



Master Guide SAP NetWeaver® 7.0

Target Audience

- System administrators
- Technology consultants

CUSTOMER

Document version: 1.5 – 2012-10-18

Material number: 50101346

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

Typographic Conventions

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

Document History



CAUTION

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

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

Version	Date	Description
1.31	2008-03-18	Small error correction in <i>Shared Services</i>
1.32	2008-04-02	Small changes in <i>Examples of the Overall System Landscape of Shared Services</i>
1.33	2008-04-30	<ul style="list-style-type: none"> ■ <i>Reference System Landscapes</i> and <i>SAP NetWeaver Operations</i> updated ■ Renaming of SAP Solution Manager 4.0 as SAP Solution Manager 7.0
1.34	2008-05-29	Information updated about dedicated PI system
1.35	2008-07-29	New IT scenario included: Accelerating Global Delivery of Applications
1.36	2008-09-04	<ul style="list-style-type: none"> ■ Information about SAP Enhancement Package 1 for SAP NetWeaver 7.0 added ■ Installation of BI and BI Java in separate systems ■ System landscapes of some IT scenarios changed (AS ABAP and AS Java in separate systems)
1.37	2008-09-23	Minor changes
1.38	2008-11-21	<ul style="list-style-type: none"> ■ New scenario <i>Enterprise Search</i> included ■ At least BI Content Add-On 03 required
1.39	2009-05-06	<ul style="list-style-type: none"> ■ Mobile - recommended SP level changed ■ Recommendations for SAP NetWeaver Development Infrastructure added ■ Enterprise Search section reworked ■ Obsolete system landscape information removed ■ Several minor changes
1.40	2010-04-15	<ul style="list-style-type: none"> ■ Updates for enhancement package 2 ■ Updates for <i>Information Lifecycle Management</i>
1.41	2010-10-20	Minor changes
1.42	2010-11-26	<ul style="list-style-type: none"> ■ Updates for <i>Information Lifecycle Management</i> ■ Information added about SAP NetWeaver Portal, enterprise workspaces
1.43	2011-12-01	Obsolete guide references removed
1.44	2011-12-07	Minor changes
1.5	2012-10-18	Updated Version: <ul style="list-style-type: none"> ■ Information about Maintenance Planning Guide and SAP NW LVM added ■ SAPehphi tool replaced by Software Update Manager ■ Information regarding SAP dual-stack systems added ■ SDN replaced by SCN - Links updated

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1 Introduction

This Master Guide provides you with a central starting point for the technical implementation of SAP NetWeaver®.

SAP NetWeaver is an open integration and application platform that integrates people, information, and processes into one hub, across technologies and organizations, to reduce the total cost of ownership (TCO).

Structure of the Master Guide

The Master Guide consists of the following sections:

- *Introduction*
- *Before You Start*
Contains information about this document, important things that you need to know before you start, and information on how to access the SAP Library.
- *SAP NetWeaver Overview*
Describes the building blocks of SAP NetWeaver 7.0 and gives a general explanation of the transition from older releases to SAP NetWeaver 7.0.
- *System Landscape*
Contains information about how to install your system landscape.
- *IT Scenarios*
Introduces the IT scenarios and explains how to install them.
- *Appendix*
Contains a list of documentation referenced in this document.



CAUTION

Make sure that you have the latest version of the *Master Guide* by checking SAP Service Marketplace immediately before starting the installation.

The *Master Guide* is regularly updated on SAP Service Marketplace at ► <http://service.sap.com/instguidesnw70> → *Installation* ◀.

Constraints

The business scenarios presented here are examples of how to use SAP software in your company. The business scenarios are intended only as models and will 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.

2 Before You Start

2.1 Quick Start

If you are an experienced consultant looking for quick access to the most important information required to implement a specific scenario, we recommend that you read the following sections:

1. *Mapping of IT Scenarios to Installable Software Units* [page 17]
This section tells you which software units you need to install to realize a specific IT scenario.
2. In the *scenario-specific sections* [page 75], see the system landscape information and the implementation sequence.
3. To be able to draw a complete picture of the system landscape, see *Shared Services* [page 58]. Read also the *Technical Infrastructure Guide*, which explains the distribution of landscape components to host.

2.2 SAP Notes

You **must** read the following SAP Notes **before** you implement SAP NetWeaver.

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> ◀.



NOTE

The SAP Notes related to SAP NetWeaver 7.0 are also listed on SAP Service Marketplace at ► <http://service.sap.com/sapnotesnw70> ◀.

List of Important SAP Notes

SAP Note Number	Title	Description
852008	Release Restrictions of SAP NetWeaver 7.0 (2004s)	Some restrictions apply to the productive use of SAP NetWeaver. These are documented in this SAP Note.
1164532	Release Restrictions for SAP EHP1 for SAP NetWeaver 7.0	This note provides information on the limitations that exist regarding the productive use of certain functions included in enhancement package 1.
1313850	Release Restrictions for SAP EHP2 for SAP NetWeaver 7.0	This note provides information on the limitations that exist regarding the productive use of certain

SAP Note Number	Title	Description
		functions included in enhancement package 2.

2.3 More Information

The following table contains links to information available on SAP Service Marketplace, in the SAP Library, or in the SAP Community Network (SCN), which is important for implementing SAP NetWeaver:

Content	Location
The latest version of the installation and upgrade guides for SAP NetWeaver	► http://service.sap.com/instguidesnw70 ◀
Information about supported platforms (operating systems, databases, browsers) for all SAP NetWeaver components	► http://service.sap.com/pam ◀
Landscape Design and Architecture: Landscape Management Tools	► http://scn.sap.com/docs/D0C-8140 ◀
Landscape Design and Architecture: SAP NetWeaver Distribution Models	► http://scn.sap.com/docs/D0C-7744 ◀
Sizing of SAP NetWeaver	► http://service.sap.com/sizing ◀
Information about security	<i>SAP Security Guide</i> : See the <i>SAP Library</i> [page 14] at ► <i>SAP NetWeaver</i> → <i>Security</i> → <i>SAP NetWeaver Security Guide</i> ◀
Information about the technical operation of SAP NetWeaver	<i>Technical Operations Manual</i> : See the <i>SAP Library</i> [page 14] at ► <i>SAP NetWeaver Library</i> → <i>Administrator's Guide</i> → <i>Technical Operations Manual</i> ◀
Information about SAP NetWeaver Support Package Stacks	► http://service.sap.com/sp-stacks ◀
Information about installing SAP NetWeaver Support Package Stacks	► http://service.sap.com/MaintenanceNW70 → <i>Support Package Stack Guide – SAP NetWeaver</i> ◀

2.4 Accessing the SAP Library

For more information about SAP NetWeaver, access the SAP Library from any of the following locations:

- **SAP Help Portal** at ► <http://help.sap.com/nw70> ◀

Select the product version and the required language.



CAUTION

The SAP Help Portal contains the latest version of the SAP Library. Therefore, we recommend that you use this channel to access the SAP Library.

- An **SAP system** if you have installed the online documentation: Choose ► *Help* → *SAP Library* ◀
The browser starts.
- The **help files** on the online documentation CDs or DVDs

If you want to view the help files in HTMLHelp format from the online documentation CDs or DVDs, you need a PC running Microsoft Windows to install the HTMLHelp Viewer.

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3 SAP NetWeaver Overview

The SAP NetWeaver technology platform facilitates the integration and alignment of people, information, and business processes across organizational and technological boundaries. SAP NetWeaver easily integrates information and applications from virtually any source. It interoperates with and can be extended using the primary market technologies – Microsoft .NET, Sun's J2EE, and IBM WebSphere. SAP NetWeaver is the technical foundation for the SAP® Business Suite family of business applications and SAP®xApps™ family of composite applications and ensures maximum reliability, security, and scalability, so that mission-critical business processes run smoothly. And by providing preconfigured business content, it helps reduce the need for custom integration and lowers TCO.

SAP NetWeaver 7.0 is structured by IT practices, IT scenarios, and usage types. These structuring elements introduce a new view of SAP NetWeaver as briefly outlined in the following:

- **IT practices**
Each practice can be broken into one or more IT scenarios, similar to a business scenario. By addressing customers' immediate IT needs, organizations can implement IT practices projects in stages, since the platform's components are tightly integrated within a sustainable cost structure.
- **Using IT scenarios**, SAP has introduced a scenario-based go-to-market approach that helps address customers' most important business issues more flexibly, by providing them with modular industry-specific solutions, with a fast total return on investment (ROI) and predictable investment levels that support their end-to-end business processes.
- **Usage types** determine the role a system plays in a given (distributed) scenario. They represent the capabilities offered by a collection of installed and configured (technical) software components. Usage types are a new structuring element for SAP software on a technical level.

3.1 Mapping of IT Scenarios to Installable Software Units

The table below shows the mapping of *IT scenarios* [\[page 22\]](#) to the SAP NetWeaver software units. SAPNetWeaver consists of the following types of software units (follow the links for detailed information):

- *Systems with usage types* [\[page 26\]](#)
These are SAP NetWeaver systems that are configured for a specific purpose.
- *Standalone engines* [\[page 37\]](#)

3.1 Mapping of IT Scenarios to Installable Software Units

Standalone engines provide one specific (server) function in combination with one or more SAP NetWeaver systems.

■ *Clients* [\[page 39\]](#)

Clients are used by (many) people on their local front-end PCs to access functions offered by systems of SAP NetWeaver or standalone engines in the system landscape.

**NOTE**

Be aware that you require an SAP Solution Manager system (minimum release 3.2 SP8) to install or upgrade to SAP NetWeaver 7.0. An SAP Solution Manager system is required to generate the SAP Solution Manager key needed during the installation or upgrade process. Without this key, the installation or upgrade process cannot continue. For more information, see SAP Note [805390](#).

IT Scenario	IT Scenario Variant	Usage Types	Standalone Engines	Clients
<i>Running an Enterprise Portal</i> [page 75]	All IT scenario variants	<ul style="list-style-type: none"> ■ AS Java ■ EPC ■ DI [Optional: Only for development of your own content] 		
<i>Accelerating Global Delivery of Application</i> [page 78]	All IT scenario variants		Accelerated Application Delivery	
<i>Enterprise Knowledge Management</i> [page 79]	Content Integration and Management	<ul style="list-style-type: none"> ■ AS Java ■ EPC ■ EP 	TREX	
	Content Creation, Publication, and Access	<ul style="list-style-type: none"> ■ AS Java ■ EPC ■ EP (optional with Web Page Composer add-on) 	TREX	
	Documentation, Training Materials and Manuals Management	<ul style="list-style-type: none"> ■ AS Java ■ AS ABAP 	<ul style="list-style-type: none"> ■ TREX ■ Content Server 	SAP GUI
<i>Enterprise Search</i> [page 84]	Enabling Embedded Search	AS ABAP	TREX	SAP GUI
<i>Enabling User Collaboration</i> [page 86]	Collaboration in Virtual Rooms	<ul style="list-style-type: none"> ■ AS ABAP ■ AS Java ■ BI ■ EPC ■ EP ■ BI Java 	TREX	<ul style="list-style-type: none"> ■ SAP GUI ■ SAP Business Explorer (BI)

3.1 Mapping of IT Scenarios to Installable Software Units

IT Scenario	IT Scenario Variant	Usage Types	Standalone Engines	Clients
		[Optional: Run the service Application Sharing Server standalone: ■ AS Java ■ EPC ■ EP]		
	Ad-hoc Collaboration	■ AS ABAP ■ AS Java ■ BI ■ EPC ■ EP (forums application add-on is optional) ■ BI Java [Optional: Run the service Application Sharing Server standalone: ■ AS Java ■ EPC ■ EP]		
<i>Business Planning and Analytical Services</i> [page 92]	All IT scenario variants	■ AS ABAP ■ AS Java ■ BI ■ EPC ■ EP ■ BI Java	■ TREX ■ liveCache [Optional: Use it as a lock server to improve performance]	■ SAP GUI ■ SAP Business Explorer (BI)
<i>Enterprise Reporting, Query, and Analysis</i> [page 98]	All IT scenario variants	■ AS ABAP ■ AS Java ■ BI ■ EPC ■ EP ■ BI Java	TREX	■ SAP GUI ■ SAP Business Explorer (BI)
<i>Enterprise Data Warehousing</i> [page 106]	All IT scenario variants	■ AS ABAP ■ AS Java ■ BI ■ EPC ■ EP ■ BI Java	■ TREX ■ SAP NetWeaver BI Accelerator	SAP GUI
<i>Enabling Application-to-Application Processes</i> [page 112]	All IT scenario variants	■ AS ABAP ■ AS Java ■ PI [Optional: run service J2EE Adapter	TREX [Optional]	■ SAP GUI ■ J2SE Adapter Engine (PI/XI) [Optional]

3.1 Mapping of IT Scenarios to Installable Software Units

IT Scenario	IT Scenario Variant	Usage Types	Standalone Engines	Clients
		Engine (PI/XI) standalone (for performance reasons)] ■ AS Java ■ Parts of PI		
<i>Enabling Business-to-Business Processes</i> [page 115]	All IT scenario variants	■ AS ABAP ■ AS Java ■ PI [Optional: Run service J2EE Adapter Engine (PI/XI) standalone] ■ AS Java ■ Parts of PI [Optional: Run service Partner Connectivity Kit (PI/XI) standalone] ■ As Java ■ Parts of PI ■ PCK	TREX [Optional]	SAP GUI
<i>Business Process Management</i> [page 118]	All IT scenario variants	■ AS ABAP ■ AS Java ■ PI	■ ARIS for SAP NetWeaver ■ TREX [Optional]	SAP GUI
<i>Business Task Management</i> [page 122]	All IT scenario variants	■ AS ABAP ■ AS Java ■ EPC		■ SAP GUI ■ Adobe LiveCycle Designer
<i>Enabling Enterprise Services</i> [page 125]	Point-to-Point Services-based Integration	■ AS ABAP ■ AS Java		SAP GUI
	Brokered Services-based Integration	■ AS ABAP ■ AS Java ■ PI		SAP GUI
<i>Developing, Configuring, and Adapting Applications</i> [page 128]	Developing Java Applications using Web Dynpro	■ AS Java ■ DI ■ EPC		■ Developer Workplace ■ Adobe LiveCycle Designer [Optional]
	Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and	■ AS Java ■ DI ■ EPC		Developer Workplace

