SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade.
	<p>If no AS Java based installation exists, but you want to use BI Java based functions, install an SAP NetWeaver 7.4 system with product instance BI Java.</p> <p>[<i>Installation Guide – SAP NetWeaver Application Server Java</i>]</p>	<ul style="list-style-type: none"> The installation of product instance BI Java includes the installation of product instance EP Core– Application Portal and EP, since BI Java depends on these product instances.
3	<p>Optional: You upgrade SAP NetWeaver Search and Classification (TREX).</p> <p>[<i>Upgrade from TREX 6.1 to SAP NetWeaver TREX 7.0</i>]</p> <p>[<i>Upgrade Guide – SAP NetWeaver TREX 7.0 to TREX 7.1</i>].</p>	<p>TREX enables fast and complex search for BI metadata. The metadata is directly indexed with its attributes and it is available in the search. Therefore, search queries such as "All queries that contain the characteristic 'customer' and the key figure 'sales' " are supported. To be able to use all functions of the search (for example, the search query described above), you have to use TREX. However, as a base function, you can search for objects using their text and technical name also without TREX. For more information, see SAP Note 979444.</p>

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
5	<p>Optional: You upgrade the SAP R/3 back-end plug-in to at least version 2004.1.</p> <p>Documentation: Composite SAP Note 704564: <i>R/3 plug-in: PI 2004.1 installation/delta upgrade</i></p> <div> <p>Note</p> <ul style="list-style-type: none"> New and extended interfaces for integrating SAP R/3, SAP R/3 Enterprise, and SAP ERP Central Component (SAP ECC) will no longer be delivered with their own add-on (SAP R/3 Plug-In). As of SAP ECC 6.0, they will be contained directly in SAP ECC. Therefore, this step is not required for SAP ECC 6.0 or higher. For more information about the delivery strategy, see SAP Service Marketplace at https://service.sap.com/r3-plug-in. With BI-Java, you get access to non-SAP data sources by using the corresponding JDBC driver. </div>	
6	<p>You upgrade the SAP GUI for Windows including the BI add-on (Business Explorer) on each host for which you want to create a connection to the SAP NetWeaver 7.4 BW server.</p> <p><i>[Installation Guide – SAP Front End]</i></p>	<p>Up to SAP enhancement package 2 for SAP NetWeaver 7.0 you could maintain query properties using transaction RSRT. As of SAP NetWeaver 7.3, the maintenance of query properties has been partially moved into the BEx Query Designer. The settings <i>Data Integrity</i> and <i>Read Near-Line Storage As Well</i> are now available in BEx Query Designer (in the <i>Query Properties</i>) and you can no longer maintain them in RSRT.</p>
7	<p>You install the Modeling Tools for SAP BW powered by SAP HANA to use the Eclipse-based BW modeling environment.</p>	<p>See the installation guide at: http://service.sap.com/installnw74 ► <i>Installation</i> ► <i>Installation – Clients</i> ►.</p>
8	<p>Perform the delta configuration [page 80].</p>	

4.1.3 Upgrade of Scenarios Based on SAP Process Integration

Caution

As of release SAP NetWeaver 7.4, we strongly recommend to **avoid optional dual-stack deployments** where possible. By way of exception, dual-stack implementations can still exist in former is SAP Process Integration installations.

In general, SAP PI dual-stack will be supported in SAP NetWeaver 7.4. However, you are recommended to migrate SAP PI content into **SAP NetWeaver PI Java single stack (Advanced Adapter Engine Extended)**. This approach should be feasible for most use cases. Due to the harmonized process orchestration stack (SAP PI and SAP BPM running on the same Java instance), stateful system-centric processes can be developed using SAP Process Orchestration capabilities. Processes that are created with ccBPM need to be redesigned and modeled with SAP BPM. For more information about how to do this, see the SAP Community Network SCN at <http://scn.sap.com/docs/DOC-28803>.

Below you will find information about upgrading scenarios that are based on SAP Process Integration. This section is relevant for you if you use one of the following scenarios:

- SAP NetWeaver 7.0: Enabling Application-to-Application Processes; Enabling Business-to-Business Processes, Enabling Enterprise Services
- SAP NetWeaver Process Integration 7.1/ 7.1 including enhancement package 1: SOA-Based Integration
Note that the use case *SOA-Based Integration* has been renamed as *Building Integration Scenarios*.

As of SAP NetWeaver 7.3, the functional scope is covered by the use case Building Integration Scenarios. The following figures depict the three options with the software units, which make up the use:

- PI standard installation
- Advanced Adapter Engine Extended (AEX) installation
- Process Orchestration

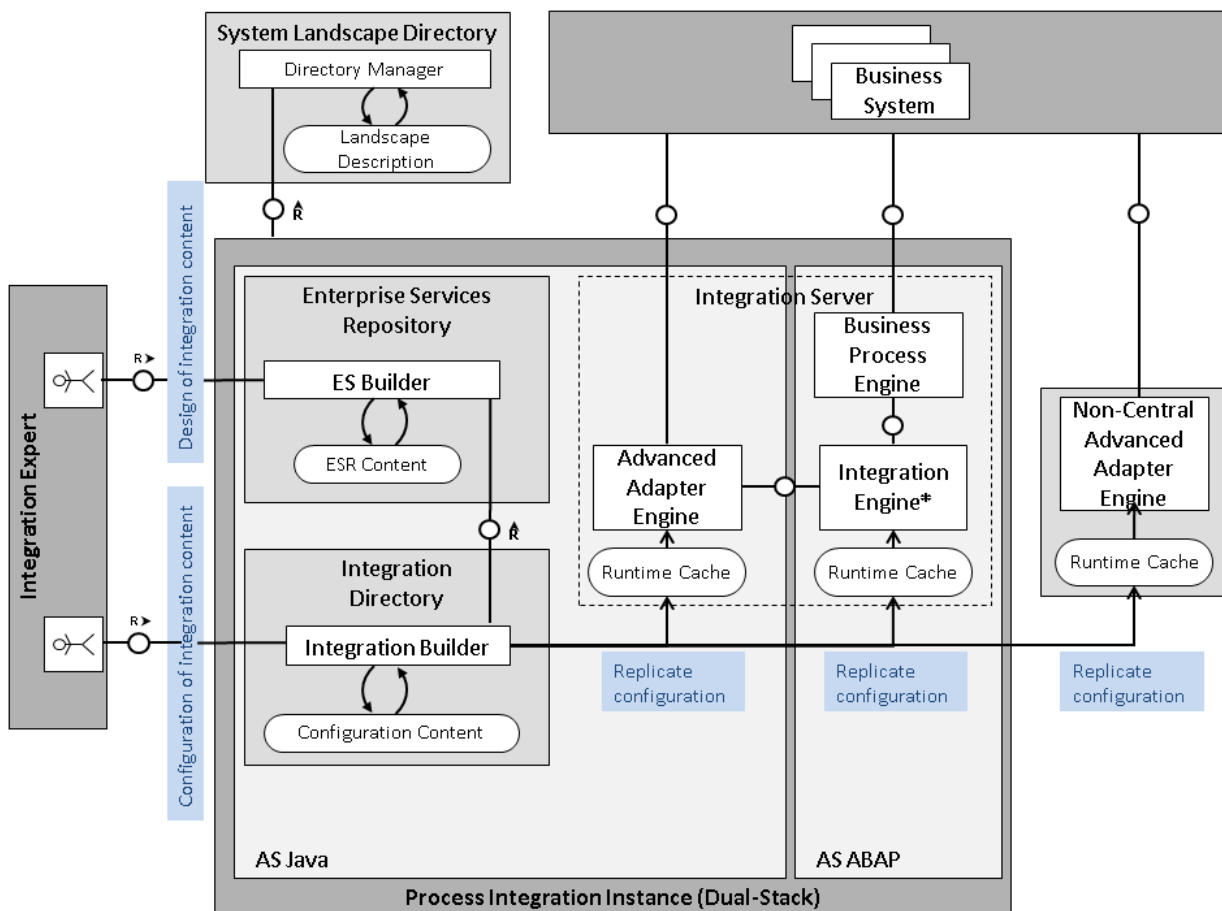


Figure 10: System Landscape for Building Integration Scenarios with PI Standard Installation

The standard installation offers the complete functional range, whereas the functional range of AEX is restricted, but has the advantage of a lower TCO.

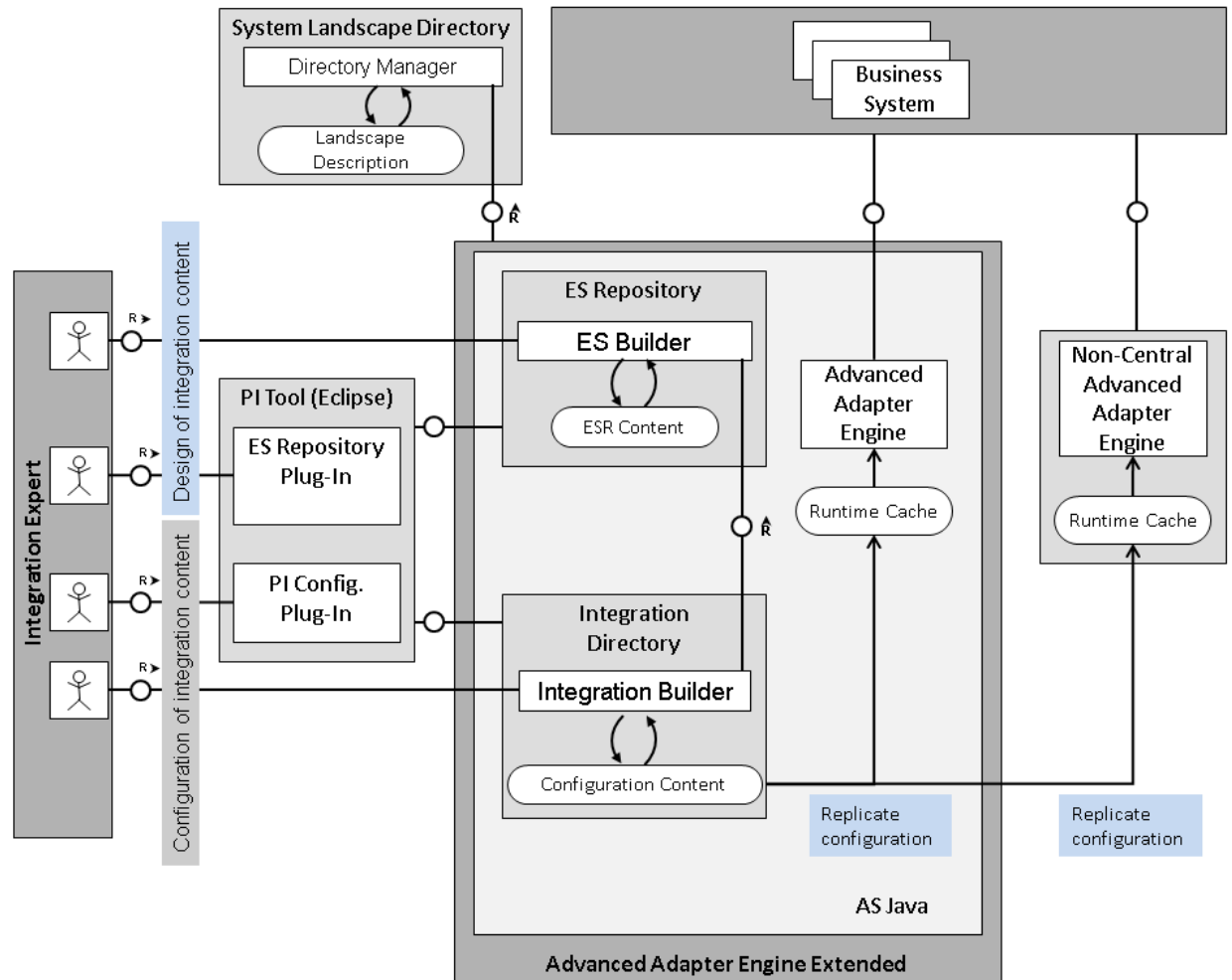


Figure 11: System Landscape for Building Integration Scenarios with Advanced Adapter Engine Extended