3.1 Mapping of IT Scenarios to Installable Software Units

IT Scenario	IT Scenario Variant	Usage Types	Standalone Engines	Clients
	Adopting Applications			
	Creating Composite Applications	<ul style="list-style-type: none"> ■ AS Java ■ DI ■ EPC ■ EP ■ AS ABAP [Optional] 	ARIS for SAP NetWeaver [Optional]	<ul style="list-style-type: none"> ■ Developer Workplace ■ Adobe LiveCycle Designer [Optional]
	Creating Business Applications Using ABAP	AS ABAP		SAP GUI
	Developing ABAP Applications Using Web Dynpro	<ul style="list-style-type: none"> ■ AS Java ■ EPC ■ AS ABAP 		<ul style="list-style-type: none"> ■ Developer Workplace ■ Adobe LiveCycle Designer [Optional]
	Developing Mobile Applications for Occasional Connection	<ul style="list-style-type: none"> ■ AS Java ■ AS ABAP ■ MI 		<ul style="list-style-type: none"> ■ Developer Studio ■ SAP GUI ■ MI Client
	Creating Applications Using SAP NetWeaver Visual Composer	<ul style="list-style-type: none"> ■ AS Java ■ EPC ■ EP 		
	Creating Portal Applications Using PDK for .NET	<ul style="list-style-type: none"> ■ AS Java ■ EPC ■ EP 	Portal Runtime for Microsoft .NET	Microsoft Visual Studio with Portal add-in
<i>SAP NetWeaver Operations</i> [page 148]	Monitoring SAP NetWeaver	<ul style="list-style-type: none"> ■ AS ABAP ■ AS Java ■ EPC 	SAP Central Process Scheduling application by Redwood	SAP GUI
	Administering SAP NetWeaver	<ul style="list-style-type: none"> ■ AS ABAP ■ AS Java ■ EPC 	SAP Central Process Scheduling application by Redwood	SAP GUI
	Information Lifecycle Management	<ul style="list-style-type: none"> ■ AS ABAP ■ AS Java ■ BI ■ EPC 		SAP GUI
	Adaptive Computing	AS Java		
<i>Software Life-Cycle Management</i> [page 157]	All IT scenario variants	N/A	N/A	N/A

IT Scenario	IT Scenario Variant	Usage Types	Standalone Engines	Clients
Enabling Platform Interoperability	All IT scenario variants	N/A	N/A	N/A
<i>Mobilizing Business Processes</i> [page 158]	Running Mobile Applications with an Online Connection	AS Java		
	Enabling Mobile Applications for Occasional Connection	<ul style="list-style-type: none"> ■ AS ABAP ■ AS Java ■ MI 		<ul style="list-style-type: none"> ■ SAP GUI ■ MI client
<i>Authentication and Single Sign-On</i> [page 163]	Authentication using a Directory with SSO using SAP logon tickets	<ul style="list-style-type: none"> ■ AS Java ■ EPC 	LDAP directory (third-party)	
<i>Integrated User and Access Management</i> [page 165]	All IT scenario variants	<ul style="list-style-type: none"> ■ AS ABAP ■ AS Java ■ EPC 	LDAP directory (third-party)	SAP GUI

3.2 IT Scenarios

IT scenarios supported by SAP NetWeaver address the requirements of IT management, developers, consultants, and other members of the technical community, and also demonstrate the capabilities of the technology platform.

IT scenarios help customers, partners, and ISVs to install and operate SAP NetWeaver. They enable you to run business applications, including both custom-built and packaged applications, or to implement a defined IT concept, such as evolving a company's system landscape into a service-based architecture. IT scenarios focus on major IT challenges such as the need to combine different integration technologies, to develop composite applications to leverage existing investments, or to build new business processes in a flexible way. *Developing, Configuring, and Adapting Applications* or *Business Process Management* are typical examples for IT scenarios in this context.

An IT scenario consists of multiple IT processes which are grouped into scenario variants.

Implementation guidance is provided by reference models and the visualization of end-to-end-processes.

SAP NetWeaver consists of the following IT scenarios:

- *Running an Enterprise Portal*

Organizations can give their users uniform, role-based, and secure access to any kind of applications, services, and information. With the portal, all members of the company's value chain – employees, customers, partners, and suppliers – have a single, uniform point of access to the applications, services, and information they need for their daily work.

- *Accelerating Global Delivery of Applications*

Accelerated Application Delivery for SAP NetWeaver enables end users worldwide to access web-based SAP applications (for example, SAP NetWeaver Portal) at near-LAN speed.

■ *Enterprise Knowledge Management*

SAP NetWeaver provides everything that organizations need to plan, build, and operate an integrated work environment for information workers. It provides the framework and the tools to integrate, disseminate, and work with distributed, unstructured information and put this information into a business context for information workers.

■ *Enterprise Search*

As part of usage type AS ABAP Embedded Search serves SAP Business Suite applications (for example SAP ERP or SAP CRM) as basic search technology to search in a unified way inside all their structured data.

■ *Enabling User Collaboration*

SAP NetWeaver enables IT organizations to help individuals, teams, and project groups collaborate more efficiently when running their business processes. SAP NetWeaver makes collaboration and knowledge sharing an integral, natural part of everyday work and enables efficient communication.

■ *Business Planning and Analytical Services*

SAP NetWeaver supports processes that collect and transform data within the business intelligence infrastructure, such as business planning and simulation, or analysis process design.

■ *Enterprise Reporting, Query, and Analysis*

Organizations can provide all the necessary processes and services to meet the information needs of business users. They can design and provide applications for formatted reporting, ad hoc queries, interactive analysis, information dashboards, and information broadcasting.

■ *Enterprise Data Warehousing*

SAP NetWeaver enables organizations to create and operate a data warehouse in an enterprise-wide environment, integrating data from heterogeneous systems, and designing and executing business intelligence models and processes. They can combine strategic analysis and operational reporting and enable the organization to report in real time.

■ *Enabling Application-to-Application Processes*

By enabling application-to-application processes, organizations can seamlessly connect SAP and non-SAP applications within the enterprise, orchestrating the process flow between them using message-based and standards-based methods for process integration. Using SAP NetWeaver, a single platform can manage the design, configuration, and execution of all business processes within the heterogeneous system landscape of an enterprise.

■ *Enabling Business-to-Business Processes*

Organizations can seamlessly connect their own business processes to those of their partners using message-based and standards-based methods for process integration. SAP NetWeaver supports various communication channels as well as process coordination and surveillance.

■ *Business Process Management*

Business Process Management (BPM) with SAP NetWeaver covers business process modeling, configuration, execution, and monitoring, with process models executed by either the business applications or the central integration server. Organizations can use predefined content to configure business processes and can relate application-embedded settings to business process models.

- *Business Task Management*

Business Task Management (BTM) with SAP NetWeaver helps to bring the right tasks to the right people and provides the means to complete tasks on time and with the best results. SAP NetWeaver helps people coordinate, monitor, and adapt their own tasks and the tasks they assign to coworkers.

- *Enabling Enterprise Services*

SAP NetWeaver provides organizations with a single infrastructure for uniform service definition, implementation, and usage based on Web services technology and standards. SAP NetWeaver supports enterprise services for user interaction as well as application-to-application and business-to-business interactions using synchronous, asynchronous, stateful, and stateless communication models.

- *Developing, Configuring, and Adapting Applications*

SAP NetWeaver offers a variety of programming models and tools to extend and enhance SAP applications or to create complementary custom applications. SAP NetWeaver supports popular development processes for the Java and ABAP programming environments.

- *SAP NetWeaver Operations*

Organizations can set up an optimal environment for administration and data archiving with SAP NetWeaver. They can centrally manage business processes and centrally monitor the underlying SAP NetWeaver components in a highly effective manner.

- *Software Life-Cycle Management*

Organizations can manage SAP software in their system landscapes by performing tasks such as planning changes, implementing new systems, copying existing systems, or enabling the creation and propagation of changes in the landscape. Organizations can also maintain their software by applying support packages and corrections or by upgrading to new software versions.

- *Enabling Platform Interoperability*

SAP NetWeaver helps different systems or technologies coexist and interoperate and helps organizations master the heterogeneity in their landscapes. SAP NetWeaver integrates people, information, processes, and applications.

Since this IT scenario spans many different heterogeneous technologies and also multiple IT scenarios, it is not explicitly covered in this *Master Guide*.

- *Mobilizing Business Processes*

SAP NetWeaver enables organizations to extend existing and new business processes into the mobile world. In addition to supporting simple productivity tools, such as e-mail, SAP NetWeaver integrates front-end mobile activities with back-end business processes.

■ *Authentication and Single Sign-On*

SAP NetWeaver helps organizations implement authentication and integrate different systems into a single sign-on landscape. SAP NetWeaver supports Lightweight Directory Access Protocol (LDAP), Security Assertion Markup Language (SAML), and Java Authentication and Authorization Service (JAAS) to ensure interoperability, and it allows organizations to leverage existing investments, such as directory servers.

■ *Integrated User and Access Management*

Organizations can manage user information and control user access to data with fine-grained authorization and control, while reducing complexity and redundancy and increasing transparency for better security and governance. SAP NetWeaver supports various ways of implementing integrated user and access management. These include leveraging existing investments by using data already available in a lightweight directory access protocol (LDAP)-based directory server.

■ *Master Data Management*

With SAP NetWeaver Master Data Management, you can operate the IT scenarios *Master Data Management* and *Rich Product Content Management*. For more information, see the documentation available on SAP Service Marketplace at ► <http://service.sap.com/installmdm> ◀.

3.3 Installable Software Units

SAP NetWeaver comprises the following three types of installable software units:

- Systems that are configured for a specific purpose that is indicated by one or more usage types
- Standalone engines that provide one specific (server) function in combination with one or more SAP NetWeaver systems
- Clients used by (many) people on their local front-end PCs to access functions offered by systems of SAP NetWeaver or standalone engines in the system landscape

In the following sections, you can find more details about the software units. The figure below provides and overview of the software units:

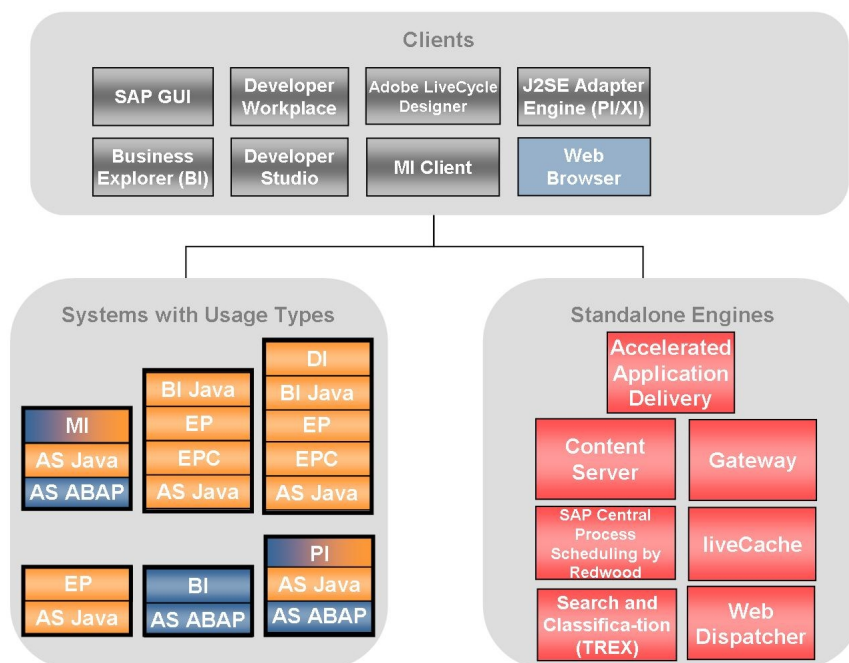


Figure 1: Installable Software Units

For this and other figures in this guide, the following legend applies:

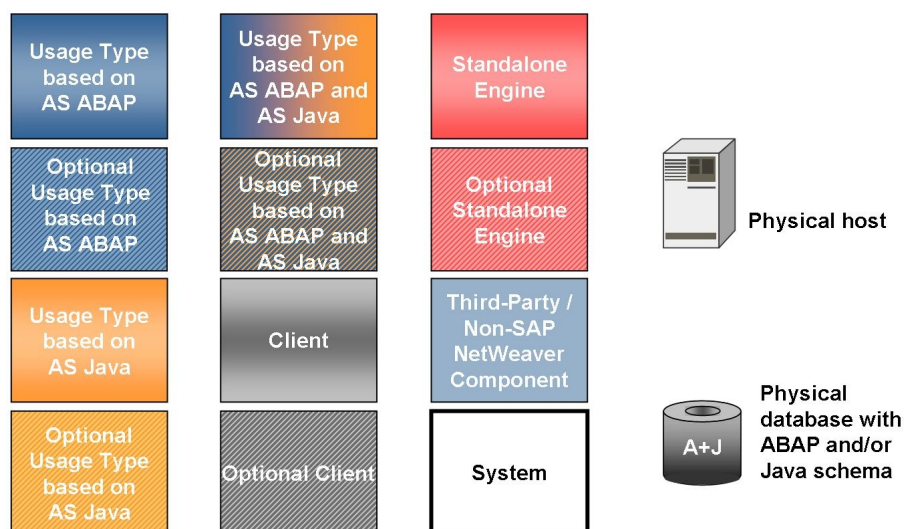


Figure 2: Legend

3.3.1 Systems with Usage Types

SAP systems with usage types are the main building blocks of SAP NetWeaver. They are identified by unique SAP system IDs (SAPSIDs) and configured for a certain purpose, as indicated by usage types. Usage types have the following characteristics:

- They are a structuring element for SAP software on a technical level.
- Usage Types determine the intended purpose of a system and the role it plays in a given (distributed) use case.
- They are realized by installing and configuring a collection of software components.
- They allow a logical view of the technology platform SAP NetWeaver.
- A usage type may require other usage types in the same system to operate.
- They can also be run in the same system together with other usage types that are not a prerequisite.

How SAP NetWeaver Systems are Used

The following sections describe the usage types and their dependencies.

- Application Server ABAP (AS ABAP)

Purpose

AS ABAP is used to provide 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. 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 AS ABAP can be used, which even supports the creation of the most complex applications by large groups of developers. The ABAP technology can be used to implement complete applications including user interfaces. However, it is also possible to implement only the core components of an application, such as the business logic and persistence in ABAP and to use defined interfaces (RFC, BAPIs, Web Services and so on) so that a Java-based interface can be used, or to make other applications available.

Part of AS ABAP is the Search Engine Service (SES), which enables users to search for business objects using Search and Classification (TREX). SES accesses Search and Classification (TREX) functions through the Search and Classification (TREX) ABAP client. SES replicates the business objects from the ABAP application to Search and Classification (TREX), so that it can apply Search and Classification (TREX) search functions to them. When a user enters a search query, the Search and Classification (TREX) system responds to it, not the database for the ABAP application. For more information, see the document *Installation Guide – SAP NetWeaver TREX Single Hosts / Multiple Host*.

Dependencies

AS ABAP is the foundation for usage type BI. Together with AS Java it is also the basis for Process Integration and Mobile usage types.

Systems with usage types Process Integration or Mobile are installed as a ABAP+ Java dual stack systems. In all other cases, we recommend to install AS ABAP and AS Java in separate systems.

**CAUTION**

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

**NOTE**

SAP List Viewer in Web Dynpro for ABAP (ALV), which is part of AS ABAP requires in certain cases the installation of Business Intelligence Java Components (BI Java). ALV is a reusable, configurable component for the visualization of tabular data. It provides a comprehensive set of generic functions for tabular data. One of the generic functions allows you to create a print version. If you want to use this function, you have to install BI Java. After the installation, you need to set up the communication from and to SAP NetWeaver Portal. In addition, Adobe document services (included in Application Server Java) need to be available.

For more information about ALV, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *Getting Started – Using SAP Software* → *Working with Tools and Features* → *Working with Lists* → *SAP List Viewer for Web Dynpro* ➔.

■ Application Server Java (AS Java)

Purpose

AS Java provides the Java foundation of SAP NetWeaver. Among others, AS Java provides the following capabilities:

- J2EE Engine – a J2EE 1.3-compliant application server for running enterprise applications. In addition to the pure J2EE standard technologies, the J2EE Engine implements complementary technologies, such as Web Dynpro or Web Services, that are targeted at supporting large-scale, real-business application development projects.
- SAP Composite Application Framework Core (CAF Core) is a service-oriented architecture for building and deploying composite applications. It enables modeling of different service types – entity services that represent a domain model, application services that implement business logic, and external services that offer connectivity to back-end services by means of remote function calls (RFCs) or Web services. Usage type AS Java comprises the CAF Core runtime environment, while design time tools are part of the SAP NetWeaver Developer Studio.
- Web Dynpro is the user interface technology for developing professional business applications for mobile as well as for desktop clients. Web Dynpro applications can easily be integrated into SAP NetWeaver Portal, providing a unified layout for the end user as well as enhanced navigation support. Web Dynpro also allows, for example, the development of interactive forms using the Adobe document services.

- 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

**NOTE**

At the moment, Adobe document services do not run on all platforms supported by SAP NetWeaver. For more information, see SAP Note [925741](#).

- SAP Central Process Scheduling application by Redwood
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:
 - ◆ Central function actively reduces TCO
 - ◆ Cross-component scheduling for ABAP systems
 - ◆ Seamless integration into existing CCMS monitoring solutions by retrieving and reporting scheduling monitoring information
 - ◆ Many re-sell options for non-SAP features available

SAP Central Process Scheduling has to be installed separately after the AS Java installation.

For more information, see the SAP Community Network at <http://scn.sap.com/docs/DOC-16350>.

Dependencies

AS Java is the basis for other Java-based usage types.

- EP Core (EPC)

Purpose

EPC provides the basic portal capabilities for SAP NetWeaver. It brings SAP NetWeaver to the user in a uniform and consistent 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. Usage type EPC is a prerequisite for using the portal add-on capabilities provided by usage type EP. EPC alone provides more flexibility when implementing a portal where the full enterprise portal capabilities are not needed.

In addition to the Web front end capabilities, EPC contains the Universal Worklist and Guided Procedures (GP):

- 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.

- **Guided Procedures (GP)**

A framework for modeling and managing processes that involve access to multiple back-end systems. GP enables runtime collaboration and execution of ad-hoc items. It also allows the invocation of various types of applications and services within a process, such as Web Dynpro and Business Server Pages (BSP) applications, and RFCs. The framework implements differentiated role-based access to the available tools in accordance with the user's functions in the enterprise.

Optionally, you can install the SAP NetWeaver Portal, enterprise workspaces add-on on top of usage type EPC. The enterprise workspaces add-on provides a flexible and intuitive environment, enabling business users to integrate, organize and use various content such as applications, reports, dashboards, web content, and documents, either from SAP or non-SAP systems. Note that this add-on requires a separate license.

Dependencies

EPC requires AS Java as a prerequisite in the same system. You can combine EPC with other Java usage types in one system.

- **Enterprise Portal (EP)**

Purpose

The following portal add-on capabilities are tightly integrated into usage type EP:

- **Knowledge Management (KM)**

Enables portal users to distribute, access, and manage unstructured 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.

- **Visual Composer**

A powerful modeling tool that facilitates the creation of content on top of the SAP NetWeaver platform, enabling model-driven application development through a visual user interface rather than manually writing code.

- **PDK for .NET:**

Offers a set of tools that enables Microsoft .NET developers to build portal content for SAP NetWeaver Portal. It allows organizations to leverage their existing investments in the .NET technology and developers' skills, as well as to take advantage of SAP NetWeaver technology.

- Adobe Flex server

To model applications that run in the Flash runtime, the Adobe Flex server is required to compile applications modeled in Visual Composer to Flash .swf files, for deployment to the portal.

- Application Sharing Server

This service provides data streaming services that enable application sharing capabilities provided by SAP NetWeaver Collaboration. The server handles the flow of data between portal users collaborating through the real-time-collaboration-based application sharing feature. Real time collaboration application sharing allows users to share their Windows desktop or individual applications with other portal users in real time. Remote users can interact directly with the shared desktop or application as if they were sitting at the host's machine.

The server is installed automatically with usage type EP on the portal machine. Here it is replicated to other instances of the AS Java cluster, as are other components. In a cluster environment, the load generated by Application Sharing Server is distributed among all Application Sharing Server machines in the cluster.

You can install the following add-ons on top of EP:

- Forums 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 like support or human resources or they might offer customers a place to trade product tips and solutions. Intuitive user interfaces make it easy to 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.

- Web Page Composer

The Web Page Composer add-on enables departments to create and publish Web sites for a company intranet or an external information portal.

Dependencies

EP requires EPC and AS Java as a prerequisite in the same system. You can combine EP with other Java usage types in one system.

■ Business Intelligence (BI)

Purpose

BI provides the infrastructure for the following capabilities:

- Data warehousing
- Various analytical technologies and functions

3.3 Installable Software Units

- Web-based reporting and analysis
- Information Broadcasting to distribute BI content by e-mail or by using the portal either as precalculated documents with past data, or as links with live data
- Open analysis interfaces that make various interfaces available for connecting front-end tools from third-party providers
- Web design API allows you to realize highly individual scenarios and demanding applications with customer-defined interface elements

BI provides the foundation for scenarios such as *Enterprise Data Warehousing*, *Enterprise Reporting, Query, and Analysis*, and *Business Planning and Analytical Services*. It includes the complete ABAP stack of the SAP NetWeaver BI data warehouse and BI platform units.

Dependencies

BI requires AS ABAP as a prerequisite in the same system. You can combine BI with other usage types in one system as well. Usually, scenarios running on usage type BI also require usage type BI Java.

We recommend to install BI and BI Java in separate systems. As of SAP Enhancement Package 1 for SAP NetWeaver 7.0, this is the default installation option. The installation of BI and BI Java in a dual stack system is then still possible, but requires some manual actions. For more information, see SAP Note [1181025](#).

**NOTE**

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

For SAP NetWeaver 7.0 with enhancement package 1 or lower, you must keep BI and BI Java in sync concerning applied Support Package Stacks, regardless of whether you run BI and BI Java in the same or in separate systems. As of enhancement package 2 for SAP NetWeaver 7.0, dependencies between the Support Package levels of BI and BI Java no longer exist.

**NOTE**

For usage type BI, there is no installation option in `SAPinst`. Instead, you have to install AS ABAP with `SAPinst` and then SAP NW 7.0 BI CONT Addon 7.04 or higher.

■ Business Intelligence Java Components (BI Java)**Purpose**

BI Java is used to provide the Java runtime for IT scenarios such as *Enterprise Reporting, Query, and Analysis* as well as *Business Planning and Analytical Services*. It enables variants such as *Information Broadcasting* and *Ad-hoc Query & Analysis*. It also enables Web Dynpro-based BI applications and third party data access via Universal Data Integration.

Dependencies

BI Java requires AS Java, EPC, and EP in the same system. It can also be combined with other usage types in one system. When you install BI Java, AS Java, EPC, and EP are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, EPC, and EP. Usually, scenarios running on usage type BI Java also require usage types BI and AS ABAP. We recommend to install BI and BI Java in separate systems. As of SAP Enhancement Package 1 for SAP NetWeaver 7.0, this is the default installation option. The installation of BI and BI Java in a dual stack system is then still possible, but requires some manual actions. For more information, see SAP Note [1181025](#).

**NOTE**

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

For SAP NetWeaver 7.0 with enhancement package 1 or lower, you must keep BI and BI Java in sync concerning applied Support Package Stacks, regardless of whether you run BI and BI Java in the same or in separate systems. As of enhancement package 2 for SAP NetWeaver 7.0, dependencies between the Support Package levels of BI and BI Java no longer exist.

■ Development Infrastructure (DI)

Purpose

Development Infrastructure of SAP NetWeaver provides the environment for all processes of Java-based development and Java-based software life-cycle management: In the Change Management Service (CMS), all phases of development are centrally managed, from the definition of a central development environment for each software project, to quality management and production. CMS controls the management of sources in the Design Time Repository (DTR) and of archives in the Component Build Service (CBS). The component model adds metadata to Java-based projects, which is the basis for the new development process.

For each IT scenario that uses SAP NetWeaver Development Infrastructure (NWDI), the following two Java development scenarios of NWDI define to what extent NWDI is used:

- *Java Projects with Central Source File Storage:*
Development with central source code versioning only (that is, only DTR is used).
- *Developing Components with the NWDI:*
All services of the Development Infrastructure and SAP's component model are used.

Dependencies

DI requires AS Java as a prerequisite in the same system. Although it can be combined with other usage types in one system, we recommend to install a separate system with usage type DI.

■ Mobile Infrastructure (MI)

Purpose

Mobile Infrastructure 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 mobile device and back end is only established at certain times. These are the synchronization points, when the Mobile Infrastructure Server (that is, the system with usage type MI) and Mobile Infrastructure Client exchange data to keep server and client updated. This enables the end user to perform process tasks completely independently of the back end system, which is helpful if a steady connection cannot be guaranteed or might be too expensive. To realize this usage type, an intelligent application is needed to run on each device containing a user interface, business logic, and data handling.

**NOTE**

Mobile Infrastructure uses Jakarta Tomcat 3.2.4.

The Java Secure Socket Extension includes code licensed from RSA Data Security.

Dependencies

MI requires AS ABAP and AS Java as prerequisites in the same system. Although technically possible, we do not recommend that you combine MI with other usage types (besides AS ABAP and AS Java) in one system at the moment. Instead, we recommend that you install a dedicated MI system.

■ Process Integration (PI)**Purpose**

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 Business Process Management for application-embedded and application-unbounded processes.

The service J2EE Adapter Engine (PI/XI) is also part of usage type PI. You use J2EE Adapter Engine (PI/XI) to connect to SAP systems (RFC adapter) and external systems. You use the various adapters in J2EE Adapter Engine (PI/XI) to convert XML-based and HTTP-based messages to the specific protocol and format required by these systems, and the other way around. You can use the J2EE Adapter Engine (PI/XI) that is part of your PI system as a central J2EE Adapter Engine (PI/XI). You can install a non-central J2EE Adapter Engine (PI/XI) separately as a system with AS Java and parts of the usage type PI on a separate host (optional - for performance reasons).