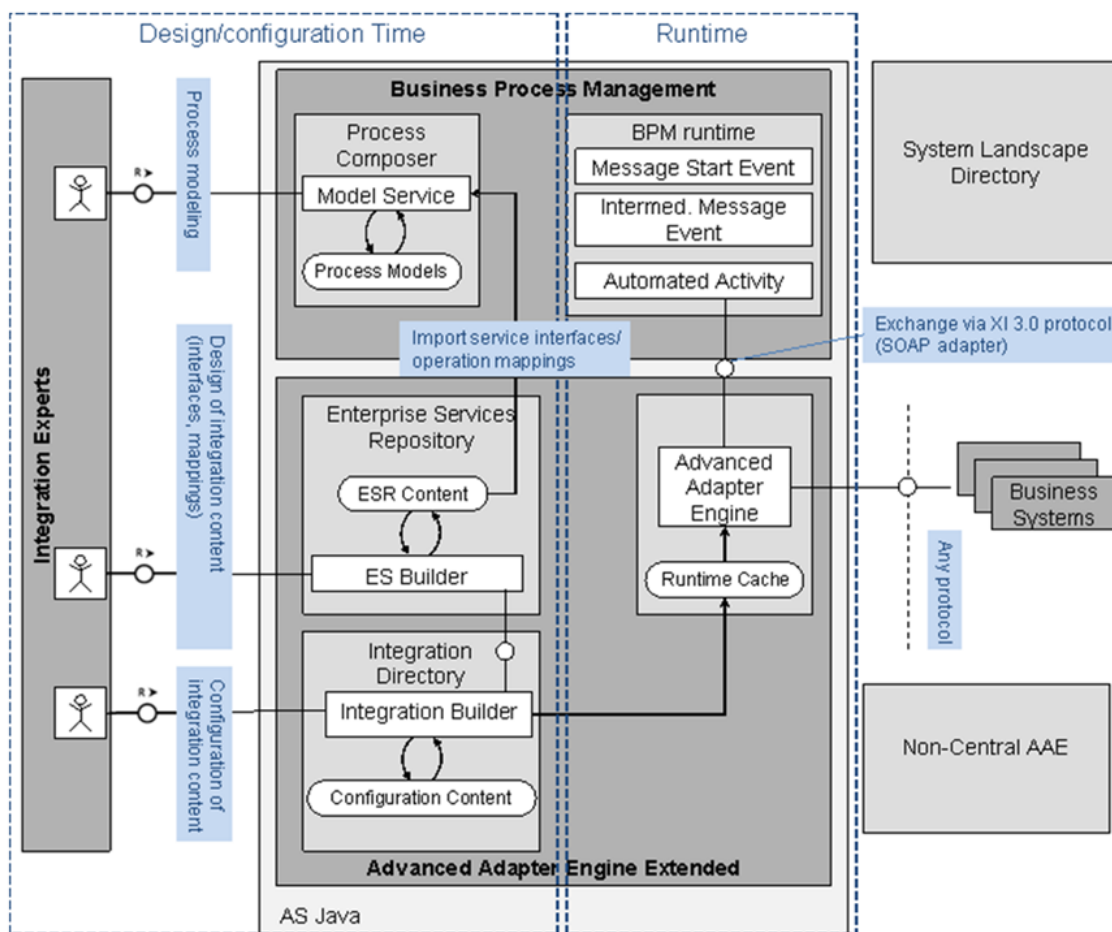


Figure 12: System Landscape for Building Integration Scenarios with Process Orchestration

The Process Orchestration provides a tool infrastructure to model and design business processes – from the overall process flow and the sequence of activities up to the interfaces and data types that are needed to integrate SAP systems and external systems. It combines the integration capabilities of SAP Process Integration Advanced Adapter Engine Extended (AEX) with the process modeling, operation, and monitoring capabilities of SAP Business Process Management (BPM). Like AEX, the Process Orchestration is based on AS Java only.

i Note

SAP NetWeaver Application Server Java 7.4 SP03 or higher based on SAP HANA

As of SAP NetWeaver 7.4 SP03, the SAP HANA database supports Application Server Java and further product instances that are dependent on AS Java. For more information in terms of the implementation of SAP NetWeaver Application Server Java 7.4 based on SAP HANA database, see the *End-to-End Implementation Roadmap for SAP NetWeaver AS Java based on SAP HANA*.

This guide is available on the Service Marketplace at <http://service.sap.com/upgradenw74> **Planning** .

4.1.3.1 Upgrade Sequence

The following table describes the sequence in which you have to perform the upgrade or installation steps.

i Note

For information about finding the referenced documentation, see section *List of Documentation*.

Table 23:

No.	Action [Required Documentation]	Remarks / Subsequent Steps
1	<p>You upgrade the SAP NetWeaver system with product instance PI.</p> <p>[Update Guide – Update of SAP Systems Using the Software Update Manager 1.0]</p> <p>[Upgrade and Update Guide - SAP NetWeaver 7.4 <technology>]</p>	<ul style="list-style-type: none"> As SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend that you always install the latest available Support Package stack. <div data-bbox="820 618 1359 1034" style="background-color: #fff9c4; padding: 10px; margin: 10px 0;"> <p>i Note</p> <p>If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately.</p> <p>SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.</p> </div> <ul style="list-style-type: none"> For upgrades from SAP NetWeaver 7.0 (including enhancement packages), or SAP NetWeaver 7.3, or SAP EHP1 for NetWeaver 7.3, or SAP NetWeaver PI 7.1 (including enhancement package 1), or SAP NetWeaver 7.4, you use the Software Update Manager (SUM). If you use partner adapters, see SAP Note 1522700 for information about their release restrictions. Modules or adapters that you have developed for SAP NetWeaver 7.0 adapter framework, do not run in the Process Integration framework of SAP NetWeaver 7.4 PI. During the upgrade of the adapter framework, you have to replace them by appropriate versions for the SAP NetWeaver 7.4 PI adapter framework. <p>If you cannot upgrade these modules or adapters, you may use a J2EE Adapter Engine of SAP NetWeaver 7.0 as a non-central Adapter Engine in your SAP NetWeaver 7.4 landscape. To do so, you have to move all scenarios containing these modules and adapters to a non-central Adapter Engine of SAP NetWeaver 7.0 before you upgrade the central PI system.</p>

No.	Action [Required Documentation]	Remarks / Subsequent Steps
2	You upgrade the standalone Adapter Engine. [Update Guide – Update of SAP Systems Using the Software Update Manager <version>] [Upgrade and Update Guide - SAP NetWeaver 7.4 Java]	As this is an AS Java based system, the standard upgrade procedure and tools for SAP Java systems are used.
3	You upgrade the Adapter Engine (Java SE). SAP NetWeaver 7.4 Library at http://help.sap.com/nw74 ➤ Application Help ➤ Function-Oriented View ➤ Process Integration ➤ Adapter-Engine (Java SE) ➤ Installation ➤	The Adapter Engine (Java SE), including the contained adapters, is only supported for compatibility reasons. It is not developed any further. It should therefore only be used in cases where it is unavoidable.
4	You upgrade Search and Classification (TREX). [Upgrade Guide – SAP NetWeaver TREX 7.0 to TREX 7.1].	
5	You upgrade your SAP GUI installations. [Installation Guide – SAP Front End]	
6	If required, transfer Enterprise Service Repository (ESR) content from SAP NetWeaver CE 7.1 ESR to SAP NetWeaver 7.4 PI ESR. [Upgrade of System Landscapes Including ES Repository for SAP CE [page 68]]	
7	You perform the delta configuration [page 80].	

The following table shows the procedure depending on the source release and technology of a PI Dual-Stack system:

Table 24:

Source Release	Technology	Procedure
7.00, 7.01, 7.02	Java	upgrade
	ABAP	enhancement package installation
7.10, 7.11, 7.30	Java	enhancement package installation
	ABAP	upgrade
7.31	Java	enhancement package installation
	ABAP	enhancement package installation

4.1.3.2 Upgrade of System Landscapes Including ES Repository for SAP CE

Use

If your source release system landscape contains an Enterprise Service Repository (ESR) of SAP NetWeaver Composition Environment 7.1, you should discontinue using this ESR. Instead, use the ESR included in SAP NetWeaver 7.4 Process Integration. Proceed as outlined below.

Process

1. Upgrade to SAP NetWeaver 7.4 Process Integration.
2. Transport the ESR content from SAP Composition Environment to SAP Process Integration either using the Change Management Server (CMS) of SAP NetWeaver DI, or using the file system. For more information, see the SAP NetWeaver 7.4 Library at <http://help.sap.com/nw74> ► *Application Help* ► *Function-Oriented View* ► *Process Integration* ► *Enterprise Services Repository & Registry* ► *Managing Services in the Enterprise Services Repository* ► *Transporting Objects* ► *Transporting ESR Content and Objects of Integration Directory* ►
3. You manually have to assign users to the user groups of the SAP PI ESR since these cannot be transferred from the SAP CE ESR.

4.1.4 Upgrade of Scenarios Based on SAP Composition Environment

Below you will find information about upgrading scenarios that are based on SAP Composition Environment. This section is relevant for you if you use SAP NetWeaver Composition Environment 7.1, 7.1 including enhancement package 1 or 7.2.

As of SAP NetWeaver 7.3, the functional scope is covered by the use case Building Composite Applications. The following figure shows which software units make up the use case.

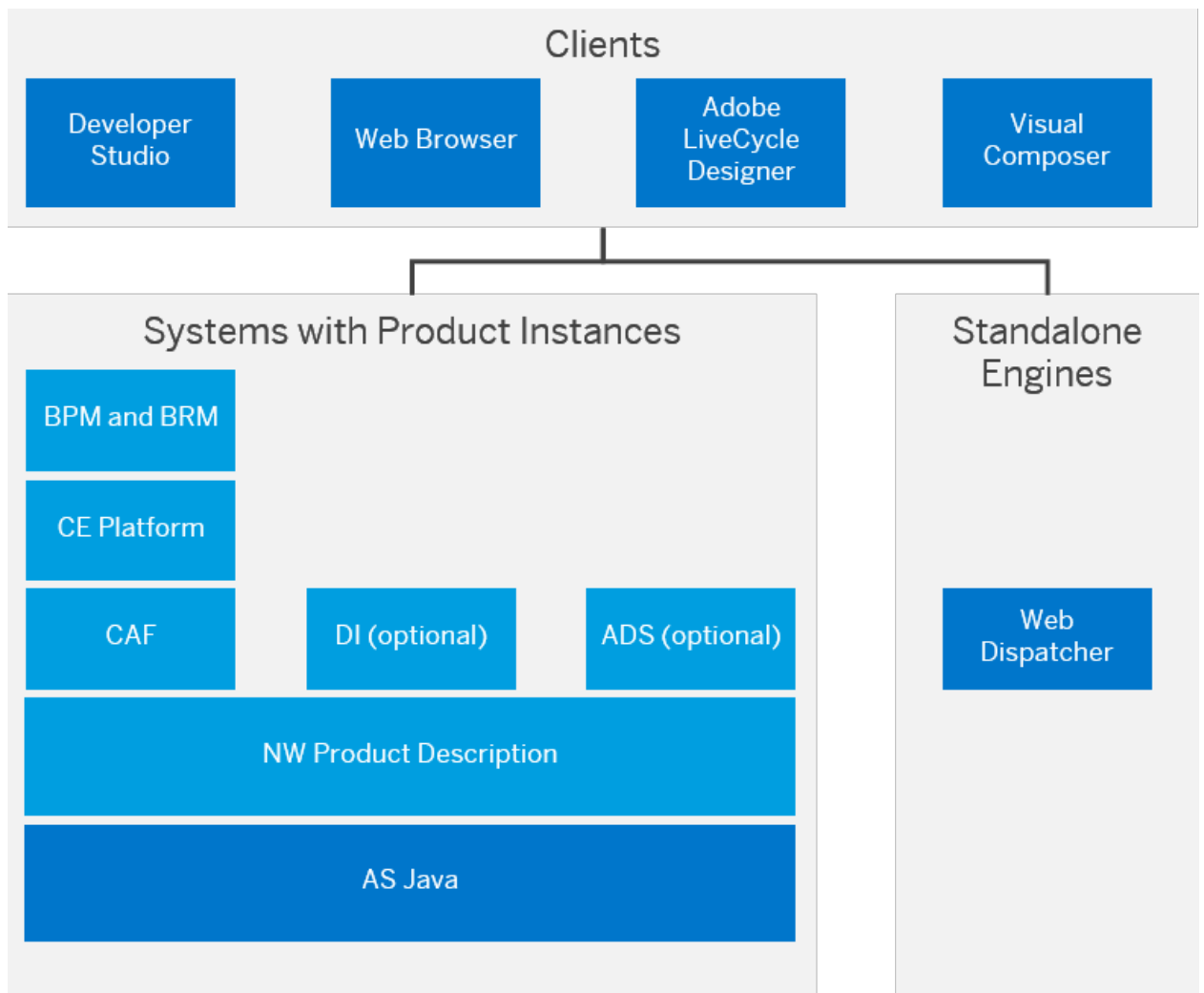


Figure 13: Building Composite Applications

i Note

SAP NetWeaver Application Server Java 7.4 SP03 or higher based on SAP HANA

As of SAP NetWeaver 7.4 SP03, the SAP HANA database supports Application Server Java and further product instances that are dependent on AS Java. For more information in terms of the implementation of SAP NetWeaver Application Server Java 7.4 based on SAP HANA database, see the *End-to-End Implementation Roadmap for SAP NetWeaver AS Java based on SAP HANA*.

This guide is available on the Service Marketplace at <http://service.sap.com/upgradenw74>  **Planning** .



4.1.4.1 Upgrade Sequence

The following table describes the sequence in which you have to perform the upgrade or installation steps.

Note

For information about finding the referenced documentation, see section [Documentation References \[page 82\]](#).

Table 25:

No.	Action [Required Documentation]	Remarks / Subsequent Steps
1	You upgrade the SAP Composition Environment server or Developer Workplace. <i>[Update Guide – Update of SAP Systems with Software Update Manager 1.0]</i>	As SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend that you always install the latest available Support Package stack. <div> Note If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately. SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.</div>
2	You upgrade the SAP NetWeaver Developer Studio. <i>[Installation and Update Guide – SAP NetWeaver Developer Studio 7.4]</i>	Install SAP NetWeaver Developer Studio 7.3 EHP1 latest SP to use it as development environment for SAP NetWeaver 7.4 latest SP. See also SAP Note 1791485  .
3	Perform the delta configuration [page 80] .	

4.1.5 Upgrade of Scenarios Based on SAP NetWeaver Mobile

Below you will find information about upgrading scenarios that are based on SAP NetWeaver Mobile.

Depending on your source release, you either have to perform a migration or an upgrade to the target release:

- Source release SAP NetWeaver 2004 and SAP NetWeaver 7.0: Since the system landscape and software architecture changed, you need to perform a migration. For information about the migration procedure, see the *Migration Guide – SAP NetWeaver Mobile 7.1*.
- SAP NetWeaver Mobile 7.1 and SAP NetWeaver Mobile 7.1 including enhancement package 1: You can upgrade directly to *SAP NetWeaver Mobile 7.4*.

i Note

SAP NetWeaver Mobile is available as add-on for SAP NetWeaver as of SAP enhancement package 1 for NetWeaver 7.3. If you use SAP NetWeaver Mobile either on SAP NetWeaver 7.10 or on SAP NetWeaver 7.3, you install the add-on on top of SAP NetWeaver 7.4.

Choose the add-on *SAP NetWeaver Mobile 7.4* while selecting in the SAP Solution Manager Maintenance Optimizer the files, which are necessary for the upgrade. The further upgrade steps are outlined below in section *Upgrade Sequence*.

For more information about the installation of the add-on *SAP NetWeaver Mobile 7.4*, see SAP Note [1645275](#).

As of SAP NetWeaver 7.3, the functional scope is covered by the use case *Mobilizing Business Processes*. The following figure shows the software units that make up the use case.

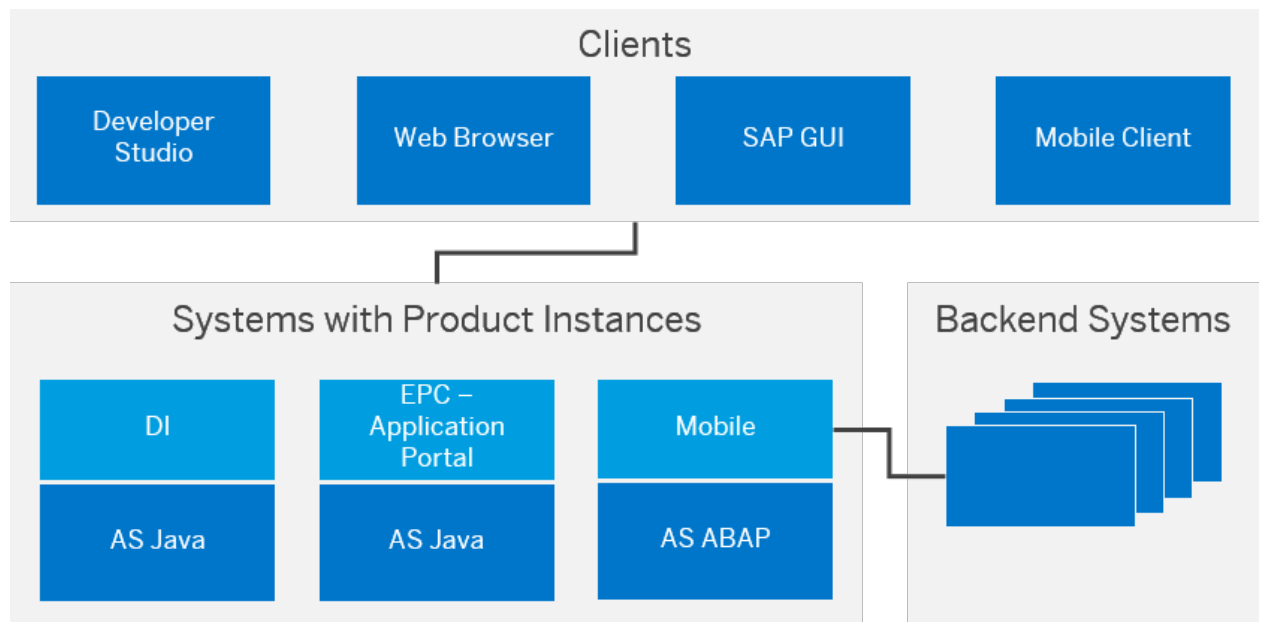


Figure 14: Software Units for Mobilizing Business Processes

4.1.5.1 Upgrade Sequence

The following table describes the sequence of upgrade steps for upgrading from SAP NetWeaver Mobile 7.1 and SAP NetWeaver Mobile 7.1 including enhancement package 1 to SAP NetWeaver 7.4.

⚠ Caution

As of SAP enhancement package 1 for SAP NetWeaver 7.3, SAP NetWeaver Mobile is only available as add-on. See SAP Note [1645275](#) for further information about installing SAP enhancement package 1 for SAP NetWeaver Mobile 7.3.

i Note

For information about finding the referenced documentation, see section [Documentation References \[page 82\]](#).

Table 26:

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
1	<p>You upgrade the SAP NetWeaver Mobile server.</p> <p>[Update Guide – Update of SAP Systems Using Software Update Manager <version>]</p> <p>[Upgrade and Update Guide - SAP NetWeaver 7.4 ABAP]</p>	<ul style="list-style-type: none"> As SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend that you always install the latest available Support Package stack. If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately. SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5. For the upgrade from SAP NetWeaver Mobile 7.1 to SAP NetWeaver 7.4, make sure that SAP NetWeaver Mobile 7.1 includes at least SPS 04 or higher.
2	<p>You generate the software component versions (SWCV).</p> <p>You must regenerate all the data objects that are part of the SAP Basis 7.10 software component version along with other application-specific software component versions.</p>	
3	<p>You configure the Data Orchestration Engine (DOE).</p> <p>See SAP Help Library at http://help.sap.com/nw74</p> <p>► Application Help ► SAP NetWeaver Mobile ► Configuring SAP NetWeaver Mobile ► Configuring SAP NetWeaver AS ► Performing DOE Initial Setup and Configuration ►</p>	
4	<p>If existing in your landscape, you upgrade your AS Java-based systems with product instance DI or Enterprise Portal.</p> <p>[Upgrade and Update Guide - SAP NetWeaver 7.4 Java]</p> <p>[Update Guide – Update of SAP Systems Using Software Update Manager <version>]</p>	

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
5	<p>You upgrade your mobile clients (if SAP Mobile Clients are used):</p> <ol style="list-style-type: none"> Download patches from SAP Service Marketplace and then upload them to the Data Orchestration Engine. See SAP Help Library at http://help.sap.com/nw74 ► <i>Application Help</i> ► <i>SAP NetWeaver Mobile</i> ► <i>Administering SAP NetWeaver Mobile</i> ► <i>Software Logistics</i> ► Apply patches. You assign the patches to the client devices, which makes them available in the outbound queues of the devices. On the next synchronization of the client with the DOE, the patch is downloaded to the client device. The client installer applies the patches on the client, and then automatically restarts the client. See SAP Help Library at http://help.sap.com/nw74 ► <i>Application Help</i> ► <i>SAP NetWeaver Mobile</i> ► <i>Administering SAP NetWeaver Mobile</i> ► <i>Software Logistics</i> ► <i>Applying Patches</i> ► <i>Applying Patches on the Mobile Client</i> ►. 	
6	<p>You upgrade your SAP GUI installations.</p> <p>[<i>Installation Guide – SAP Front End</i>]</p>	


4.1.6 Upgrade of SAP Knowledge Warehouse

Below you will find information about upgrading SAP Knowledge Warehouse. This section is relevant for you if you used one of the following scenarios:

- SAP NetWeaver 2004: SAP KW
- SAP NetWeaver 7.0: IT scenario [Documentation, Training Materials and Manuals Management](#)

Note

As of SAP NetWeaver 7.0, SAP Knowledge Warehouse (SAP KW) is an integral part of SAP NetWeaver Application Server.

For more information, see the SAP Note [1406422](#) .

The following figure shows a typical system landscape for SAP Knowledge Warehouse:

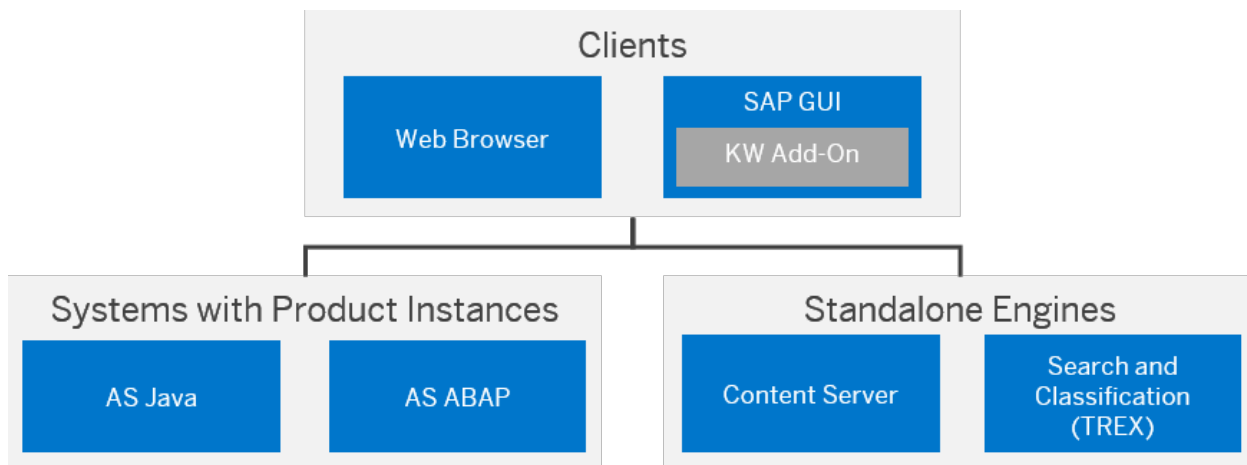


Figure 15: SAP Knowledge Warehouse

4.1.6.1 Upgrade Preparation

4.1.6.1.1 Upgrade Preparation

Perform the following preparations before you start the upgrade of your SAP Knowledge Warehouse system.

4.1.6.1.2 Backing Up the SAP System and the SAP Content Server

Before you start the upgrade, create a backup of the SAP system (ABAP+Java dual-stack system) and of all SAP Content Servers. The SAP system and the SAP Content Servers must be in a consistent state when you perform the backup. We recommend that you create the backup after you have made the last changes to your production data. Otherwise, data could be lost if problems occur during the upgrade.

If your Application Server Java is installed as a standalone system, you need to create a backup for this system as well.

Make sure that you also create a backup of the MaxDB instance related to the SAP Content. The further usage of the SAP KW content is only possible, if the latest files stored in the SAP Content Server fit to the metadata stored in the SAP system and vice versa.

4.1.6.1.3 Saving the SAP Content Server Configuration File

Create a copy of the file `contentserver.ini` (on Windows) or `cs.conf` (on Unix). This file contains information about the repositories stored in the MaxDB (formerly SAP DB) instance. You can find it in the home directory of the SAP Content Server Web site. Save the copy of the file in a different directory from the original one.

This file is especially important as it contains information about already existing content repositories in the SAP Content Server.

4.1.6.1.4 Saving Customer-Specific Changes to the Internet Knowledge Servlet

If you have made changes to the display component of the SAP Knowledge Warehouse, the Internet Knowledge Servlet (IKS), for example, if you changed the graphics in the banner to meet your requirements for corporate identity, save a version of the SCA (Software Component Archive) of the source release IKS so you can apply your changes to the IKS-SCA of your target release.

i Note

SAP ITS is no longer required.

4.1.6.2 Upgrade Sequence

The following table describes sequence in which you have to perform the upgrade or installation steps.

i Note

For information about finding the referenced documentation, see section [Documentation References \[page 82\]](#).