In addition, Partner Connectivity Kit (PCK) runs on AS Java with parts of the usage type PI. It enables a system of a smaller company or subsidiary that does not run SAP NetWeaver to connect to your SAP NetWeaver systems with usage type PI.

Dependencies

PI requires AS ABAP and AS Java as prerequisites in the same system. It can also be combined with other usage types in one system. However, we recommend that you have a dedicated PI system. Regarding the compatibility of your PI system with application systems in your system landscape that have different releases, see SAP Note [1043047](#).

For information about release dependencies concerning the system landscape directory of SAP NetWeaver, check the document *Planning Guide - System Landscape Directory* and [SAP Note 954820](#).

Configuration of Systems with Usage Types

Configuration information is available in the installation guides, the configuration wizard and in SAP Solution Manager:

- In the *Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>* you find initial technical configuration tasks. This guide also informs you about how you can run the configuration wizard and how you can access the configuration information in SAP Solution Manager.
- For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed the system and patched it for the first time. To do this, you start the configuration wizard from the SAP NetWeaver Administrator.
- The configuration steps for systems with usage type required for an IT scenario are accessible in the following ways:

- Through SAP Solution Manager

In SAP Solution Manager, you create a project and a project structure. In the configuration phase, you select configuration structures with predelivered SAP content for your project and make cross-scenario configuration settings. After configuring these basic settings, you make scenario-specific configuration settings. To configure ABAP systems, SAP Solution Manager offers executable configuration files (IMG activities).

To be able to use SAP Solution Manager for the configuration tasks, you have to import the SAP Solution Manager Implementation Content (Add-On ST-ICO) that is available for your SAP Solution Manager release and update it with the latest Support Package. For more information, see SAP Note [631042](#) (*Release strategy for Implementation Content (ST-ICO)*).

SAP Solution Manager Implementation Content is available on SAP Service Marketplace at <http://service.sap.com/swdc> → Installations & Upgrades → Entry by Application Component → SAP Technology Components → SAP Solution Manager → <Release> → Content → ST-ICO ↵.

Support Packages for the SAP Solution Manager Implementation Content are available on SAP Service Marketplace at <http://service.sap.com/patches> → Support Packages and Patches – Entry by Application Group → SAP Technology Components → SAP Solution Manager → <Release> → Entry by Component → Solution Manager ABAP Stack → ST-ICO ↵

- In the *Technology Consultant 's Guide*

The *Technology Consultant 's Guide* provides you with the same textual information as SAP Solution Manager, but does not offer the executable configuration files (IMG activities) for ABAP system configuration.

The guide is available on SAP Help Portal at <http://help.sap.com/nw70> → SAP NetWeaver Library → Technology Consultant 's Guide ↵

Restrictions for Systems with Multiple Usage Types

- To deploy additional Java usage types to existing Java systems, you can use a procedure based on Java Support Package Manager (JSPM). For example, you can add BI Java, EPC, and EP to an existing AS Java or AS ABAP + AS Java system. Since you have to perform configuration steps manually, you have to plan additional effort if you want to add a Java usage type to an existing Java system. For more information, see the following documents:
 - SAP Note [883948](#) for SAP NetWeaver 7.0 Support Release 3 or lower
 - *Installation of Additional Software Units or Usage Types in an Existing SAP System*, included in the Installation Guide for SAP NetWeaver 7.0 including enhancement package 1 or higher
- If you have one system with multiple usage types, be aware that we do not provide standard tools to separate these usage types and distribute them to multiple systems at a later stage. For example, if you have a system with usage types A and B, you are not able to migrate the system with SAP standard tools into two systems, one with usage type A only and the other with usage type B only. In addition, we do not provide standard tools to merge multiple systems with different usage types into one system with multiple usage types at a later stage. If you want to perform these tasks, you require specific project support. The following figure shows that SAP standard system copy and migration tools do not help you to separate or merge systems with usage types:

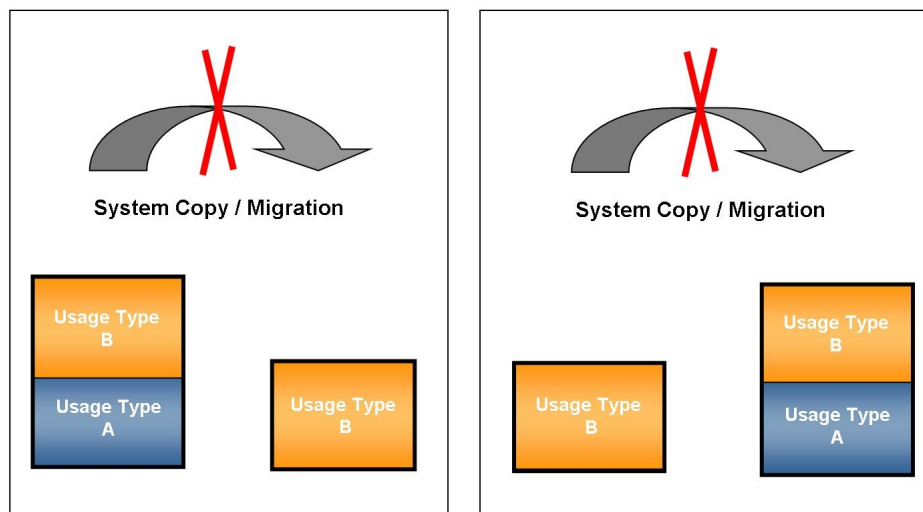


Figure 3: No Support for Separating or Merging Systems with Usage Types

- Although you can use one system for multiple usage types, client restrictions apply for the following usage types:
 - PI requires a dedicated client, due to special PI requirements concerning the client pipeline. Whereas application client pipelines only send and receive messages, the central PI pipeline can also map messages to different formats before sending them.

- For BI, you should reserve a dedicated client for reporting purposes. In this client, activate SAP NetWeaver 7.0 BI Content Add-On as required.

3.3.2 Standalone Engines

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 usage type. They do not run on AS ABAP or AS Java.

The standalone engines, which are available for SAP NetWeaver, are described in the following sections.

■ Accelerated Application Delivery

Accelerated Application Delivery for SAP NetWeaver enables end users worldwide to access web-based SAP applications (for example SAP NetWeaver Portal) at near-LAN speed. This appliance overcomes bandwidth and latency issues very efficiently with caching, compression algorithms, and special application-aware optimizations. Currently, there are specific optimizations available for the SAP NetWeaver Portal, Knowledge Management (accessing and collaborating on documents) and the SAP Learning Solution. Additional optimizations are planned for other web-enabled SAP applications like Business Intelligence (BI), ERP Business Packages, CRM, and Composite Applications. However, with generic optimizations, these applications can already benefit from the technology today.

Accelerated Application Delivery consists of centrally installed components – the Adapter Engine (server front-end), the administration plug-in, and the Application Delivery Monitor – and a component installed on the (remote) client side, the Adapter Engine (client front-end).

■ Content Server

The 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.

■ Diagnostic Agent

The diagnostic agent monitors and enables the diagnosis of systems based on AS ABAP or AS Java, solutions based on .Net, Java, or any other non-SAP systems.

By default, the Diagnostics Agent is installed on every SAP system that includes usage type AS Java. In addition, install the Diagnostic Agent when you want to implement the End-to-End Root Cause Analysis scenario for systems based on AS ABAP only, or for third-party software systems. For more information, see SAP Service Marketplace at <http://service.sap.com/diagnostics>.

■ Gateway

It is possible to install an SAP instance of an SAP NetWeaver system based exclusively on a standalone gateway. This type of instance does not contain normal work process types (dialog, background,

update, enqueue, or spool). Only the gateway process (gwr) is started. If there is an SNA connection to an R/2 system, gateway work processes (gwp) are also started.

- liveCache

liveCache is a database engine for managing complex objects in scenarios where large volumes of data must be permanently available and modifiable. For BI, you can use it as a lock server to improve the performance if you have to lock many complex data records described by selection tables.

- Search and Classification (TRES)

SAP NetWeaver Search and Classification (TRES) offers an integrated set of services. TRES services include search and retrieval in large document collections, text mining, automatic document classification, and search and aggregation over structured data in SAP applications. TRES can handle text from documents in numerous formats, including Microsoft Office and Adobe formats (PDF), and more than 30 languages. TRES 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.

Applications that are based on SAP NetWeaver 7.0 can optionally use a TRES 7.1, if the Master Guide of the application also states this. We recommend that you use TRES 7.1, if your operating system preference allows it. For more information, see the Product Availability Matrix at <http://service.sap.com/pam>.

Technically, every TRES ABAP and Java client version works with TRES 7.1. For more information, see SAP Note [1010800](#) (*TRES Java Client Compatibility for Java-Based Applications*), SAP Note [965097](#) (*TRES 7.1 platforms*) and SAP Note [1003900](#) (*TRES 7.1: Central note*).

SAP NetWeaver BI Accelerator is based on TRES technology. You need an installation based on 64-bit architecture for SAP NetWeaver BI Accelerator. The hardware partners provide this variant already preconfigured as the SAP NetWeaver BI Accelerator box. Note that a TRES installation configured for searching in metadata and documents based on 32-bit architecture cannot be used for SAP NetWeaver BI Accelerator.

Therefore an SAP NetWeaver BI Accelerator box cannot be used for searching in metadata and documents. To be able to use the search function and the SAP NetWeaver BI Accelerator, you need separate installations.

- Web Dispatcher

The Web Dispatcher is recommended when you use an SAP system with multiple SAP Web Application Servers for Web applications. It is located 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 Web application servers. As a "software Web switch", the Web Dispatcher can reject or accept connections. When it accepts a connection, it balances the load to ensure an even distribution across the servers.

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 simply want to balance the load between multiple SAP NetWeaver Application Server instances.

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

Since the Web Dispatcher is optional for every SAP system, it is not contained in the system landscapes and the implementation sequences of the IT scenarios in this documentation.

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *SAP NetWeaver* → *SAP NetWeaver by Key Capability* → *Solution Life Cycle Management by Key Capability* → *System Management* → *Web Dispatcher* ↗.

For information about the installation, see the document *Installation Guide – Web Dispatcher on <Operating System>* available on SAP Service Marketplace at <http://service.sap.com/installnw70>.

3.3.3 Clients

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.

SAP NetWeaver has the following front-end clients and tools:

- 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 Business Explorer (BI)

Business Explorer provides flexible reporting and analysis tools for strategic analysis 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 in 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 content in the SAP NetWeaver Portal.

- J2SE Adapter Engine (PI/XI)

The J2SE Adapter Engine (PI/XI) is a separate software unit. You can only use it if you have SAP NetWeaver systems with usage type PI in your system landscape. It has to be installed manually. You use the J2SE Adapter Engine (PI/XI) to connect to external systems. Using the various adapters in the J2SE Adapter Engine (PI/XI), XML and HTTP-based messages can be converted to the specific

protocol and format required by these systems and the other way round. In principle, you connect external systems using the adapters that are installed centrally or non-centrally in the J2EE Adapter Engine (PI/XI). The J2SE Adapter Engine (PI/XI) only provides some of these adapters as a standalone version with restricted functions for operating systems that do not support SAP NetWeaver 7.0 but that have JDK 1.3.1 or higher. Therefore, you should only use the J2SE Adapter Engine (PI/XI) if the platform prerequisites do not allow you to use the J2EE-based Adapter Engine (PI/XI).

■ Mobile Infrastructure Client

The Mobile Infrastructure Client (MI Client) is installed locally on mobile devices and is equipped with a Webserver, a database layer, and its own business logic. Staff working remotely can therefore work offline and do not have to wait for a network connection to complete time-critical business applications. Usage type MI offers tools for synchronization and data replication that make the data of the mobile device consistent with that of the back-end system.

■ SAP GUI



NOTE

- We recommend that you use the following versions:
 - ◆ SAP GUI for Windows 7.10 (or higher) with the latest patch level
 - ◆ SAP GUI for Java 7.00 (or higher) with the latest revision
 - ◆ The integrated SAP ITS 6.40

SAP GUI for Windows 6.20 (as of patch level 57) and SAP GUI for Windows 6.40 are compatible with SAP NetWeaver 7.0 as well.
- If you require the BI add-on or KW add-on contained in SAP GUI, you need SAP GUI for Windows 7.10 or SAP GUI for Windows 6.40 Compilation 4 (or higher). This is because the new BI and KW add-on components required for SAP NetWeaver 7.0 are only available as of this compilation CD.
- For more information about the SAP GUI family, see SAP Community Network at <http://scn.sap.com/community/gui>.

SAP offers three different client applications for accessing ABAP applications in SAP systems (such as SAP NetWeaver 7.0 systems with usage type 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 '04. On the client side, only a suitable browser (such as Internet Explorer 6.0 or Firefox 1.0) and a virtual machine are required. SAP ITS 6.20 is not compatible with SAP NetWeaver 7.0.
- 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)

3.4 Transition from SAP NetWeaver 2004 to 7.0

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 document *Installation Guide – SAP Front End*.

SAP GUI also includes optional add-ons, for example the BI add-on and KW add-on, which are required for certain IT scenarios.

■ SAP NetWeaver Developer Studio

SAP NetWeaver Developer Studio introduces SAP's own environment for developing Java-based, multilayered business applications. The new development environment is based on Eclipse, an open source product with an open plug-in architecture that provides a suitable platform for incorporating specific functions.

■ SAP NetWeaver Developer Workplace

SAP NetWeaver Developer Workplace consists of SAP NetWeaver Developer Studio and an SAP NetWeaver 7.0 system with usage types AS Java and EP. It is used for local development and testing. It is available only on Microsoft Windows with MySQL, MaxDB, or Microsoft SQL Server.