Table 27:

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
1	<p>Upgrade the Application Server ABAP and Application Server Java.</p> <p>[<i>Upgrade and Update Guide - SAP NetWeaver 7.4 ABAP</i>]</p> <p>[<i>Upgrade and Update Guide - SAP NetWeaver 7.4 Java</i>]</p> <p>[<i>Update Guide – Update of SAP Systems Using Software Update Manager <version></i>]</p>	<p>As SAP NetWeaver 7.4 is only supported with Support Package Stack (SPS) 02 or higher, include at least SPS 02 into the upgrade. However, we highly recommend that you always install the latest available Support Package stack.</p> <div> <p>i Note</p> <p>If you install SAP NetWeaver 7.4 with Support Release 2, you install automatically the previously available support packages 1 to 8 at once, and your system goes immediately to 7.4 SP8 without needing to implement the intervening SPs separately.</p> <p>SAP NetWeaver 7.4 with Support Release 1 includes the support packages 1 to 5. If you perform an update with target release NW 7.4 SR1, your system goes immediately to 7.4 SP5.</p> </div>
2	Uninstall older versions of SAP Gateway.	An SAP Gateway is only required if SAP Content Server is installed on a different server than the AS ABAP instance. Otherwise, the gateway of the existing SAP instance can be used.
3	<p>Uninstall the SAP Internet Transaction Server if it exists.</p> <p>To uninstall an ITS instance that is only used for your KW system, proceed as follows:</p> <ol style="list-style-type: none"> 1. Start the Microsoft Management Console. 2. Close the ITS Web site. 3. Choose <i>Save</i> and close the Microsoft Management Console. 4. Choose Start > <i>Settings</i> > <i>Control Panel</i> > <i>Add/Remove Programs</i> > <i>Internet Transaction Server</i>. 	<div> <p>i Note</p> <p>A standalone instance of SAP ITS only exists for very low Support Package levels of SAP Web Application Server 6.40 (lower than SPS13). If your system has a higher Support Package level or is already on SAP NetWeaver release 7.0, no activity is required here.</p> </div>

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps [Corresponding Documentation]
4	<p>Upgrade the SAP Content Server and Cache Server (if used).</p> <p>[<i>Installation Guide SAP Content Server 6.40</i>]</p>	<p>For SAP Knowledge Warehouse, the content has to be stored in a MaxDB database. The upgrade of SAP Content Server may also require an upgrade of the MaxDB instance. For information about the supported combinations of SAP Content Server, operating system and MaxDB version, see the Product Availability Matrix at http://service.sap.com/pam.</p> <p>If SAP Content Server is installed on a different server than the SAP Web AS, you can perform the upgrade activities in parallel.</p> <p>If the Content Server configuration file has been changed by these actions, then use the configuration file from the preparation step to have access to the repositories again. Do not try to re-create them.</p>
5	<p>Install SAP Gateway, if SAP Gateway is not already installed on your system.</p> <p>[<i>Installation Guide – Standalone Gateway on <Operating System> – For SAP Systems Based on SAP NetWeaver 7.4</i>]</p>	<p>If SAP Content Server is installed on the same host as the SAP NetWeaver Application Server ABAP, you do not need to install the SAP Gateway.</p>
6	<p>Install or update to SAP NetWeaver Search and Classification (TREX).</p> <p>[<i>Installation Guide – SAP NetWeaver 7.1 TREX Single Host</i></p> <p><i>Installation Guide – SAP NetWeaver 7.1 TREX Multiple Hosts</i></p> <p><i>Upgrade Guide – TREX 6.1 to SAP NetWeaver 7.0 TREX (TREX 7.0)</i></p> <p><i>Upgrade Guide – TREX 7.0 to SAP NetWeaver 7.1 TREX (TREX 7.1)</i></p>	<p>Installation or upgrade to a higher TREX release is only required if you want to use the full text or attribute search capabilities of SAP KW.</p> <div style="background-color: #fff9c4; padding: 10px; margin-top: 10px;"> <p>i Note</p> <p>TREX 7.1 is supported on a restricted number of operating systems. For more information, see the Product Availability Matrix (PAM) at http://service.sap.com/pam.</p> </div>
7	<p>Check the configuration of your SAP Knowledge Warehouse. For information about the configuration, see SAP Note 1287381.</p>	

4.1.6.3 Follow-Up Activities

SAP KW Configuration

For information about the configuration of the SAP Knowledge Warehouse scenarios, see SAP Note [1287381](#).

Perform function tests for the SAP KW scenarios

You perform function tests for the SAP Knowledge Warehouse scenarios (such as *Editing of Content* or *Printing of Structures*), which are used in your environment.

If you have a specific version of the SAP KW display component (see [Saving Customer-Specific Changes to the Internet Knowledge Servl \[page 75\]](#)), then only the SAP standard IKS is available after the upgrade. You have to apply your changes to the IKS of the target release and deploy them by means of the Software Deployment Manager (SDM).

4.1.7 Custom Application Development (ABAP)

Use

The Application Server ABAP provides the ABAP foundation of SAP NetWeaver. AS ABAP provides a complete development and runtime environment for ABAP-based applications. It is optimized for the development of highly scalable business applications.

SAP delivers a vast number of standard Business applications such as the SAP Business Suite and Industry solutions, on the ABAP platform, meeting the standard enterprise business requirements. However, there are always certain processes and scenarios in an enterprise, which are customer-specific. These specific processes and scenarios enable customers to differentiate their business and further leverage their competitive advantage. To meet these customer-specific needs the Application Server ABAP development and runtime environment offers extensive tools and services for the development of ABAP based applications. In addition to the comprehensive development tools support, the Application Server ABAP also offers capabilities for process & memory administration, multi-user management, database connections and more.

An end to end lifecycle management support equips customers with services & tools, for example for system landscape management, configuration, transport management, offering support at every stage of the application lifecycle, from prototype to go-live and thereafter.

Application Server ABAP 7.4 offers various new enhancements for the Custom Application Development (ABAP) use case. These new enhancements can be broadly categorized into two main areas:

- **Core ABAP enhancements**
for example for enhancements in the ABAP programming language, Eclipse-based ABAP development environment and tools.
- **SAP HANA based developments**

to take advantage of SAP HANA specific features from ABAP such as: *New ABAP Profiler* to detect code optimization potential for SAP HANA, *Enhanced ABAP List Viewer (ALV) for SAP HANA*, *ABAP managed database procedures (AMP)*, *Core Data Services (CDS)*.

The ABAP development and runtime environment makes it possible to develop complex business applications without having to worry explicitly about technical details such as process or memory administration, multi-user capability, database connections, or similar issues. These are provided in the basic services of the Application Server ABAP or are integrated directly in the ABAP runtime. The application development is similarly independent of the underlying platform. The application server decouples the application coding completely from the operating system and database that are used. Using ABAP, you can run custom development projects to create and enhance business functions in the backend, and you can develop applications using various SAP UI technologies such as SAP UI5 or Floor Plan Manager (FPM), and Web Dynpro ABAP applications to meet different scenario requirements.

The Application Server ABAP 7.4 brings with it several innovations and enhancements. The main area of innovation focus has been on enabling the Application Server ABAP to harness the power of SAP HANA database for OLAP- and OLTP-based application scenarios. Application Server ABAP 7.4 further on, remains compatible with traditional relational databases.

The new core ABAP enhancements focus on providing a rich ABAP developer experience

As shown in the figure below, the system landscape provides additional components for the Custom Application Development scenario:

- SAP HANA database
- ABAP Development Tools for SAP NetWeaver

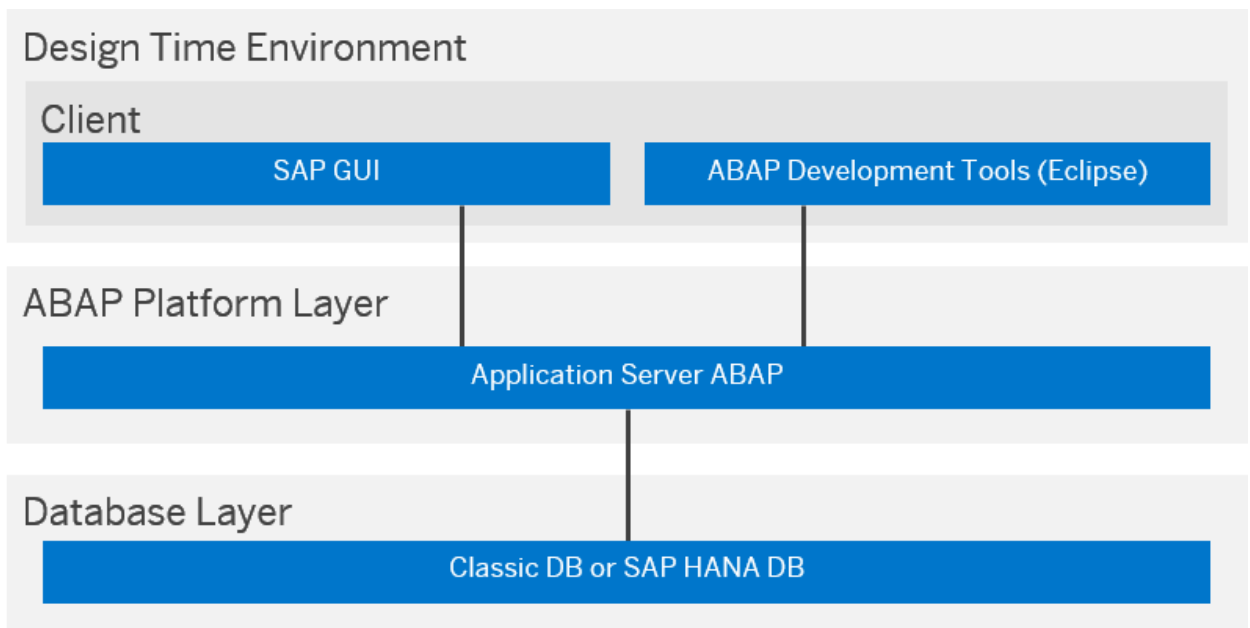


Figure 16: Software layers and components that are used in the Custom Application Development scenario

So that optimum benefit can be achieved from running productive Business Suite systems on SAP HANA DB, the AS ABAP provides support for the migration to SAP HANA DB. A combination of new ABAP code scans as well as monitoring and analysis tools enables the developer to find ABAP SQL code that has potential for performance improvement (ABAP for HANA performance optimization).

With ABAP Development Tools for SAP NetWeaver, a new development environment - as an addition to the ABAP Workbench (SAP GUI) - is at the disposal of the ABAP developer in the classic *Custom Application Development* scenario. It is based on the open platform Eclipse and targets a significant increase in development productivity in all phases of ABAP-based software projects. It combines the strengths of the close integration of development, test, and quality-assurance tools with the application server AS ABAP; this includes the stable and proven ABAP Lifecycle Management process - with the advantages of a comfortable and lightweight Eclipse UI and a standardized user interaction process.

ABAP Development Tools play a central role in the integration of the SAP HANA repository contents within the ABAP platform layer. So that native access to models from the SAP HANA repository is possible from within ABAP, appropriate proxies can be generated as development objects and handled in the same way as other ABAP repository objects.

More Information

For more information regarding Custom Application Development (ABAP), see the Help Portal at:

- <http://help.sap.com/nw74> ► *Application Help* ► *Function-Oriented View* ► *Application Server* ► *Application Server ABAP* ► *Application Development on AS ABAP* ►
- <http://scn.sap.com/community/abap>
- <http://scn.sap.com/community/netweaver-as>

In terms of the implementation of SAP NetWeaver Application Server ABAP 7.4 based on SAP HANA, see the *End-to-End Implementation Roadmap for SAP NetWeaver AS ABAP*. This guide is available on the Service Marketplace at <http://service.sap.com/installnw74> ► *Planning* ►.

4.2 Configuration of Systems and Follow-Up Activities

After the upgrade, new and changed functions may require you to adjust your Customizing and the configuration of your systems. For information about new, changed or enhanced functions, see the Release Notes available at <http://help.sap.com/nw74> ► *What's New – Release Notes* ►. In addition, several follow-up activities are required.

Configuration










The SAP Solution Manager contains descriptions of all configuration tasks, and leads you to automated configuration procedures, where available.

For more information about configuration activities, check the SAP NetWeaver 74 library at <http://help.sap.com/nw74> ► *Application Help* ► *Function-Oriented View* ► *<Software Unit>* ►.






Note













Accessing Use Case information in SAP Solution Manager

You can use the business process repository browser (BPR browser) in SAP Solution Manager at <https://implementationcontent.sap.com/bpr> to instantly access information about the SAP NetWeaver 7.4 use cases you want to implement::




- Choose  [Business Process Repository](#)  [Solutions/Applications](#)  [SAP NetWeaver](#)  to centrally access all SAP NetWeaver 7.4 use cases.
- Choose  [Business Process Repository](#)  [Solutions/Applications](#)  [SAP Technology](#)  [-> End-To-End Use Cases](#)  to access end-to-end implementation information about Application Life-Cycle Management and Enterprise Data Warehousing.


Process Integration

Instead of creating your configuration guides with the SAP Solution Manager, you can also find the configuration information in the SAP Help Portal. Access the SAP NetWeaver 7.4 Library at: <http://help.sap.com/nw74>  [Application Help](#)  [Function-Oriented View](#)  [Process Integration](#)  [Configuring Process Integration After Installation](#) .

1. For configuring the Process Integration (PI) Dual Stack, choose  [Configuring Process Integration \(PI\) Dual Stack](#)  [Basic Configuration for SAP Process Integration \(PI\)](#) .
 - For configuring the Non-Central Advanced Adapter Engine (PI-AF) for PI Dual-Stack, choose  [Configuring the Non-Central Advanced Adapter Engine \(PI-AF\)](#) .
2. For configuring the Advanced Adapter Engine Extended (PI-AEX), choose  [Configuring Advanced Adapter Engine Extended \(PI-AEX\)](#)  [Basic Configuration for SAP PI Advanced Adapter Engine Extended](#) .
- For configuring the Advanced Adapter Engine Extended (PI-AF) for AEX, choose  [Configuring the Non-Central Advanced Adapter Engine \(PI-AF\) for AEX](#) .
3. For configuring the Process Orchestration (PI-CP), choose  [Configuring Process Orchestration \(PI-CP\)](#) .