3.4 Transition from SAP NetWeaver 2004 to 7.0

The following table is intended to ease the transition from SAP NetWeaver 2004 and earlier releases to SAP NetWeaver 7.0. Although it is not complete, it should give you an understanding of which SAP NetWeaver 7.0 IT scenarios might be relevant for you based on given topics, key words, technical scenarios, and earlier components used with SAP NetWeaver 2004 and in earlier releases.

Topics / SAP NetWeaver 2004 Technical Scenarios / Former Components	SAP NetWeaver 7.0 IT Scenarios
ABAP development	Developing, Configuring, and Adapting Applications
Adaptive computing	SAP NetWeaver Operations
Administration	SAP NetWeaver Operations
Authorizations	Integrated User and Access Management
BI Information Broadcasting	<ul style="list-style-type: none"> ■ Enabling User Collaboration ■ Enterprise Reporting, Query, and Analysis
Business Task Management	<ul style="list-style-type: none"> ■ Enabling User Collaboration ■ Business Task Management
CCMS	SAP NetWeaver Operations
Coexistence	Enabling Platform Interoperability
Composite Application Framework	Developing, Configuring, and Adapting Applications
Data archiving	SAP NetWeaver Operations
Document management	Enterprise Knowledge Management
Dual portal	Enabling Platform Interoperability
Dual vendor	Enabling Platform Interoperability

3.4 Transition from SAP NetWeaver 2004 to 7.0

Topics / SAP NetWeaver 2004 Technical Scenarios / Former Components	SAP NetWeaver 7.0 IT Scenarios
Enterprise Content Management	Enterprise Knowledge Management
Global portal	Running an Enterprise Portal
Guided Procedures	Business Process Management
Human interaction	Business Task Management
IBM	Enabling Platform Interoperability
Identity Management	Integrated User and Access Management
Implementation and configuration of business content	Software Life-Cycle Management
Installation	Software Life-Cycle Management
Interoperability	Enabling Platform Interoperability
Interoperability with non-SAP systems	Enabling Platform Interoperability
Java Authentication and Authorization Service (JAAS)	Authentication and Single Sign-On
Java development	Developing, Configuring, and Adapting Applications
Java Message Service (JMS)	Enabling Platform Interoperability
Job scheduling	SAP NetWeaver Operations
Knowledge Management & Collaboration (KMC)	<ul style="list-style-type: none"> ■ Running an Enterprise Portal ■ Enterprise Knowledge Management ■ Enabling User Collaboration
Logon	Authentication and Single Sign-On
Maintenance	Software Life-Cycle Management
Messaging	Enabling Platform Interoperability
Microsoft	Enabling Platform Interoperability
Mobile Web Dynpro	Mobilizing Business Processes
Monitoring	SAP NetWeaver Operations
MQSeries	Enabling Platform Interoperability
Multiple portals	Enabling Platform Interoperability
Multiple vendors	Enabling Platform Interoperability
Passwords	Authentication and Single Sign-On
PDK for .NET	Developing, Configuring, and Adapting Applications
Roles	Integrated User and Access Management
SAP Business Intelligence (SAP BI)	<ul style="list-style-type: none"> ■ Business Planning and Analytical Services ■ Enterprise Reporting, Query, and Analysis ■ Enterprise Data Warehousing
SAP Enterprise Portal (SAP EP)	<ul style="list-style-type: none"> ■ Running an Enterprise Portal ■ Enterprise Knowledge Management ■ Enabling User Collaboration
SAP Knowledge Warehouse (SAP KW)	Enterprise Knowledge Management
SAP Mobile Infrastructure (SAP MI)	Mobilizing Business Processes
SAP NetWeaver Administrator	SAP NetWeaver Operations
SAP NetWeaver Development Environment	Developing, Configuring, and Adapting Applications
SAP NetWeaver Java Development Infrastructure and its administration	Software Life-Cycle Management

3.4 Transition from SAP NetWeaver 2004 to 7.0

Topics / SAP NetWeaver 2004 Technical Scenarios / Former Components	SAP NetWeaver 7.0 IT Scenarios
SAP Exchange Infrastructure (SAP XI)	<ul style="list-style-type: none"> ■ Enabling Application-to-Application Processes ■ Enabling Business-to-Business Processes ■ Business Process Management ■ (Enabling Enterprise Services)
Search	Enterprise Knowledge Management
Security	<ul style="list-style-type: none"> ■ Authentication and Single Sign-On ■ Integrated User and Access Management
Simple Object Access Protocol (SOAP)	Enabling Platform Interoperability
Single sign-on across portals	Enabling Platform Interoperability
Software life-cycle tasks	Software Life-Cycle Management
System copy	Software Life-Cycle Management
System management	Enabling Platform Interoperability
Uniform Content Access	Running an Enterprise Portal
Upgrade	Software Life-Cycle Management
User Management	Integrated User and Access Management
Web Server Infrastructure (SAP Web Application Server)	Enabling Enterprise Services
Web Services for Remote Portlets (WSRP)	Enabling Platform Interoperability
Web Services Interoperability	Enabling Platform Interoperability
WebSphere	Enabling Platform Interoperability
Workflow	Business Process Management

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4 Enhancement Packages for SAP NetWeaver

4.1 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.

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

Tools

The enhancement package installation requires the following tools:

- SAP Solution Manager Maintenance Optimizer
- Installation or upgrade tools (depending on your scenario)

The SAP Solution Manager Maintenance Optimizer (transaction **DSWP**) 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.

To enable the Maintenance Optimizer to work correctly, you need a complete, consistent, and verified set of system descriptions in SAP Solution Manager. For more information, see the Maintenance Planning Guide at ► <https://service.sap.com/mopz> → *How To's and Guides* ◀.

For the new installation of an SAP system including enhancement package you use the standard installation tool (SAPinst)

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). The Software Update Manager is delivered as part of the Software Logistics Toolset (SL Toolset). More information and documentation for SUM are available on SAP Service Marketplace at: ► <http://service.sap.com/sltoolset> → *Software Logistics Toolset 1.0* → *SUM* ◀.

**NOTE**

The Software Update Manager (SUM) replaces gradually the upgrade tools SAPup and SAPJup. To make sure that you can use the SUM for your maintenance activity, see the latest overview of the supported maintenance processes in the central note for the Software Update Manager at ► <http://service.sap.com/sltoolset> → *Software Logistics Toolset 1.0* ◀.

4.2 Key Facts About Enhancement Packages

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

- 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.

4.3 Enhancement Package Implementation

In the following, you will find an overview of the steps involved in the three different enhancement package implementation scenarios.

Process

Enhancement Package Installation in an Existing SAP NetWeaver System

Process

1. You find out, which of the new functions are interesting for your business.
2. You analyze the landscape dependencies and verify the correctness of system information in SAP Solution Manager. For more information, see the *Maintenance Planning Guide* at ► <http://service.sap.com/mopz> → *How To's and Guides* ◄.
3. As of enhancement package 2 for SAP NetWeaver 7.0: You make sure that you have set up your SAP Solution Manager system for the download of packages, and that you have configured the Maintenance Optimizer.
4. You download the installation queue.
5. You perform the installation.
6. You perform additional Customizing, if necessary.
7. You test the new functions.

Tools

- SAP Solution Manager Maintenance Optimizer



NOTE

To install enhancement package 2, you require an SAP Solution Manager 7.0 system with at least Support Package stack 22.

- Software Update Manager (SUM)

Documentation

- *Update Guide — Update of SAP Systems Using Software Update Manager <version>*
- *Maintenance Planning Guide*

New Installation of an SAP NetWeaver System with Enhancement Package

Process

1. You install the SAP NetWeaver system.
The installation of *SAP NetWeaver 7.0 including enhancement package 1 or 2* comprises the installation of the enhancement package. There are no additional installation steps required.
2. You perform the Customizing for the SAP system.
3. You test the SAP system.

Tools

Standard installation tool SAPinst.

Documentation

*Installation Guide — SAP NetWeaver 7.0 including Enhancement Package x <Technology> on <Operating System>:
<Database>*

Upgrade to an SAP NetWeaver System with Enhancement Package

Process



NOTE

If you want to upgrade to SAP NetWeaver 7.0 including enhancement package 1 or 2, note that these upgrades are only supported from the following source releases:

- SAP Web AS: The upgrade to SAP NetWeaver 7.0 including enhancement package 1 / including enhancement package 1 Support Release 1 is supported from source release SAP Web AS 6.20 and 6.40

The upgrade to SAP NetWeaver 7.0 including enhancement package 2 is supported from source release SAP Web AS 6.40.

- SAP BW: The upgrade is supported from SAP BW 3.1 and 3.5.

1. You plan the upgrade to the new release.
2. As of enhancement package 2 for SAP NetWeaver 7.0: You make sure that you have set up your SAP Solution Manager system for the download of packages, and that you have configured the Maintenance Optimizer.
3. You verify the correctness of system information in SAP Solution Manager. For more information, see the *Maintenance Planning Guide* at ► <http://service.sap.com/mopz> → *How To's and Guides* ⚡.
4. You download the required software packages.
5. You upgrade to the new release.
The upgrade to *SAP NetWeaver 7.0 including enhancement package 1 or 2* comprises the respective enhancement package. There are no additional steps required.
6. You perform the delta Customizing for the SAP NetWeaver system.
7. You test the SAP NetWeaver system.

Tools

- SAP Solution Manager Maintenance Optimizer
- Upgrade Tool (SAPup/SAPJup)

Documentation

- *Maintenance Planning Guide*
- *Upgrade Guide – SAP NetWeaver 7.0 <Usage Type / Technology> Including Enhancement Package x*

4.4 Enhancement Package 1 for SAP NetWeaver 7.0

With SAP enhancement packages for SAP NetWeaver 7.0, new features are introduced, either in existing IT scenario variants or in completely new variants. The following table provides you with a quick overview of this new features.

For a complete list of all features and changes, see the *SAP Library* [[page 14](#)] at *What's new in SAP NetWeaver 7.0 – Release Notes*

4.5 Enhancement Package 2 for SAP NetWeaver 7.0

IT Scenario	IT Scenario Variant	Changes and New Functions
Running an Enterprise Portal	Implementing a Federated Portal Network	Various improvements
Enterprise Reporting, Query, and Analysis	Enterprise Reporting, Query, and Analysis	<ul style="list-style-type: none"> ■ Query Designer: Document Integration. ■ Report Designer: Chart depending on group level context
	Excel Integration	BEx Analyzer: Global Selection Variants, refresh of individual queries
Enterprise Data Warehousing	Running the Enterprise Data Warehouse (EDW)	<ul style="list-style-type: none"> ■ Deletion of arbitrary requests within write-optimized DataStore objects ■ Flexible PSA deletion ■ Nearline storage enhancement to write-optimized DataStore objects ■ Check of referential integrity of attributes during load
Developing, Configuration, and Adapting Applications	Developing User Interfaces in Java with Web Dynpro	IT scenario variant name changed from formerly <i>Developing Java Applications Using Web Dynpro</i> . New functions include edit themes for Web Dynpro.
	Developing User Interfaces in ABAP with Web Dynpro	IT scenario variant name changed from formerly <i>Developing ABAP Applications Using Web Dynpro</i> . New functions include Adobe Flash Islands for Web Dynpro ABAP to include Flash-based UI content into Web Dynpro ABAP applications, improved rendering for faster UI rendering, and substantial improvements regarding keyboard navigation within applications.
SAP NetWeaver Operations	Information Lifecycle Management	IT scenario name changed from formerly <i>Data Archiving</i> . Information lifecycle management includes data archiving as well as retention management and system decommissioning features.

4.5 Enhancement Package 2 for SAP NetWeaver 7.0

The following table provides you with a quick overview of new features contained in enhancement package 2 for SAP NetWeaver 7.0.

For a complete list of all features and changes, see the *SAP Library* [[page 14](#)] at *What's new in SAP NetWeaver 7.0 – Release Notes*

**NOTE**

Enhancement package 2 is currently only available for customers participating in the ramp-up program.

For information about the installation of enhancement package 2 for on an existing SAP NetWeaver 7.0 system, see the *How to Install SAP Enhancement Package 2 for SAP NetWeaver 7.0 – A Practical Guide*.

IT Scenario	IT Scenario Variant	Changes and New Functions
Developing, Configuring and Adapting Applications	Developing User Interfaces in ABAP with Web Dynpro	The new Web Dynpro ABAP Page Builder enables re-usable UI components to be arranged in a layout. The content of a page can be enhanced with additional information by implementing a side panel.
n/a	n/a	SAP NetWeaver Business Client 3 SAP NetWeaver Business Client offers a unified environment for and a single point of entry to SAP business applications and technologies. SAP NetWeaver Business Client 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.
SAP NetWeaver Operations	Information Lifecycle Management	<ul style="list-style-type: none"> ■ Retention Management: New Web Dynpro ABAP-based IRM application for assigning retention rules and import / export of rules; destruction of archived data in the storage system incl. attachments; multi-client enablement of several IRM functions ■ Retention Warehouse: Automation of system decommissioning; check sums to check the completeness of information; local reporting (without BW); copy and merge of audit areas

5 System Landscape

5.1 Planning Your System Landscape

This section gives you an overview of the steps required to identify your technical system landscape for SAP NetWeaver:

1. Determine the IT scenarios of SAP NetWeaver that you want to implement.
2. Determine which installable software units (that is, systems with usage types, standalone engines, and clients) are required for these IT scenarios.
3. Determine the required shared services that you want to run in central systems in your system landscape and the landscape aspects relevant for their implementation.
4. Determine your system landscape; that is, you decide how many systems you require and how you want to use each of these systems.
5. Together with your hardware partner and technical consultant, you map the required systems and standalone engines of SAP NetWeaver to hosts.
6. You implement your system landscape of SAP NetWeaver.

The following figure shows what the overall system landscape of SAP NetWeaver could look like:

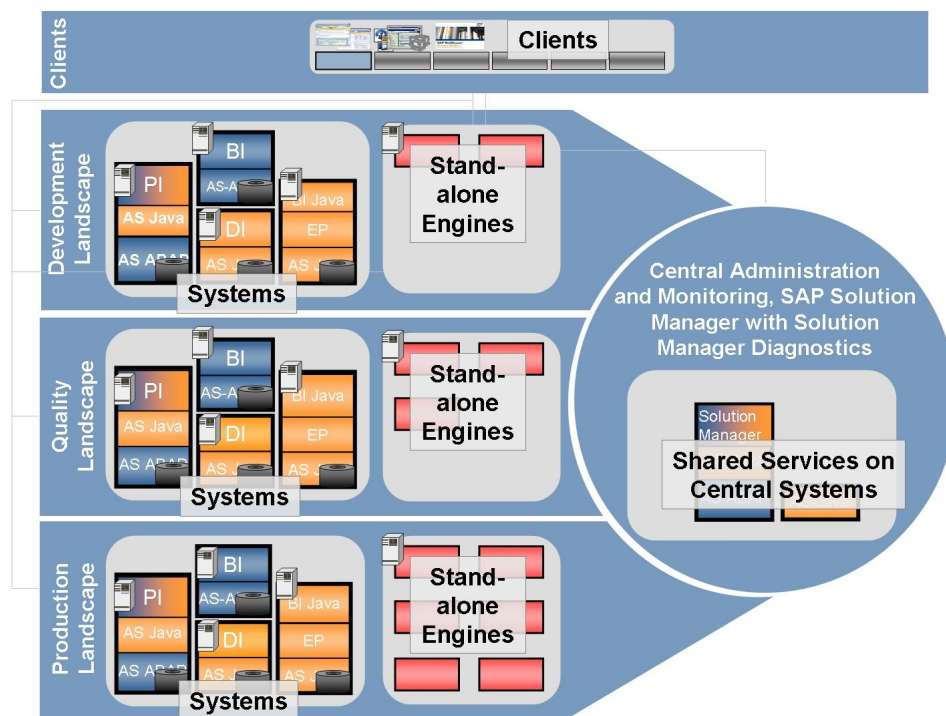


Figure 4: SAP NetWeaver System Landscape

In this example, you have different environments for development, quality, and production. In addition, there are shared services that you normally use across your system landscape and not just for your SAP NetWeaver landscape. You normally run shared services on central systems in your landscape.

Process

To plan your SAP NetWeaver system landscape, proceed as follows:

1. Determine the IT scenarios of SAP NetWeaver that you want to implement. For more information about the IT scenarios of SAP NetWeaver, see *Overview* [page 17] and the overview sections for each scenario in section *IT Scenarios* [page 75].
2. Determine which installable software units (that is, systems with usage types, standalone engines, and clients) are required for these IT scenarios. For more information, see the *Mapping of IT Scenario to Usage Types* [page 17] section.
3. Determine the required *shared services* [page 58] (such as SAP Solution Manager or SAP NetWeaver Administrator) that run on central systems in your system landscape and the landscape aspects relevant for their implementation.
4. You determine your system landscape. Consider the landscape-relevant aspects concerning your required *IT Scenarios* [page 75] to help you decide how many systems you require and how you want to use each of these systems. For more information see the SAP Community Network at ► <http://scn.sap.com/docs/DOC-8140> ◀ for *Landscape Management Tools* and at ► <http://scn.sap.com/docs/DOC-7744> ◀ for *SAP NetWeaver Distribution Models*.

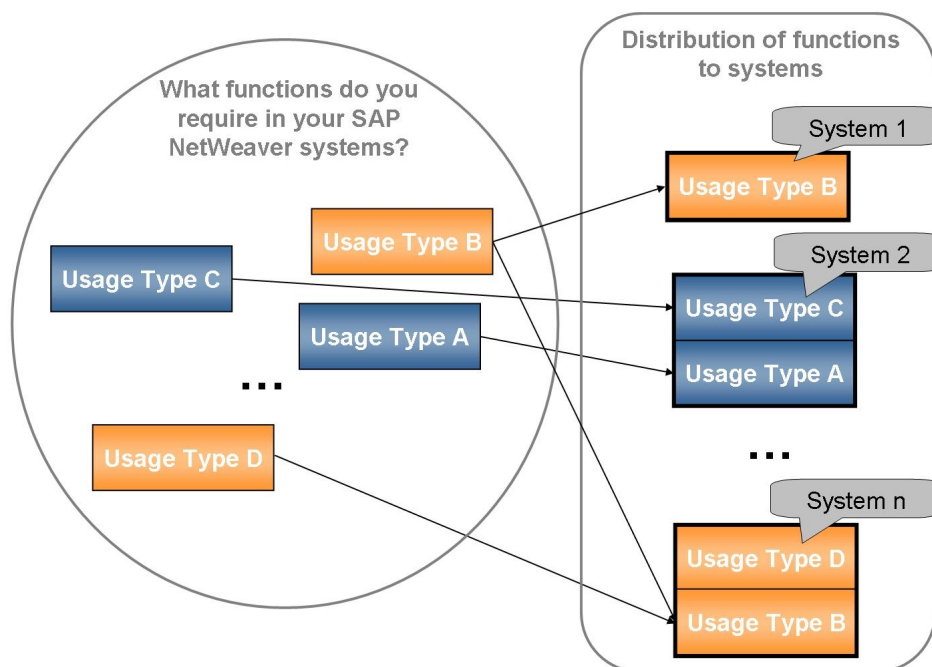


Figure 5: Example of a Distribution of Required Functions to Systems

**NOTE**

Although systems with multiple usage types may be easier to administer, they may also have certain drawbacks. You cannot distribute usage types installed together in one system to several systems without specific project support. For example, if you have a system with usage types A and C, you cannot migrate this system with standard procedures into two systems, one with only usage type A and the other with only usage type C. Therefore you have to use other methods for scalability (such as hardware solutions, clustering, or the installation of additional dialog instances).

You have to patch and upgrade all components installed in a single system together, which may also be a drawback for you. Here aspects of the business logic that you require can come into play, as certain components may not be available due to patch level requirements of other components in the same system.

In addition, you need to consider aspects such as security, backup/restore, system copy, and monitoring. Total cost of ownership considerations should also comprise hardware costs, operation costs, and costs of planned and unplanned production downtime.

How you judge the different aspects depends on your requirements. A drawback for one customer may be an advantage for another customer. No general guideline can be given, as this heavily relies on your requirements.

Therefore it is mandatory to plan your system landscape well in advance, according to your current and possible future requirements. We recommend that you perform this task together with a technical consultant.

**CAUTION**

The only exception is that SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

You now have an overall idea of your required system landscape comprising the systems, standalone engines, and clients needed to drive your IT scenarios as depicted in the following example system landscape.

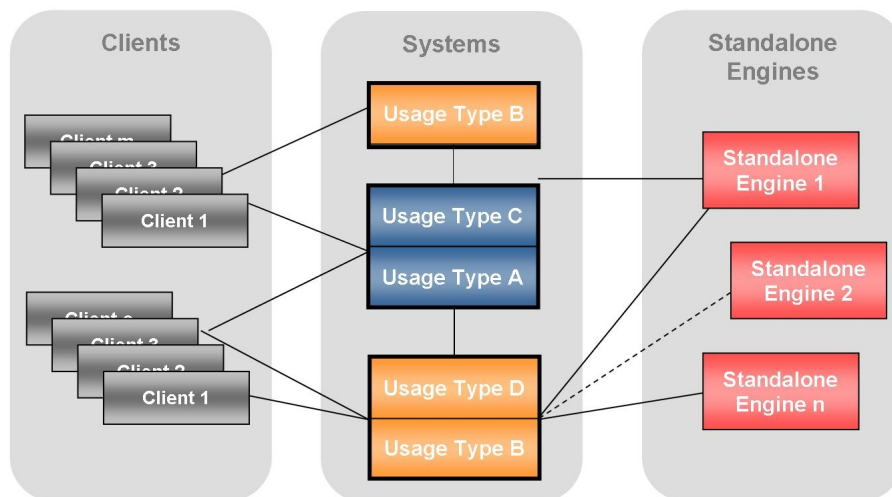


Figure 6: Example of a System Landscape



NOTE

Depending on your requirements, it may also be worthwhile to have multiple systems of the same usage type, with each system configured for a more specific purpose than the usage type itself. For example, you could decide to have three DI systems in your landscape: one for Design Time Repository (DTR), one for Change Management Service (CMS), and one for Component Build Service (CBS).

5. You map the required systems and standalone engines of SAP NetWeaver to hosts.



NOTE

No general guidelines can be given here, since the process strongly depends on your requirements. You should therefore perform this task together with your hardware partner and your technical consultant.

There are several sources of information for the sizing of each system:

- Your first point of reference is the Quick Sizer.

SAP built the Quick Sizer as an online sizing questionnaire Internet application in close cooperation with its hardware partners. This tool delivers general sizing categories, based on your volume load estimates. The results provide an objective basis for sizing, independent of platform and configuration.

For more information, see SAP Service Marketplace at:

- <http://service.sap.com/sizing> for SAP NetWeaver 7.0 sizing guides available under
▸ *Sizing Guidelines* → *Solutions & Platforms* ◀
- <http://service.sap.com/quicksizer> for more information and access to the tool itself

- You should also consider the following important aspects concerning sizing:

- High availability

For more information, see SAP Community Network at <http://scn.sap.com/docs/DOC-7848>.

5.1 Planning Your System Landscape

- Unicode
For more information, see SAP Community Network at <http://scn.sap.com/community/internationalization-and-unicode>.
- 64-bit platforms
- You have several distribution or scaling possibilities, for example, the following:
 - You can install multiple systems of one type – for example, multiple DI systems, one used for DTR, one used for CMS and one used for CBS.
 - You can scale every system by installing dialog instances or by distributing the database instance.
 - For every SAP system, you can additionally install Web Dispatcher. For more information, see *Standalone Engines* [page 37].
 - You could further distribute certain standalone engines. For example, Search and Classification (TREX) is based on a flexible architecture that supports a distributed installation..
- Contact your hardware partner to find out the appropriate number of sized hosts.
The platform-independent, abstract results of the Quick Sizer can be used by any of our hardware partners to create a concrete offer. SAP itself does not make any hardware recommendations; the responsibility for sizing and detailed hardware configuration lies with the hardware partners.

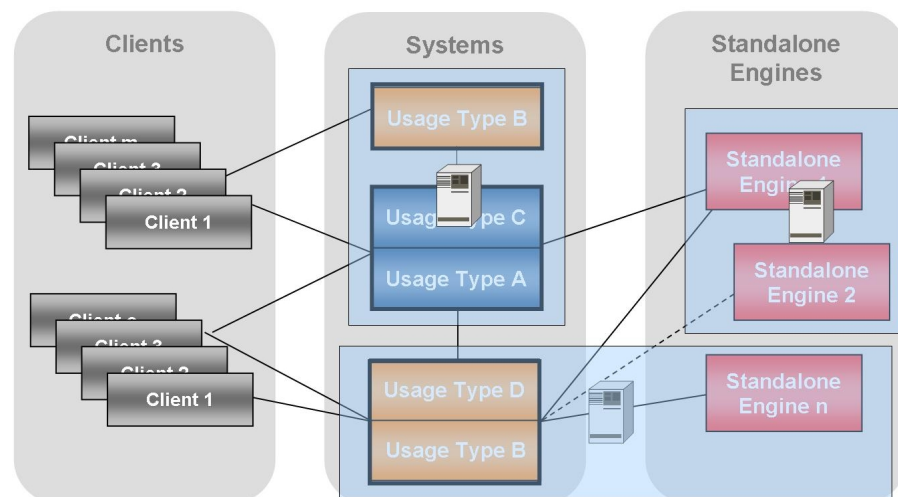


Figure 7: Example of Mapping of Systems and Standalone Engines to Three Hosts

To provide a mapping that fits your required functions and performance, your hardware partner and your technical consultant have to identify the number of required instances of SAP NetWeaver. They also need to know how to distribute these instances to hosts and what functions will run on which instance. Here the hardware partner and the technical consultant have to consider many different aspects, such as:

5.2 Interoperability of Central SAP NetWeaver Systems

- Number of required SAPS (SAP Application Benchmark Performance Standard) for each system (provided by Quick Sizer)
 - Landscape-relevant aspects concerning security. For more information, see the *SAP Security Guide* in the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *Administrator's Guide* → *SAP NetWeaver Security Guide* ◀.
 - Landscape-relevant aspects concerning scalability and high availability
6. You implement your SAP NetWeaver system landscape.
- For more information, see the corresponding *Implementation Sequence* sections for your IT scenarios.