Follow-Up Activities

For further follow-up activities, check the section [Follow-Up Activities](#) in the Update Guide *Update of SAP Systems Using Software Update Manager <version>*. You can find the latest version of this guide at <http://support.sap.com/swdc>  [Software Logistics Toolset 1.0](#)  [Documentation](#)  [System Maintenance](#)  [Updating SAP Systems Using Software Update Manager <Version>](#) .

In addition, for further follow-up activities with regard to SAP NetWeaver key areas such as *Process Integration* or *Business Warehouse*, you need to check the *Upgrade and Update Guide - SAP NetWeaver 7.4 <Technology>*, available on the SAP Service Marketplace at <http://service.sap.com/upgradenw74> .

A Appendix




A.1 Documentation References

The following table contains a list of all documentation referenced in this document and information about where to find it.

Table 28:

Title	Location
SAP NetWeaver 74 Library	See SAP Help Portal at http://help.sap.com/nw74
SUM Guide: <i>Update Guide – Updating SAP Systems Using Software Update Manager 1.0 SP<Support Package> <Technology> <Operating System> <Database></i>	See SAP Service Marketplace at http://support.sap.com/slttoolset ► <i>System Maintenance</i> ► <i>Software Update Manager (SUM) <version> ► Guides for SUM <version></i> ►
Sap NetWeaver 7.4 Update and Upgrade Guides for ABAP, Java, ABAP+ Java: <i>Upgrade and Update Guide - SAP NetWeaver 7.4 <Technology></i>	See SAP Service Marketplace at http://service.sap.com/upgradenw74
<i>Maintenance Planning Guide</i>	See http://support.sap.com/mopz ► section “Guides” ►
<i>Master Guide – SAP NetWeaver 7.4</i>	See SAP Service Marketplace at http://service.sap.com/installnw74
<i>Installing and Updating TREX 7.1 Single Host</i>	
<i>Installing TREX 7.1 Multiple Host</i>	

Title	Location	
<i>Migration Guide – SAP NetWeaver Mobile</i>		

Title	Location
	<div> <div>o</div> <div>m</div> <div>/</div> <div>i</div> <div>n</div> <div>s</div> <div>t</div> <div>g</div> <div>u</div> <div>i</div> <div>d</div> <div>e</div> <div>s</div> <div>   </div> <div>S</div> <div>A</div> <div>P</div> <div>N</div> <div>e</div> <div>t</div> <div>W</div> <div>e</div> <div>a</div> <div>v</div> <div>e</div> <div>r</div> <div>  </div> <div>S</div> <div>A</div> <div>P</div> <div>N</div> <div>e</div> <div>t</div> <div>W</div> <div>e</div> <div>a</div> <div>v</div> <div>e</div> <div>r</div> <div>M</div> <div>o</div> <div>b</div> <div>i</div> <div>l</div> </div>

Title	Location
<p><i>Upgrade Guide – TREX 6.1 to SAP NetWeaver 7.0 TREX (TREX 7.0)</i></p>	


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Title	Location
Upgrade Guide – TREX 7.0 to TREX 7.1 TREX	/ / s e r v i c e · s a p · c o m / u p g r a d e n w 7 4 





A.2 Additional Information for Implementing SAP NetWeaver

The following table contains links to information available on SAP Service Marketplace or in the SAP Library which is relevant for implementing SAP NetWeaver:

Table 29:

Content	Location on SAP Service Marketplace or in SAP Library
The latest version of the installation and upgrade guides for SAP NetWeaver 7.4	http://service.sap.com/instguidesn74 

Content	Location on SAP Service Marketplace or in SAP Library
System Copy Guides for different Releases	<ul style="list-style-type: none"> SAP NetWeaver 2004: http://service.sap.com/nw04installation SAP Web AS SAP NetWeaver 7.0 http://service.sap.com/installnw70 Installation – SAP NetWeaver Systems SAP NetWeaver CE 7.1: http://service.sap.com/instguidesnwce71 SAP NetWeaver CE 7.1 including enhancement package 1: http://service.sap.com/instguidesnwce711 SAP NetWeaver CE 7.2: http://service.sap.com/installnwce72 SAP NetWeaver Process Integration 7.1: http://service.sap.com/installnwpi71 SAP NetWeaver Mobile 7.1: http://service.sap.com/installnwmobile71
Information about security	SAP Security Guide: See the SAP Library at http://help.sap.com/nw74 Security Information Security Guide .
Information about the technical operation of SAP NetWeaver	<i>Technical Operations Manual</i> : See the SAP Library at http://help.sap.com/nw74 System Administration and Maintenance Information Technical Operations for SAP NetWeaver .
Information about SAP NetWeaver Support Package Stacks	http://support.sap.com/sp-stacks SP Stack Information
SAP Upgrade Info Center	http://support.sap.com/update
Information about SAP NetWeaver Capabilities	<ul style="list-style-type: none"> http://scn.sap.com/community/netweaver http://scn.sap.com/docs/DOC-8287 http://help.sap.com/nw74 Application Help


Content	Location on SAP Service Marketplace or in SAP Library
SAP Solution Manager Guides	<p>All SAP Solution Manager related guides, such as</p> <ul style="list-style-type: none"> • Master Guide • Configuration Guide • Security Guide Master Guide • Upgrade Guide • Solutions Operations Guide <p>are available at: http://service.sap.com/instguides </p> <p>Installation & Upgrade Guides > SAP Components > SAP Solution Manager > <Release> > </p>
Information about Maintenance Planning	<p>Maintenance Planning Guide at http://support.sap.com/mopz  section "Guides" > </p>

A.3 Description of Software Units

The following sections provide more details about product instances, standalone engines, optional standalone units and clients of SAP NetWeaver.

Note

Usage Type, Technical Usage, and Product Instance



The term *product instance* replaces the terms *usage type* and *technical usage* for SAP systems based on SAP NetWeaver 7.3 including enhancement package 1 and higher. For more information, see SAP Note [1877731](#) . Note that there is no terminology change for older releases and all mentioned terms can be used as synonyms.

Caution

Uninstalling additional product instance

Note that it is not possible to uninstall additional product instances and that this is also not supported by SAP.

Note

The Composite Voice (CE-VOICE) product instance has been removed with SAP NetWeaver 7.4. For more information, see: <http://help.sap.com/nw74>  [Application Help](#) > [Function-Oriented View](#) > [Composition Environment](#) > [Compatibility and Removed Usage Types](#) > 

A.3.1 Systems with Product Instances

Java Product Instances

The Java product instances are all based on Application Server Java (BASIC) and in addition require product instance NW Product Description (NW-MODEL) in the same system. Further dependencies exist that are shown in the following figure:

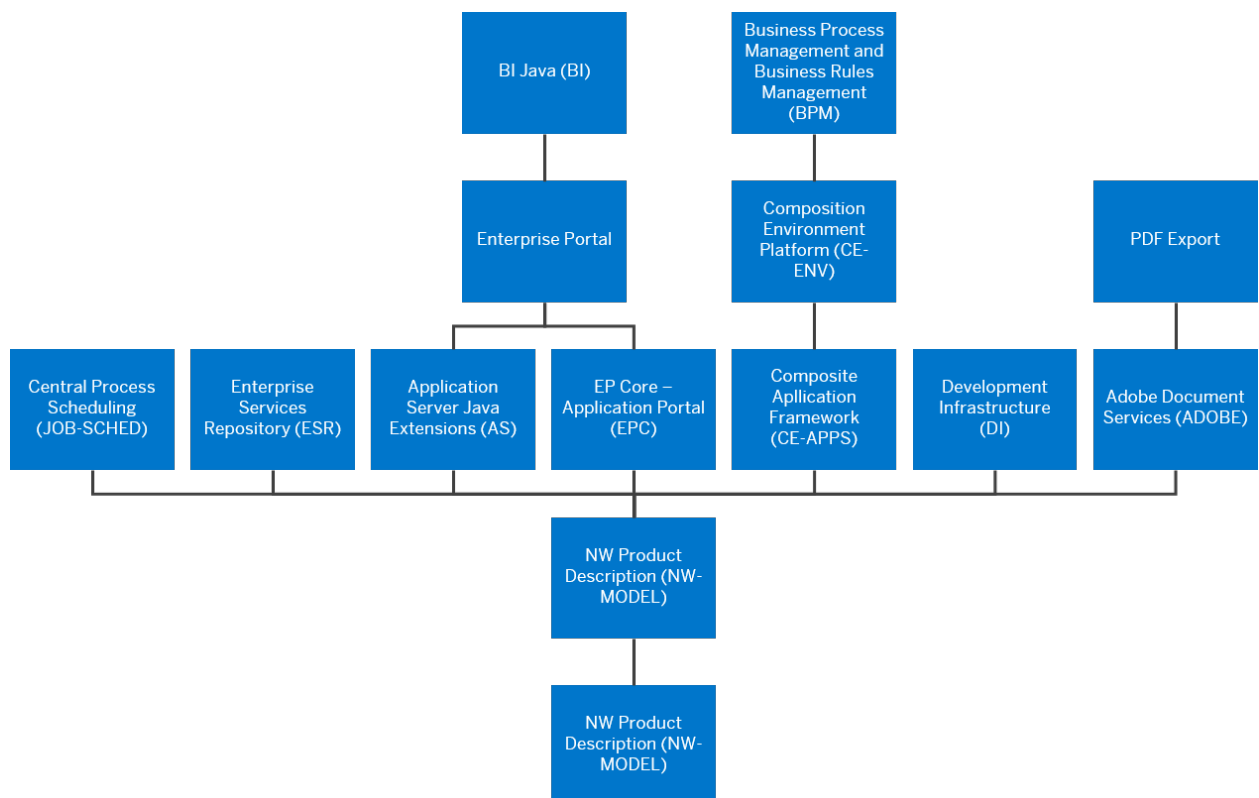


Figure 17: Java Product Instances

For more information and installation instructions, see the SUM guide for Java: *Update Guide – Updating SAP Systems Using Software Update Manager, for: Java*, section *Installing Additional Product Instances in an Existing SAP System*.

Compatibility Product Instances

Apart from the product instances described here, there are some discontinued product instances. If these product instances are installed in your source release system, they are preserved during the upgrade. However, they are not part of a new installation of SAP NetWeaver 7.4. For more information, see [Compatibility Product Instances \[page 106\]](#).

Adobe Document Services (ADS)

Adobe Document Services is a set of runtime services that provide a range of form and document creation and manipulation functions such as:

- Converting XML form templates (created using Adobe LiveCycle Designer) to PDF and various print formats
- Setting Adobe Reader rights to enable users to fill in and annotate forms, save and print them locally, and include digital signatures for authentication using the free Adobe Reader software
- Extracting data from SAP applications into Interactive Forms and transferring form data back into SAP applications using XML

Dependencies

Adobe document services depends on Application Server Java.

Functional Units

Adobe Document Services comprises the identically named functional unit.

Application Server ABAP (AS ABAP)

SAP NetWeaver Application Server for ABAP provides a complete development and runtime environment for ABAP-based applications. It is optimized for the development of highly scalable business applications. The ABAP development environment is used both for developing completely new applications and extending and modifying SAP standard applications for customers. The entire, powerful infrastructure of the Application Server for ABAP can be used, which even supports the creation of the most complex applications by large groups of developers.

Application Server Java (BASIC)

AS Java is used to provide the Java foundation of SAP NetWeaver using the Java Engine, a Java EE-compliant application server for running enterprise applications. In addition to the pure Java EE standard technologies, the Java Engine implements complementary technologies such as Web Dynpro or Web Services.

Dependencies

AS Java can be combined optionally with other Java-based product instances in one system.

Functional Units

Application Server Java comprises the following functional units:

Table 30:

Functional Unit	Description
CM Services (Change Management Services)	CM Services help you to manage your Java development. They provide services for creating development configurations, for importing and exporting, and for the deployment to runtime systems. CM Services enable you to set up team development with centrally managed development configurations. It also supports the automated deployment of build results on to central runtime system. The import and export service enables you to import and export Software Component Archives (SCAs) of a development configuration. When a transport system is needed, a development configuration can be integrated into the Change and Transport System (CTS+). To use CM Services, product instance DI is required.