5.2 Interoperability of Central SAP NetWeaver Systems

Central SAP NetWeaver systems are SAP NetWeaver systems that connect several systems in a landscape and provide shared services centrally for the connected systems (for more information, see below). The general goal of SAP NetWeaver with regard to interoperability is to provide independence for Releases and Support Packages of cooperating systems. For example, existing scenarios should continue working after the upgrade of a central system in a scenario landscape, as depicted in the following figure:

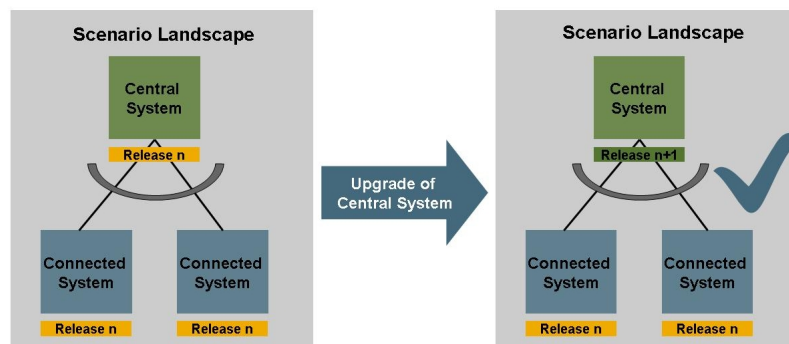


Figure 8: Independence Concerning Releases and Support Packages of Cooperating Systems

The following sections provide information about central SAP NetWeaver systems and the interoperability rules aimed at by SAP NetWeaver.

For information about dependencies between interconnected systems in your SAP system landscape, use the upgrade dependency analyzer available on SAP Service Marketplace at <http://service.sap.com/uda>. When you plan an upgrade of an SAP system, the Upgrade Dependency Analyzer can provide you with the information whether the upgrade requires changes to other systems in the landscape as well.

5.2.1 Definition of Central SAP NetWeaver Systems

Central SAP NetWeaver systems connect several systems in a system landscape and provide shared services centrally for the connected systems.

**EXAMPLE**

A BI system working as an enterprise data warehouse for several systems in your landscape is a central SAP NetWeaver system.

Central systems reduce redundancy, help to manage complexity, and reduce the time required to implement changes.

In SAP NetWeaver system landscapes, the following systems typically provide shared services centrally:

- Portal (consisting of usage type EPC and, optionally, EP)
- Business Intelligence (consisting of usage type BI ABAP and, optionally, usage type BI Java, and BI Accelerator standalone engine)
- Process Integration (consisting of usage type PI)
- Mobile Infrastructure (consisting of usage type MI)
- Development Infrastructure (consisting of usage type DI)
- Master Data Management (consisting of SAP MDM)
- Adobe Document Services (consisting of ADS, which is part of usage type AS Java)
- Administration (consisting of SAP Solution Manager, SAP NetWeaver Administrator - optional [part of usage type AS Java] - and System Landscape Directory [part of usage type AS Java])

5.2.2 SAP NetWeaver Interoperability Rules

Assuming that all capabilities of any SAP NetWeaver system are based on the same SAP NetWeaver release, the following interoperability rules apply regarding central SAP NetWeaver systems and SAP NetWeaver systems connected to them:

- (1) Multi-System Interoperability
Central SAP NetWeaver systems have to be able to serve multiple systems in parallel, for example several SAP ERP systems connected to a central portal.
- (2) Support Package Interoperability
Regarding Support Package levels, no interdependencies must exist between central SAP NetWeaver systems and systems connected to them. The only exception is if a new function requires a minimum Support Package level (which is normally defined when a new product is released). Inside of SAP NetWeaver systems, the dependencies between capabilities are handled by Support Package Stacks.
- (3) Downward Release Interoperability
Central SAP NetWeaver systems have to be downward-compatible regarding the cross-system interoperability of their releases. In other words, the central SAP NetWeaver system can have a higher release than the systems connected to it and the scenarios of the lower releases work. However, further customization or configuration might be required to bring existing processes back into operation.

**NOTE**

The rule is only valid as long as you do not try to run scenarios of a higher release.

**NOTE**

Concerning the interoperability of DI services provided centrally, the Support Package levels of the following parts have to be taken into account:

- The Support Package level of the DI system itself
- The Support Package level of the content of the DI system (such as track configurations, build plug-ins, or other software components you are using)
- The Support Package level of the SAP NetWeaver Developer Studio that is attached to the DI system
- The Support Package level of the runtime systems for which the development takes place

The releases and Support Package levels for the content of a DI system should be the same as for the attached SAP NetWeaver Developer Studios. However, the DI system itself can have a higher Support Package level or even a higher release.

The targeted runtime systems can have Support Package levels or releases higher than the design time, but must not run on lower Support Package levels or releases. If a runtime system is on a higher release than the design time, then regeneration, recompilation, and redeployment of development components might be required. However no source code adaptations are required.

Generally, one central DI system allows you to develop and build software spanning several releases and Support Package levels. For example, you can run a development landscape consisting of the following:

- A central DI system with Support Package Stack 13 of SAP NetWeaver 7.0
- A configured track for software development (DI content and SAP NetWeaver Developer Studio) with Support Package Stack 10 of SAP NetWeaver 7.0
- Runtime systems with SAP NetWeaver 7.0 Support Package Stack 12
- A second track configured for software development on SAP NetWeaver 2004

5.3 Shared Services

You normally run shared services on central systems in your system landscape. For SAP NetWeaver, there are the following features that could be used to implement shared services:

■ SAP Solution Manager

Used to implement, train, test, maintain, monitor, administer, control change, and manage incidents in your SAP solution system landscape (open end-to-end application management).

As of SAP Solution Manager 7.0 (4.0) Support Package 15, SAP Solution Manager has become the platform for SAP's end-to-end solution operations strategy: Functions for complete application

management have been combined with administrative tools, and have been merged in newly created, role based work centers.

**NOTE**

Note that you require an SAP Solution Manager system (minimum release 3.2 SP8) to install or upgrade to SAP NetWeaver 7.0. An SAP Solution Manager system is required to generate the SAP Solution Manager key needed during the installation or upgrade process. Without this key, the installation or upgrade process cannot continue. For more information, see SAP Note [805390](#).

To simplify the software maintenance procedure for your support staff and thus reduce your cost of operations, all corrective software packages, including Support Packages (Stacks) for SAP NetWeaver 7.0 and subsequent versions (as well as all applications that are based on this software) are available exclusively through the Maintenance Optimizer in SAP Solution Manager as of April 2, 2007. For more information, see ► <http://service.sap.com/solutionmanager> → *Functions in Detail* → *Support Area* → *Maintenance Optimizer* ◀.

■ Solution Manager Diagnostics

An integral part of SAP Solution Manager that runs as a Java application on the Java stack of SAP Solution Manager 7.0. It is used to analyze the root cause of incidents in your landscape in an efficient and safe way. Before Go-Live, Solution Manager Diagnostics has to be set up and made accessible remotely.

■ SAP NetWeaver Administrator

SAP NetWeaver Administrator is the central administration component, which is used for monitoring and administering Java applications. It is included in SAP NetWeaver systems with AS Java. For SAP NetWeaver 7.0, SAP NetWeaver Administrator is focused on Java and is used in combination with SAP Visual Administrator.

SAP NetWeaver Administrator exists in the following flavors:

- A local mode, which runs out of the box and which focuses on administering the underlying SAP NetWeaver AS Java
- A central mode, which has to be configured before use, and which deals with the system landscape management

SAP has decided to merge the central mode of SAP NetWeaver Administrator into the new work centers available as of SAP Solution Manager 7.0 SP 15. Thus, it can be used in an administrative context together with non-Java—based administration tools. Although the central mode of SAP NetWeaver Administrator is still available for some time, SAP does not develop this tool any further. SAP focuses on optimizing the administrative work centers of SAP Solution Manager instead.

The local mode of SAP NetWeaver Administrator stays untouched: It is available for current and future releases of SAP NetWeaver. As of SAP NetWeaver 7.1, it fully replaces SAP Visual Administrator as the common tool for day-to-day administration. Moreover, depending on the usage type, it will be enhanced by additional functions.

■ Alert Monitor

If your system landscape only consists of ABAP components, use the alert monitor included in AS ABAP (transaction RZ20) as the central tool for monitoring your entire system landscape. If malfunctions or problems occur, alerts are generated. These alerts are displayed in various monitors in a tree structure, and you can assign auto-reactions to them. In this way, you are informed quickly and reliably about an alert – even if you are not working in the alert monitor at that time.

■ SAP Central Process Scheduling by Redwood

SAP Central Process Scheduling application by Redwood enables central job scheduling and job monitoring of current and old releases of AS ABAP systems (as of Basis Release 3.1). This application is fully integrated in SAP NetWeaver. Depending on the business needs, SAP business applications are the initial trigger for scheduled activities. You can now manage jobs and job chains conveniently using a graphical user interface.

■ System Landscape Directory

The System Landscape Directory is the central directory of system landscape information relevant for the management of your software life-cycle. It contains a description of your system landscape (that is, software components that are currently installed) and a repository of software components that can theoretically be installed in your landscape (such as the software components available from SAP).

■ Software Lifecycle Manager

The Software Lifecycle Manager simplifies software logistics tasks (such as the installation of Support Packages) in your system landscape. It does this by providing services to SAP Solution Manager and as a result helps in managing the life cycle of your SAP solutions and products. The Software Lifecycle Manager provides the most important services out of the box. In other words, no configuration or operation effort from your side is required to profit from these services in your landscape.

For information about further services provided by the Software Lifecycle Manager, see the

► <http://help.sap.com/nw70> → SAP NetWeaver 7.0 Library <Language> → SAP NetWeaver by Key Capability → Solution Life Cycle Management by Key Capability → Software Life Cycle Management → Software Lifecycle Manager ◀.

■ Adaptive Computing Controller

The Adaptive Computing Controller enables users to control an adaptive computing landscape from a single point through observation, operation, and dynamic resource distribution. With adaptive computing, hardware, software, and system services are able to adapt to changing business needs. In the Adaptive Computing Controller, the runtime data of logical and physical landscapes can be monitored, application services can be started/stopped/relocated, and hardware resources can be assigned to application services. The operation can also be mass executed and be planned as tasks to be executed.

5.3.1 Use Cases

You can use the aforementioned features for use cases that are normally performed centrally. This section describes these use cases.

5.3.1.1 End-to-End Solution Operations

Running business applications through their complete life cycle is a challenge. Therefore, SAP provides the Run SAP methodology for implementing End-to-End Solution Operations. Based on a set of SAP standards, a roadmap, and a package for training and certification, Run SAP helps customers to facilitate End-to-End Solution Operations.

You can download the SAP standards for Solution Operations from SAP Service Marketplace at <http://service.sap.com/supportstandards>. They describe roles customers typically have in their IT environment. For optimal role support, SAP has grouped existing and new functions in SAP Solution Manager work centers as of SAP Solution Manager 7.0 Support Package 15. Operations aspects are fully covered by adding administrative functions for SAP NetWeaver as well. Work centers are ABAP Web Dynpro-based applications. They offer the following advantages:

- Easy to use, similar look and feel
- Context transfer while jumping from one work center into another
- Logical grouping of tools for a certain area
- Simple authorization concept
- Easy to expand

Each IT role belongs to one or more work centers. For instance, the *Technical Administrator* IT role is covered by the work centers for *System Monitoring*, *System Administration*, and *Landscape Management*.

The following work centers are available as of SAP Solution Manager 7.0 Support Package 15:

- Solution Landscape/Operation Setup
- Change Management
- Incident Management
- Service Delivery
- Business Process and Interface Monitoring
- Job Schedule Management
- System Monitoring
- System Administration
- Diagnostics: Root Cause Analysis
- Implementation & Upgrade
- System Landscape Management

Further work centers are planned for the future.

5.3.1.2 Support Infrastructure

A key requirement for effective support of IT solutions is the ability to perform root cause analysis with speed and efficiency.

SAP Solution Manager is a well-established infrastructure for SAP ABAP applications that efficiently supports SAP solutions. This helps ensure the high availability and smooth running of business processes. For more information, see the *SAP Solution Manager* section.

With Solution Manager Diagnostics, this knowledge has been extended to Java applications. If there are problems with the performance of iViews in SAP NetWeaver Portal, or if homegrown Java applications cause instability, Solution Manager Diagnostics helps trace the cause to eradicate the problem rapidly. Solution Manager Diagnostics is fully integrated into SAP Solution Manager 7.0. Solution Manager Diagnostics also contains the following third-party tools:

- WilyTech Introscope for measuring performance, as well as troubleshooting problems of AS Java and applications running on it
- SAP Loadrunner by HP, which enables SAP Support to produce a defined load in the SAP solution landscape remotely.

For more information, see the *Solution Manager Diagnostics* section.

The support infrastructure provides SAP Support with safe access to your productive landscape for safe root cause analysis, so ensuring that SAP Support does not change your landscape inadvertently. You require a support infrastructure to run SAP NetWeaver.

Landscape Aspects

- If you run pure ABAP system landscapes, you have to use SAP Solution Manager as a central support platform.
- If you use Java productively (for example, if you are using EP, PI, Web Dynpro, or SAP ESS/MSS as part of the SAP ERP 2005 application), besides SAP Solution Manager, you have to set up Solution Manager Diagnostics for supportability reasons.

Implementation

For information about the implementation, see the *Master Guide for SAP Solution Manager*.

5.3.1.3 Central Administration and Monitoring of SAP NetWeaver

Whereas the support infrastructure is focused on the support role, which guarantees remote accessibility and safe root cause analysis without making any changes, the focus of the central administration and monitoring infrastructure is to efficiently support the daily tasks of customer administrators (for example, monitoring, starting and stopping applications or instances, automation, and configuration).

**NOTE**

As of SAP Solution Manager 7.0 Support Package 15, almost all functions described below can be performed centrally from a single SAP Solution Manager system. They are included in the new *work centers* [page 61].

The newest versions of SAP Adaptive Computing Controller, which runs on SAP NetWeaver 7.1, and the newest versions of SAP Central Process Scheduling are not accessible from the work centers for high availability reasons.