Functional Unit	Description
Java Data Archiving	Java Data Archiving provides APIs to allow Java applications to connect to the XML Data Archiving Service for data archiving solutions. Java archiving is required for Java applications with a large volume of retention-relevant data.
Java Foundation	This is the Java foundation of SAP NetWeaver. Among its capabilities is the JEE Engine, a J2EE-compliant application server for running enterprise applications. In addition to the pure JEE standard technologies, the JEE Engine implements complementary technologies, such as Web Dynpro or Web Services, that are targeted at supporting large-scale, real-business application development projects.
Services Registry	The Services Registry is a registry for Web services. Located centrally within an SOA landscape, it contains entries for all services and service definitions in that landscape. The registered services are classified using semantic-rich classification systems to enable the browsing of services by classification.
System Landscape Directory	The System Landscape Directory (SLD) of SAP NetWeaver serves as a central information repository for your system landscape. A system landscape consists of hardware and software components that depend on each other with regard to installation, software updates, and demands on interfaces. The information in the SLD is used by various SAP tools.
XML Data Archiving Service	The XML Data Archiving Service (XML DAS) enables data to be stored using the WebDAV Storage Interface for the ILM Solution from SAP as certified in the interface BC-ILM. It allows both XML-sensitive storage used for JAVA Archiving or XML Archiving (see corresponding Functional units) and ILM aware archiving used in SAP NetWeaver ILM.

Application Server Java Extensions (AS)

AS Java Extensions enable you to create development components in SAP-specific technologies on top of JEE, for example, for service composition. In addition, you can enrich standard JEE technologies (such as Enterprise JavaBeans, Web services, and enterprise applications) with additional SAP-specific capabilities, such as service group configuration.

Dependencies

AS Java Extensions require AS Java and NW Product Description as a prerequisite in the same system.

Functional Units

AS Java Extensions do not comprise a functional unit.

BI Java (BI)

BI Java provides the Java runtime for several BW capabilities.



Dependencies

BI Java requires AS Java, NW Product Description, Java Extensions, EP Core – Application Portal, and Enterprise Portal in the same system. Usually, scenarios running on product instance BI Java also require product instance BW ABAP. While installing BI Java, the required product instances are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, Java Extensions, EP Core – Application Portal, and Enterprise Portal.

Functional Units

BI Java comprises the identically named functional unit.

Note

Note that ABAP+Java dual stack systems are not supported with SAP HANA database. For more information see the *End-to-End Implementation Roadmap for SAP BW, powered by SAP HANA* on <http://service.sap.com/instguidesnw74>  *Planning* .

Business Process Management and Business Rules Management

Business Process Management supports the process collaboration and creation of new innovative business processes based on standardized core processes. SAP Business Process Management enables collaborative composition of executable business processes based on a process model. Clearly defined business rules can be incorporated into processes from the outset. The tight integration with Business Rules Management enables business users with no coding skills to create and modify rules using decision tables.

With Business Rules Management you can author, execute, and manage business rules. The following key features are offered by Business Rules Management:

- Inference-based rule engine implementing RETE algorithm
- Support of different rules formats (declarative rules, decision table and flow rules)
- Rules Manager: a Web Dynpro Java based rules maintenance tool for business users
- Versioning and tracking changes of business rules
- Out-of-the-box Web service generation for rule sets
- Rules testing in the rules composer (NWDS)
- Public API for rules execution
- Tighter integration with Business Process Management

Dependencies

Business Process Management and Business Rule Management requires AS Java, NW Product Description, Composition Environment Platform and Composite Application Framework in the same system.

Functional Units

Business Process Management and Business Rule Management comprise the following functional units:

Table 31:

Functional Unit	Description
Process Server	Contains the function for Business Process Management
Rules Server	Contains the functions for Business Rules Management

Business Warehouse ABAP (BW ABAP)

Business Warehouse provides the infrastructure for the following functions:

- Data warehousing
- Various analytical technologies and functions
- Business planning functions
- Web-based and Excel-based reporting, analysis, and planning
- Information broadcasting to distribute BEx applications via various channels either as precalculated documents with past data, or as links with live data
- Open analysis interfaces that make available various interfaces for connecting front-end tools of third-party providers

Dependencies

BW requires AS ABAP as a prerequisite in the same system.

Note

For product instance BW, there is no installation option in the `software provisioning manager 1.0`. Instead, you have to install AS ABAP with `software provisioning manager 1.0` and then SAP NetWeaver 7.4 BI Content Add-On 7.47 SP05 (or higher) or SAP NetWeaver 7.4 BI Content Extensions Add-On 7.47 SP05 or higher.

Alternatively, there is SAP Netweaver 7.4 BI Content 7.57 or SAP Netweaver 7.4 BI Content Extensions Add-On 7.57 available for SAP NetWeaver 7.4 SPS 05 and higher. This version of BI Content Add-On will be used for providing additional data flows that make use of the new BW features delivered **only** from SAP NetWeaver 7.4 SPS 05 and higher. If you use the already existing BI Content Add-on 7.47 then the limitation is that you would **not** receive the data flows based on Netweaver 7.4 SPS05 (and higher) features; it also means that the already existing BI Content Add-on 7.47 would not support the new BW features valid only for SAP Netweaver 7.4 SPS 05 and higher. Considering the above limitation we recommend that you upgrade to BI Content Add-on 7.57.

Central Process Scheduling by Redwood (JOB-SCHED)

SAP Central Process Scheduling adds powerful cross-component scheduling functionality to the integration capabilities of SAP NetWeaver. SAP Central Process Scheduling has the following key characteristics:

- Centrality
There is only one central instance of this scheduler which takes control over all background processes in the entire landscape and allows for cross system scheduling.
- Event-Driven Scheduling
Dependencies between background processes can be defined not only time based but also event based.
- Real-Time Execution
All information about jobs is stored centrally and transferred to the remote systems immediately before job submission.

For more information, see SAP Developer Network at <http://scn.sap.com/community/cps-by-redwood>.

Dependencies

SAP Central Process Scheduling requires Application Server Java and NW Product Description in the same system.

Functional Units

SAP Central Process Scheduling comprises the functional unit Integrated Central Process Scheduling by Redwood.

Composite Application Framework (CE-APPS)

The Composite Application Framework is an abstraction layer that is used to develop all the components required for the service and object layer of a composite application. These components are:

- Business Objects (Entity Services)
- Business Logic (Application Services)
- Connectivity to external services (Web Services and BAPI/RFC, local and remote persistency)
- Service Provisioning

The Composite Application Framework also provides a comprehensive toolbox that includes the following features:

- A programming model
- Metadata
- Authorization concepts
- Modeling of relationships between business objects
- Integration into lifecycle management using SAP NetWeaver Development Infrastructure

This environment, which is based on a service-oriented architecture (SOA), enables developers to build applications that leverage the whole SAP NetWeaver technology platform without the need to use low-level APIs. This way, developers can focus on implementing the business logic of a composite application. The Service Composer, a graphical modeling tool, provides service simplification and composition. This greatly eliminates the need to write code for simplification and data mapping.

Dependencies

Composite Application Framework requires Application Server Java and NW Product Description in the same system.

Functional Units

Composite Application Framework comprises the functional unit Composite Application Framework Runtime providing the above-mentioned features.

Composition Environment Platform (CE-ENV)

The Composition Environment Platform provides a toolset and runtime for efficiently developing, running, and managing composite applications based on SOA principles. It builds upon proven technologies that have been enhanced and integrated to provide greater functionality and flexibility. The Composition Environment Platform offers you the following capabilities:

- User interface (UI) development: SAP NetWeaver Web Dynpro and SAP NetWeaver Visual Composer
Web Dynpro and Visual Composer are SAP's standard UI technologies based on the Model View Controller (MVC) for developing user interfaces. Web Dynpro Java or Visual Composer applications are developed within the SAP NetWeaver Developer Studio using a model-driven approach that minimizes manual UI coding and uses visual tools to design and reuse components.
- Business Logic
The Composite Application Framework enables Java business object modeling.
- Service Simplification and Composition
A graphical modeling capability simplifies and adapts Complex Services for easy consumption in Composition Environment. This greatly eliminates the need to write code for simplification and data mapping.

Dependencies

Composition Environment Platform requires Application Server Java, NW Product Description, and Composite Application Framework in the same system.

Functional Units

Composition Environment Platform comprises the following functional units:

Table 32:

Functional Unit	Description
Composition Environment Platform	Composition Environment Platform is the foundation for building and running composite applications.
ECM integration core	Enterprise Content Management (ECM) Integration Core facilitates the provision and consumption of Enterprise Content Management services using standardized interfaces. Therefore, it enables business applications to consume core ECM services provided by SAP as well as extended ECM services provided by partners and third-party vendors leveraging their ECM product offering. Besides the core runtime components, this functional unit contains the service provider interface (SPI) for exposing ECM services as well as the application programming interface (API) for making use of these services.
ECM Integration Services	ECM Integration Services offer additional services on top of ECM Integration Core functional. These supplementary services such as the server for World Wide Web Distributed Authoring and Versioning (WebDAV) can be leveraged by applications on top of the already exposed ECM services of the connected service providers.
Visual Composer	Visual Composer is a model-driven development tool used to create UI screens and Portal content using a drag-and-drop graphical environment, without the need to write code. Using Visual Composer you can create standalone applications such as form views and dashboards or UI screens, such as Web Dynpro screens. Visual Composer also provides Portal Content Modeling capabilities for generating roles, pages, iViews and other content for the SAP NetWeaver Portal.
Portal	Provides basic SAP NetWeaver Portal capabilities excluding the Web Page Composer capabilities, the data statistics tools of Portal Activity Reports, and the Activity Data Collector.
Universal Worklist	Offers users unified and centralized access to their work and relevant information from within the portal. It collects tasks and notifications from multiple provider systems – Business Workflow, Collaboration Task, Alert Framework, and KM Recent Notifications – and displays them in a single list.

Development Infrastructure (DI)

Development Infrastructure provides an infrastructure for developing Java-based applications on the SAP NetWeaver platform and enables versioning of source code, build and lifecycle management of these applications. DI takes care of all parts of the development process :

1. Version control system for central management of source code: The Design Time Repository (DTR) is a distributed version control system used in SAP NetWeaver Development Infrastructure to manage source code in development and lifecycle management processes.
2. Central build and archive management: The Component Build Service (CBS), gives developers access to the latest archive versions in a central archive storage and a central build triggered by developers or central lifecycle management processes.
3. Central landscape and transport management: CM Services enables you to set up team development with centrally managed development configurations. It also supports the automated deployment of build results on a central runtime system. The import and export service allow you to import and export Software Component Archives (SCAs) of a development configuration. If a transport system is needed, a development configuration can be integrated into the enhanced Change and Transport System (CTS+).
You can also use the Change Management Service (CMS), which gives administrators a central service to set up development landscapes for all development tasks and manage all transport processes for these tasks in the same UI. However, note that CMS is planned to be replaced by the CM Services in future releases. Therefore, we recommend using CM Services.

Dependencies

- DI requires AS Java and NW Product Description as a prerequisite in the same system. Optionally, it can be combined with other product instances in one system. However, depending on the size of the development project and the number of active developers, DI should use a dedicated system. For further details, see SAP Note [737368](#).
You can run the development infrastructure on an AS Java separately from the rest of your runtime systems in the system landscape for improved scalability.
If you use a development infrastructure, you have to install the Developer Studio feature [SAP NetWeaver Developer Studio Development Infrastructure Client](#).

Functional Units

DI comprises the functional unit SAP NetWeaver Development Infrastructure providing the above-mentioned functions.

Enterprise Portal (EP)

Enterprise Portal (EP) provides users with a single, uniform point of access to the applications, services, and information they need for their daily work. Moreover, the Portal offers business users the features to easily create and manage portal pages and generate their own content using the following capabilities:

- KM and Web Content Capabilities
EP provides basic document management capabilities and content services within SAP Enterprise Portal (KM). KM provides the basic capabilities that customers need to run their scenarios, as well as an extension framework for custom implementations.
These KM capabilities are also integrated into the Web Page Composer environment to enable flexible Web content management scenarios, bringing relevant information from user-generated content and business applications together in the portal.
- Portal Add-On with Forums and Wiki Capabilities
On top of EP, you can install the portal add-on including the forums and the wiki application.

The forums application provides a comprehensive range of discussion features, which are particularly suitable for community scenarios. Forums typically focus on a specific purpose such as support or human resources or they might offer customers a place to trade product tips and solutions. Intuitive user interfaces make it easy for users to ask questions, share information, post announcements to the community, escalate questions to experts, and to receive updates on posted comments. Users can create draft versions of their postings, exchange private e-mails with other forum users, and vote in polls.

Wikis provide a framework to easily share and contribute knowledge and information in an intuitive way within the company. They give employees, customers, suppliers, and partners a framework to collaborative writing, and help save time by making ideas available, sharing knowledge, and managing related information.

Dependencies

EP requires EPC, AS Java, NW Product Description, and Java Extensions as a prerequisite in the same system. Optionally, it can be combined with other product instances in one system.

Functional Units

Enterprise Portal comprises the following functional units:

Table 33:

Functional Unit	Description
Knowledge Management	Enables portal users to distribute, access, and manage un-structured information within an organization in a heterogeneous repository landscape. Capabilities include collaborative document authoring and publishing, version management, search and navigation with taxonomies, automated classification and subscription, and more.
Collaboration	Brings users, information, and applications together to ensure successful cooperation and interaction in the portal. These tools include collaboration rooms, instant messaging, e-mail, and calendar integration.

Enterprise Services Repository (ESR)

The Enterprise Services Repository (ES Repository) provides a central place where enterprise service definitions are modeled, stored, and maintained. It supports SAP's concept of building services based on the process component modeling methodology. The ES Repository offers the following features:

- Support of governed definitions of SOA assets (such as services and data types).
- Support of widely adopted open standards including Web Services and UDDI.
The ES Repository supports SAP-defined Global Data Types based on the Core Component Technical Specification standards (stack) (CCTS standards (stack)).
- Basis for enabling easy access to enterprise services - described with rich business classifications - when developing composite applications and business processes.

Dependencies

Enterprise Services Repository requires Application Server Java in the same system.

Functional Units

Enterprise Services Repository comprises the identically named functional unit providing the above mentioned capabilities.

EP Core – Application Portal (EPC)

EP Core – Application Portal (EPC) provides the basic portal capabilities for SAP NetWeaver. It provides a uniform entry point to content and applications in a consistent, role-based manner. It offers a single point of access through a Web front end to SAP and non-SAP information sources, enterprise applications, information repositories, databases and services across organizational and technical boundaries – all integrated into a single user experience. EPC alone provides a leaner portal installation and implementation where the full enterprise portal capabilities (such as knowledge management tools) are not needed.

The EPC product instance contains the following capabilities that will help you manage your content and processes:

- The core portal capabilities include various tools and service for managing portal content, users, and connections to connected systems such as Single-Sign-On, tools for application integration, roles and permissions, changing the portal look and feel with the new Ajax Framework, and lifecycle management (transport).
- Integration of several SAP Enterprise Portals and third-party portals into one harmonized SAP Enterprise Portal acting as the single point of access to all the business related applications and services in the organization.
- Web Page Composer (WPC): this is an integral part of EPC providing powerful capabilities for business users to easily create and manage enriched portal pages. Web Page Composer supports professionals creating interactive portal pages.

Dependencies

EPC requires AS Java and NW Product Description as a prerequisite in the same system.

Functional Units

EP Core – Application Portal comprises the following functional units:

Table 34:

Functional Unit	Description
Portal	Provides basic SAP Enterprise Portal capabilities
Universal Worklist	Provides the Universal Worklist Capabilities

Mobile

Product instance Mobile is used to enable field personnel to participate in a business process in an “occasionally connected” mode. Occasionally connected means that a direct connection (using WLAN or GPRS) between the mobile device and back end is only established at certain times – at synchronization points, when the Mobile Server (that is, the system with product instance Mobile) and Mobile Client exchange data in order to keep the server and client updated. This enables the user to perform process tasks completely independently from the back-end system, which is extremely helpful if a steady connection cannot be guaranteed or might be too expensive. To realize this product instance, an intelligent application needs to run on each device containing a user interface, business logic, and data handling. Mobile includes the Data Orchestration Engine (DOE), an ABAP-based message-oriented middleware. The Data Orchestration Engine consists of the following:

- A design time tool for defining data objects and the distribution of data.
- A runtime to replicate, synchronize and distribute data between the components of the system landscape. This includes, for example, messaging, filling queues, and sending data to the back end.

Dependencies

Mobile is not an installable software unit. As of SAP enhancement package 1 for SAP NetWeaver 7.3, SAP NetWeaver Mobile is available as add-on. To set up a Mobile system, you install and configure AS ABAP. On top of the AS ABAP system, you install and configure the SAP NetWeaver Mobile add-on separately.

NW Product Description (NW-MODEL)

NW Product Description contains metadata for SAP NetWeaver, for example, about comprised software components and their interdependencies. NW Product Description is always included when you install a Java product instance.

PDF Export

With PDF Export, you can create print versions of lists that are displayed using ALV for Web Dynpro for ABAP (SAP List Viewer) and ALV for Web Dynpro for Java.

Dependencies

PDF Export depends on Adobe Document Services, Application Server Java and NW Product Description.

Process Integration (PI)

PI consists of core components that model, design, automate, and integrate processes in one or more application systems. For the integration of internal and cross-company processes, PI is used to incorporate all the functions of what was formerly known as Exchange Infrastructure (XI). In addition, PI contains core components for cross-component Business Process Management (ccBPM) for application-embedded and application-unbounded processes.

Dependencies


PI requires AS ABAP, AS Java, NW Product Description, AS Java Extensions, PI Adapter Engine, and Enterprise Services Repository as a prerequisite in the same system.

For installing PI, it is mandatory to have a dedicated PI system. This applies to development, quality, and production landscapes. It is a prerequisite that no other system in your system landscape has a higher release and enhancement package level than the PI system. If you want to upgrade or install an application in your system landscape, you first have to make sure that the current release and enhancement package level of the PI system is on the same level - if required, you have to upgrade the PI system first to the new or a higher release. In a dedicated PI system, this can be accomplished with a minimum of downtime. Also, the PI system would not be affected by the downtime of other product instances running in the same system.

Functional Units

Process Integration comprises the functional unit SAP Process Integration.

Restrictions for Systems with Multiple Product Instances

- If you have one system with multiple product instances, be aware that we do not provide standard tools for separating these product instances and distribute them to multiple systems at a later stage. For example, if you have a system with product instances A and B, you are not able to migrate it with SAP standard tools into two systems, one with product instance A only and the other with product instance B only.
In addition, we do not provide standard tools for merging multiple systems with different product instances into one system with multiple product instances at a later stage. If you want to perform these tasks, you require specific project support. The only exception is the dual-stack split procedure that offers to split an optional dual-stack system into two separate systems: one based on AS ABAP, the other one based on AS Java. For more information about the dual-stack split, see <http://scn.sap.com/docs/DOC-25162> .

The following figure shows that SAP standard system copy and migration tools do not support you in separating or merging systems with product instances:

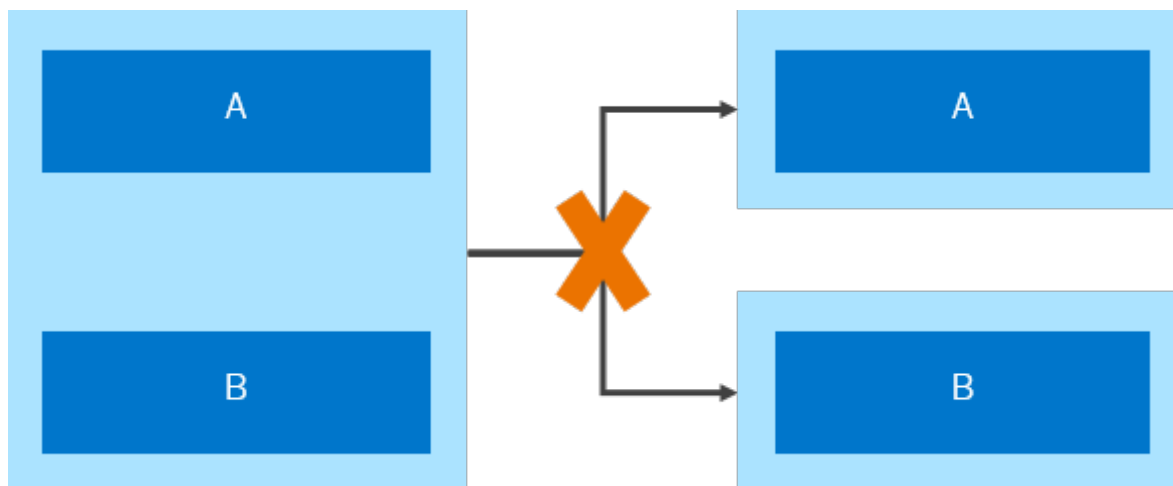


Figure 18: Separating systems with product instances are not supported with SAP standard system copy and migration tools

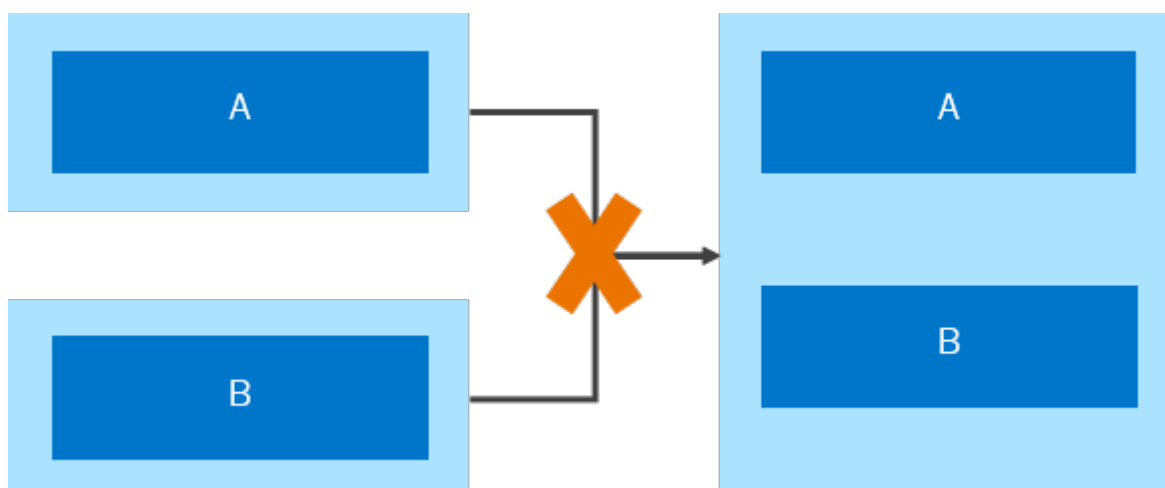


Figure 19: Merging systems with product instances are not supported with SAP standard system copy and migration tools

- Although you can use one system for multiple product instances, client restrictions apply to product instance BW ABAP. For BW ABAP, you should reserve a dedicated client for reporting purposes. In this client, activate the SAP NetWeaver BI Content Add-On as required.

A.3.2 Optional Standalone Units

Advanced Adapter Engine (PI Adapter Engine)

You use the Advanced Adapter Engine to connect to SAP systems (RFC adapter, IDoc Adapter, and ABAP proxies) and external systems. You use the various adapters in PI Adapter Engine to convert XML- and HTTP-based messages to the specific protocol and format required by these systems, and the other way around.

You can use the following adapters:

- RFC Adapter
- SAP Business Connector Adapter
- File/FTP Adapter
- JDBC Adapter
- JMS Adapter
- SOAP Adapter
- Marketplace Adapter
- Mail Adapter
- RNIF Adapter
- CDIX Adapter
- IDoc Adapter (Advanced Adapter Engine) (adapter type IDOC_AAE)
- HTTP Adapter (Advanced Adapter Engine) (adapter type HTTP_AAE)

You can use the Advanced Adapter Engine which is included in the PI system as a central adapter engine. Optionally, for performance reasons, you can install a non-central Advanced Adapter Engine on a separate host.

Dependencies

The Advanced Adapter Engine requires AS Java, NW Product Description, and AS Java Extensions as a prerequisite in the same system. These product instances are automatically installed when you install the Advanced Adapter Engine.

Functional Units

The Advanced Adapter Engine comprises the functional unit Advanced Adapter Engine.

Advanced Adapter Engine Extended

The installation option Advanced Adapter Engine Extended (AEX) consists of core components to model, design, automate, and integrate processes in one or more application systems. The Advanced Adapter Engine Extended provides the following capabilities:

- Connectivity capabilities of the Advanced Adapter Engine (AAE)
- Design and configuration tools to set up scenarios that are based on the AAE. In particular, for design and configuration you can use the ES Repository and the Integration Directory. The Integration Directory installed with AEX contains a subset of configuration options required for the configuration of message processing by the AAE, basically the integrated configuration.
- Mediation capabilities of AAE

You can use the following adapters:

- RFC Adapter
- SAP Business Connector Adapter
- File/FTP Adapter
- JDBC Adapter
- JMS Adapter
- SOAP Adapter
- Marketplace Adapter
- Mail Adapter
- RNIF Adapter
- CDIX Adapter
- IDoc Adapter (Advanced Adapter Engine) (adapter type IDOC_AAE)

- HTTP Adapter (Advanced Adapter Engine) (adapter type HTTP_AAE)

Dependencies

Advanced Adapter Engine Extended requires AS Java, NW Product Description AS Java Extensions, PI Adapter Engine, and Enterprise Services Repository as a prerequisite in the same system.

Functional Units

Advanced Adapter Engine Extended comprises the identically named functional unit.

Process Integration (PI)

PI consists of core components that model, design, automate, and integrate processes in one or more application systems. For the integration of internal and cross-company processes, PI is used to incorporate all the functions of what was formerly known as Exchange Infrastructure (XI). In addition, PI contains core components for cross-component Business Process Management (ccBPM) for application-embedded and application-unbounded processes.

Dependencies

PI requires AS ABAP, AS Java, NW Product Description, AS Java Extensions, PI Adapter Engine, and Enterprise Services Repository as a prerequisite in the same system.

For installing PI, it is mandatory to have a dedicated PI system. This applies to development, quality, and production landscapes. It is a prerequisite that no other system in your system landscape has a higher release and enhancement package level than the PI system. If you want to upgrade or install an application in your system landscape, you first have to make sure that the current release and enhancement package level of the PI system is on the same level - if required, you have to upgrade the PI system first to the new or a higher release. In a dedicated PI system, this can be accomplished with a minimum of downtime. Also, the PI system would not be affected by the downtime of other product instances running in the same system.

Functional Units

Process Integration comprises the functional unit SAP Process Integration.

A.3.3 Standalone Engines

For SAP NetWeaver, the following standalone engines are available:

Adapter Engine Java SE

Adapter Engine (Java SE) is a separate software unit. You can use it only if you have SAP NetWeaver systems with product instance PI in your system landscape. It has to be installed manually. You use the Adapter Engine (Java SE) to connect to external systems. Using the various adapters in the Adapter Engine (Java SE), XML and HTTP-based messages can be converted to the specific protocol and format required by such systems, and the other way around. The Adapter Engine (Java SE) only provides some of these adapters as a standalone version with restricted functions for operating systems that do not support SAP PI, but that have at least a Java Runtime Environment 5.0. Therefore, you should use the Adapter Engine (Java SE) only if the platform prerequisites do not allow you to use the Advanced Adapter Engine.

Content Server

Content Server is a separate server instance that is used to store documents or other types of content related to SAP applications. The accompanying cache server can cache content if your company operates in several locations. This reduces load on the wide area network when working with documents.

SAP Gateway Foundation

As of SAP NetWeaver 7.4 the central software components of SAP Gateway have been directly integrated into SAP NetWeaver in the form of software component SAP Gateway Foundation (SAP_GWFND). This component is automatically part of SAP NetWeaver 7.4 and higher.

SAP Gateway Foundation facilitates easier provisioning and consumption of business logic and content of SAP back-end systems for mobile and web applications. It aims to reduce the complexity and the skill set required to access SAP data, thereby removing deployment barriers. Simple interfaces also help to shorten development times.

SAP Gateway Foundation enables people-centric applications to consume SAP Business Suite data through popular platforms and devices (such as the iPad and Blackberry) in an easy and standards-based manner. It is a framework that connects business users to SAP systems using consumer technologies, groupware, and mobile devices and is based on open standards (such as the Atom Publishing Protocol and OData) that offer simple services based on the REST principle.

Depending on your development requirements and where you want to develop SAP Gateway Foundation content, you can install SAP NetWeaver in either an SAP Business Suite back-end system (embedded deployment) or in an SAP Gateway Foundation hub system (central hub deployment).

For more information, see <http://help.sap.com/netweaver> ► *SAP NetWeaver Platform* ► *SAP NetWeaver <your release>* ► *Application Help* ► *Function-Oriented View* ► *SAP Gateway Foundation (SAP_GWFND)* ►.

liveCache

liveCache is a database engine for managing complex objects in scenarios where large volumes of data must be permanently available and modifiable.

Search and Classification (TREX)

SAP NetWeaver Search and Classification (TREX) offers an integrated set of services. TREX services include search and retrieval in large document collections, text mining, automatic document classification, and search and aggregation over structured data in SAP applications. TREX can handle text from documents in numerous formats, including Microsoft Office and Adobe formats (PDF), and more than 30 languages. TREX search options, such as exact, Boolean, fuzzy, or linguistic search, and classification options such as query-based or example-based classification, offer great power and flexibility to end users.

The BW accelerator is based on TREX technology. You need an installation based on 64-bit architecture for the BW accelerator. The hardware partners provide this variant already preconfigured as the BW accelerator box. Note that a TREX installation configured for searching in metadata and documents based on 32-bit architecture cannot be used for the BW accelerator. Accordingly, a BW accelerator box also cannot be used for searching in metadata and documents. In order to be able to use the search function and the BW accelerator, you need separate installations.

Web Dispatcher

The Web Dispatcher lies between the Internet and your SAP system. It is the entry point for HTTP(s) requests into your system, which consists of one or more SAP NetWeaver application servers. As a software Web switch, the Web dispatcher can reject connections or accept them. When it accepts a connection, it balances the load to ensure even distribution across the servers.

You can use the Web dispatcher in ABAP/Java systems and in pure Java systems, as well as in pure ABAP systems.

It is also beneficial to use the Web Dispatcher if you do not need security functions (entry point in the demilitarized zone (DMZ), SSL, URL filtering), but you simply want to balance the load between multiple SAP NetWeaver Application Server instances.

Since Web Dispatcher is optional for every SAP system, it is not contained in the system landscapes of the use cases in this documentation.

For more information, see the SAP Library at <http://help.sap.com/nw74> ► *Application Help* ► *SAP Function-Oriented View* ► *Application Server* ► *Application Server Infrastructure* ► *SAP Web Dispatcher* ►.

A.3.4 Clients

With SAP NetWeaver, you can use the front-end clients and tools described below:

Adobe LiveCycle Designer

Adobe LiveCycle Designer enables the creation of forms that combine high-fidelity presentation with XML data handling. The easy-to-use graphical interface of Adobe LiveCycle Designer enables users to quickly design forms, maintain form templates, define a form's business logic, make changes, and preview forms before they are deployed as Adobe PDF files.

SAP NetWeaver Business Client

The SAP NetWeaver Business Client (NWBC) is a high fidelity desktop client that allows users to display their assigned roles and to launch applications. SAP NetWeaver Business Client offers a unified environment for and a single point of entry to SAP business applications and technologies. NWBC is ideal for displaying business applications such as classical SAP GUI UIs, Web Dynpro UIs, BSP pages, and other content using its multiple rendering engines. NWBC provides role-based access to applications either via the portal or directly using PFCG roles. In addition to the basic capabilities detailed above, the SAP NetWeaver Business Client makes use of its tight desktop integration to provide additional benefits such as desktop search functionality. In the newest SAP NetWeaver Business Client version you will find the improved user interface (UI) based on the SAP Signature design. This UI offers in part an expert-based interactive paradigm and a superior look and feel matching the expectations of today's users aiming to maximize their daily activities.

The SAP NetWeaver Business Client is one of the main components of the User Interface Add-On for SAP NetWeaver. For more information, see the SAP Help Portal at <http://help.sap.com/nw-uiaddon> ► *Application Help* ►.

Business Explorer (BI Add-On)

Business Explorer provides flexible reporting and analysis tools for strategic analyses and decision-making support within a company. These tools include query, reporting, and analysis functions. As an employee with access authorization, you can evaluate past or current data on various levels of detail and from different perspectives, not only on the Web but also in Microsoft Excel.

You can use Business Explorer Information Broadcasting to distribute Business Intelligence content by e-mail either as precalculated documents with historical data, or as links with live data. You can also publish it to the SAP Enterprise Portal.

Additionally to Business Explorer you may want to consider using tools from the SAP BusinessObjects Analysis family, such as Analysis, edition for Microsoft Office. The SAP BusinessObjects Analysis clients are specifically designed for the needs of BW users. Note that SAP BusinessObjects products require separate licenses.

SAP GUI

SAP offers three different client applications for accessing ABAP applications in SAP systems (such as SAP NetWeaver systems with product instance AS ABAP). This SAP GUI family consists of:

- **SAP GUI for HTML**
SAP GUI for HTML is based on the SAP integrated Internet Transaction Server (ITS) which is included in the installation of SAP NetWeaver systems as of SAP NetWeaver 7.0. On the client side, only a suitable browser and a virtual machine are required. For information about supported browser versions, see the Product Availability Matrix on SAP Service Marketplace at <http://support.sap.com/pam>.
- **SAP GUI for the Java environment (SAP GUI for Java)**
SAP GUI for Java is a generic SAP GUI that covers a variety of platforms.
For more information about the installation of SAP GUI for Java, see the documentation *Installation Guide – SAP Front End*.
- **SAP GUI for the Windows environment (SAP GUI for Windows)**
SAP GUI for Windows is SAP's universal client for accessing all SAP applications built on ABAP technology. It is available on the Microsoft Windows platform only and offers the broadest feature set of all members of the SAP GUI family.
For more information about the installation of SAP GUI for Windows, see the *Installation Guide – SAP Front End*.

SAP GUI also includes optional add-ons, such as the Business Explorer (BI add-on) and KW add-on, which might be required to use certain SAP NetWeaver capabilities.

i Note

Data warehousing: SAP GUI for HTML and SAP GUI for Java do not have all the capabilities of SAP GUI for Windows. BEx Query Designer, BEx Analyzer and UIs with network controls are not supported with SAP GUI for HTML and SAP GUI for Java.

The following SAP GUI versions are supported with SAP NetWeaver 7.4:

- SAP GUI for Windows 7.30 (or higher)
- SAP GUI for Java 7.30 (or higher)
- SAP integrated ITS

For more information about the SAP GUI family, see SAP Community Network at <http://scn.sap.com/community/gui>.

Mobile Client

Mobile Client is installed locally on mobile devices, and is equipped with a Web server, a database layer, and a framework for the mobile applications. Staff working remotely can therefore work offline and do not have to wait for a network connection to complete time-critical business applications. Product instance Mobile offers tools for synchronization and data replication that make the data of the mobile device consistent with that of the back-end system.

Modeling Tools for SAP BW powered by SAP HANA

The Modeling Tools for SAP BW powered by SAP HANA (BW Modeling Tools) represents a new modeling IDE (Integrated Development Environment) build on top of the Eclipse platform.


Its main objective is to support BW model developers in today's increasingly complex BI environments by offering state-of-the-art modeling tools. These tools include integration with SAP HANA modeling and the consumption of HANA elements in BW Open ODS Views or CompositeProviders with powerful UI (user interface) capabilities.

SAP NetWeaver Developer Studio

The SAP NetWeaver Developer Studio (NWDS) is SAP's Integrated Development Environment (IDE) for Java and is based on the open-source tools framework Eclipse 3.5. With the SAP NetWeaver Developer Studio, you can develop Java EE 5 applications from scratch using the built-in support for new technologies such as EJB 3.0 and JSF 1.2.


Note

NWDS 7.3 EHP1 as development environment for NetWeaver 7.4

Since SAP NetWeaver Developer Studio 7.4 is not available, you can use the SAP NetWeaver Developer Studio of the latest Support Package of SAP enhancement package 1 for NetWeaver 7.3 as development environment for SAP NetWeaver 7.4. For more information, see SAP Note [1791485](#) .

SAP Enterprise Services Explorer Tool for Microsoft .NET

As part of its service-oriented architecture (SOA) offering, SAP provides a set of consumer tools that allow the discovery and consumption of enterprise services from various development environments, such as NetWeaver Developer Studio, Visual Composer, and Microsoft Visual Studio. SAP Enterprise Services Explorer tool for Microsoft .NET (ES Explorer for .NET) is an add-on for Microsoft Visual Studio 2005 and Microsoft Visual Studio 2008 that helps to leverage SOA by enabling .NET developers to discover SAP enterprise services and consume them in their applications, as well as publish their own custom services. It is an important element of SAP – Microsoft interoperability.

To download the tool, access documentation and other resources, see <http://scn.sap.com/community/interoperability/microsoft-net> .

For the most up-to-date information about ES Explorer for .NET, see SAP note [1259258](#) .

A.4 Compatibility Product Instances

Compatibility product instances are product instances that have been discontinued and are therefore not part of the standard SAP NetWeaver installation. If you upgrade from a previous release, these product instances will of course still exist in your systems if they have been present in the source release system.

There might be reasons for which you want to install these product instances. You can do this using the Software Update Manager. Note that you can install these product instances only on existing SAP NetWeaver 7.4 Java systems with at least product instance AS Java.

For more information and installation instructions, see the SUM guide for Java: *Update Guide – Updating SAP Systems Using Software Update Manager, for: Java*, section *Installing Additional Product Instances in an Existing SAP System*.

Demo Applications

Demo Applications illustrate the usage of SAP Composition Environment for previous releases.

Guided Procedures

Guided Procedures is a framework for modeling and managing workflows using simple and user-friendly tools. Guided Procedures enables access to multiple backend systems, consistently combining different types of services and applications into processes. In addition, Guided Procedures supports collaboration, ad-hoc items, and offline task management using interactive forms. It provides role-based access to tools and resources and guidance through the workflows at runtime, thereby helping end users to easily identify and complete their tasks.

Dependencies

Guided Procedures require Application Server Java, Composition Application Framework, Composition Environment Platform as a prerequisite in the same system.

Functional Units

Guided Procedures comprise the identically named functional unit providing the above mentioned capabilities.

NWDS Update Site

You use the NWDS update site when you develop composite applications using several Developer Studio installations. An update site contains all features for the Developer Studio. You can initiate a check for updates or additional features in the Developer Studio and install them when available. The update site capability mirrors the SAP Developer Studio update site on SAP Service Marketplace for an improved update performance. It does not run on a multi-node cluster.

The NWDS update site has been replaced by an Eclipse-based solution.

Dependencies

NWDS update site requires Application Server Java as a prerequisite in the same system.

Important Disclaimers and Legal Information

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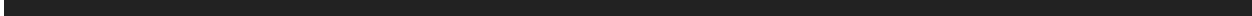
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