The daily administration tasks are currently safeguarded by the following features and services:

- SAP NetWeaver Administrator for central administration and monitoring
- SAP Central Process Scheduling, which enables central job scheduling and job monitoring for current and old releases of AS ABAP systems (as of Basis Release 3.1). The newest version of the scheduler runs as a fully integrated part of SAP NetWeaver. In this version, depending on business needs, SAP business applications can act as the initial triggers for scheduled activities. Jobs and job chains can now be handled conveniently in a graphical UI. For more information about job scheduling, see SAP Developers Network at <http://sdn.sap.com/irj/nw-scheduling>.
- IT Reporting

It is essential for most customers to be able to analyze SAP NetWeaver with respect to service level agreements. In the past, this was done using expensive, third-party tools. Now customers can collect landscape-wide monitoring information centrally and forward this information to SAP Business Intelligence for powerful history or forecast analysis. Results can be presented in a convenient Web-based format.

Moreover, highly detailed statistics information from all parts of the landscape (ABAP and Non-ABAP components) is forwarded to SAP Business Intelligence. This offers detailed drill-down opportunities in case of low system performance. For more information, see the SAP Community Network at <http://scn.sap.com/community/business-intelligence>.
- History and forecast analysis using CCMS, together with the powerful reporting engine of SAP Business Intelligence

CCMS is included in SAP NetWeaver systems with usage type AS ABAP. CCMS provides alert monitoring of both Java and ABAP parts, performance history, and performance statistics.
- In the back end, the familiar CCMS agents are used for data provisioning. There is no need to handle the productive components directly. For more information about the CCMS agents, see SAP Community Network at <http://scn.sap.com/docs/DOC-15914>.
- SAP NetWeaver enables adaptive computing, where hardware, software, and system services are able to adapt to changing business needs. SAP NetWeaver provides the platform for users to run any service, anytime, on any server. It also provides a central point of control for flexible computing-resource assignment, the Adaptive Computing Controller, which is a shared service.

The Adaptive Computing Controller enables users to control the whole landscape from a single point through observation, operation, and dynamic resource distribution. The runtime data of logical and physical landscapes can be monitored, application services can be started, stopped, and relocated, and hardware resources can be assigned to application services. The operation can also be executed on a mass scale and be planned as tasks to be executed.

For more information about Adaptive Computing, see SAP Service Marketplace at <http://scn.sap.com/docs/DOC-16360>.

- System Landscape Directory as a complete landscape directory

Landscape Aspects

- We recommend that you use the new work centers, which are part of SAP Solution Manager 7.0 SP15.
However, you can also access all functions described here individually.
- If you run pure ABAP system landscapes, use SAP Solution Manager for central monitoring. There is no need to implement System Landscape Directory for administration and monitoring purposes in this case.
- If you use Java productively (for example, if you are using EP, PI, Web Dynpro, or SAP ESS/MSS as part of the SAP ERP 2005 application), we recommend that you also set up a non-productive version of the SAP System Landscape Directory in SAP Solution Manager. This non productive version is then continuously updated with data from the productive SLDs using bridge forwarding. The new work centers offer many functions for monitoring and administering Java.
- Install the newest versions of SAP Central Process Scheduling and SAP Adaptive Computing Controller on separate systems.
- The more functions you use in SAP Solution Manager, the more you need to rank it as mission critical. Depending on your business needs, you should set up SAP Solution Manager itself as a high availability system.

Implementation Sequence

SAP NetWeaver administration tools and their implementation are covered by the *SAP NetWeaver Operations* IT scenario.

5.3.1.4 Collection of Landscape Data

The support infrastructure and the SAP NetWeaver administration tools rely on system landscape data. With regard to the management of this landscape data, we need to distinguish between two cases:

1. If the landscape consists of ABAP components only, SAP Solution Manager can collect all required landscape data. You do not need to implement the System Landscape Directory for the collection of landscape data in this case, but we highly recommend it.

2. If there are non-ABAP components in the solution landscape, the System Landscape Directory is mandatory. The landscape data that is automatically gathered by the System Landscape Directory is replicated to SAP Solution Manager.

The System Landscape Directory has several topology options. They offer different levels of availability at the expense of low administration and operation effort. As a result, there is no generic rule on how to set up the SLD in your system landscape.

For more information, see the *System Landscape Directory* section.

5.3.1.5 Authentication and Single Sign-On

Before implementing your system landscape, plan how to implement authentication and how to integrate different systems into a Single Sign-On landscape. Single Sign-On reduces complexity for end users, saving them valuable time, while also reducing administration effort for resetting passwords, which helps reduce TCO.

Once you have logged on to the portal where authentication takes place, all systems in the landscape – no matter whether they are based on AS ABAP, AS Java, or both – can be accessed.

For more information, see the *Authentication and Single Sign-On* IT scenario.

5.3.1.6 Integrated User and Access Management

In a system landscape containing a combination of ABAP and Java components, we recommend that you integrate your user and access management. This enables you to use the same user data across different systems, administer this data centrally, and control access to data. SAP's mature, fine-grained authorization concept allows detailed control of access rights. SAP NetWeaver provides both ABAP and Java-based user management solutions. The user management solution, which you use to administer your user data, depends on factors such as the type of systems that are running in your landscape.

If you want to use central user administration, we recommend that you run it in a non production system. If you have not already set up central user administration in a dedicated system, then implement it in the SAP Solution Manager system.

For more information, see the *Integrated User and Access Management* IT scenario.

5.3.1.7 Creating Interactive Forms and Print Forms

You can use SAP Interactive Forms by Adobe to create interactive forms and print forms for optimizing your form-based business processes. This solution uses the Portable Document Format (PDF) and software from Adobe Systems Inc. (Adobe document services and Adobe LiveCycle Designer) that has been integrated into the SAP environment.

You can create interactive forms in PDF format that allow users to fill out the form on the screen and save their entries in XML format in the form. When the SAP system receives the PDF form, it extracts the data saved in the form and can process it further. You can also merge a form template with current system data to generate a PDF document that you can print out or send by e-mail.

**NOTE**

In certain circumstances, you require a license for interactive forms. For more detailed information, read SAP Note [750784](#).

For more information, see the *Adobe Document Services* section.

5.3.2 Examples of the Overall System Landscape of Shared Services

This section provides examples of how you can set up shared services depending on the system landscape for which they are intended. The following examples aggregate the landscape aspects given in the *Use Cases* section.

**NOTE**

The following sections and the illustration do not show information about the life cycle of shared services. For example, you may also need a development and test/quality assurance system for SAP Solution Manager. You should consider this aspect, in addition to the information provided in this section based on your requirements.

Pure ABAP Landscape

If you run a pure ABAP system landscape, you have to use SAP Solution Manager as the central monitoring and support platform. Monitoring can be performed using the Alert Monitor (transaction RZ20). However, we recommend that you use the SAP Solution Manager work centers. You do not need to use the System Landscape Directory.

Small and Medium-Sized Customer Landscapes with Java

If you use Java productively (for example, if you are using EP, PI, Web Dynpro, or SAP ESS/MSS as part of the SAP ERP 2005 application), you have to set up additional components (besides SAP Solution Manager) for optimal monitoring, administration, and support. Solution Manager Diagnostics and the central mode of SAP NetWeaver Administrator are already fully integrated into SAP Solution Manager 7.0 as the central operations hub.

We recommend that you set up and operate the system that hosts your productive SAP Central Process Scheduling application as a mission critical system. Do not install SAP Central Process Scheduling in the SAP Solution Manager system.

In the SAP Solution Manager system, you should set up a local System Landscape Directory in addition to a central runtime System Landscape Directory. This creates a clear separation between your

management system (SAP Solution Manager) and managed systems in your landscape. For more information about this setup, see the *Planning Guide - System Landscape Directory*.

If you want to use a central system for Adobe document services, we recommend that you install a dedicated system for this purpose in your production environment. For more information about the sizing of the system for the different use cases, see the *Sizing Guide* for Adobe document services at SAP Service Marketplace at ► <http://service.sap.com/sizing> → *Sizing Guidelines* → *Solutions & Platform* ◀.

We recommend that you start with this centralized SAP Solution Manager approach as depicted in the following figure:

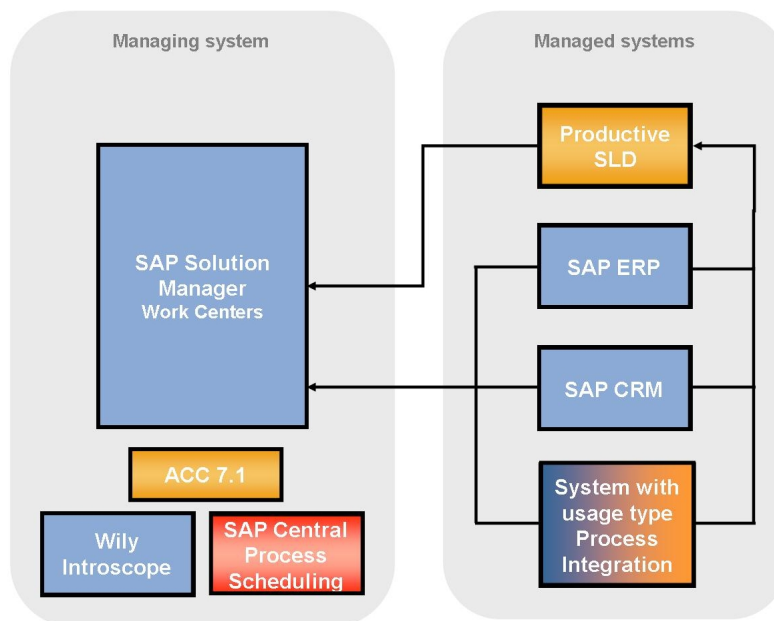


Figure 9: Single SAP Solution Manager Landscape

Large Customer Landscapes with Java

Large customers who have environments in their landscape that are large and distributed, administered by different groups, or separated for security reasons, can consider a distributed operations setup. In addition to the centralized setup described for small and medium-sized customers above, large customers can put parts of the central management functions on extra hosts or systems for performance or policy reasons.

- You can set up an extra system or client for central user administration (CUA).
- The Change and Transport System (CTS) can be run on an extra system. However, it is not performance-intensive or data-intensive.
- You can set up an extra system for central CCMS monitoring. Depending on the Customizing and the landscape size, central CCMS might generate a high system load. You can connect a separate central CCMS to SAP Solution Manager for displaying alerts in the alert inbox of the *System Monitoring* work center.

- You can use a separate SAP NetWeaver system with usage type BI together with SAP Solution Manager. This might be worthwhile with respect to the amount of landscape management data that is stored for reporting purposes. The amount of data strongly depends on the data granularity, storage time frame, and landscape size.
- You can easily put Wily Introscope Enterprise Manager on a separate host.

Other aspects described above for small and medium-sized customers (such as the setup of the System Landscape Directory) are also valid for large customers.

5.3.3 Feature Details

This section provides further information about the features described above.

5.3.3.1 SAP Solution Manager

SAP provides you with SAP Solution Manager as the strategic application management and operations solution and to enable the collaboration between you and SAP. You need to install at least one SAP Solution Manager in your system landscape. To ensure the availability of this application management solution, an SAP Solution Manager system (minimum release 3.2 SP8) is required to install or upgrade to SAP NetWeaver 7.0. If you are already using an SAP Solution Manager, you can also use it to manage the solution that you build with SAP NetWeaver. In this case, we highly recommend that you update SAP Solution Manager to the latest version.

As of SAP Solution Manager 7.0 SP15, you can use the new work centers.



NOTE

During the SAP NetWeaver 7.0 installation or upgrade process, you are prompted to enter the SAP Solution Manager key. An SAP Solution Manager system is required to generate this key. Without this key, the installation or upgrade process cannot continue.

You can generate all required keys for your entire system landscape (development, quality assurance, and production system) in one SAP Solution Manager system. If you plan to install several solution landscapes (for example, in different countries), one SAP Solution Manager system is still sufficient.

For more information, see SAP Note [805390](#).

It is possible to install multiple SAP Solution Managers. If you do so, each SAP Solution Manager should host a separate business solution.

If you want to reduce the risk of unavailability, you should not install SAP Solution Manager as a central component. Instead, you can operate a 2-system landscape with a test environment and production environment of SAP Solution Manager (especially if you are using time-critical functions like Support

Desk). If you also develop your own content, a 3-system landscape with a development, test, and production environment is recommended.

For more information about SAP Solution Manager, see the following table:

Topic	Where to Find More Information
System infrastructure, scenarios, installation, and configuration of SAP Solution Manager	<i>Master Guide – SAP Solution Manager</i> available on SAP Service Marketplace at ► http://service.sap.com/instguides → <i>SAP Components</i> → <i>SAP Solution Manager</i> → <i><Release></i> ◀
Benefits and usage scenarios	SAP Solution Manager – Learning Maps available on SAP Service Marketplace at ► http://service.sap.com/rkt-solman ◀ or ► https://service.sap.com/solutionmanager ◀
Additional information	See SAP Service Marketplace at ► http://service.sap.com/solutionmanager ◀

5.3.3.2 Solution Manager Diagnostics

Solution Manager Diagnostics provides efficient and safe root-cause analysis of incidents in customer solutions powered by SAP NetWeaver. It can help monitor operating systems, databases, Java application activities, performance, and logs. It also supports the reporting of software and configuration changes that can lead to malfunctions and errors.

You must run Solution Manager Diagnostics within your SAP solution landscape, if you are running applications based on SAP NetWeaver systems with usage type AS Java. Agents are responsible for delivering the data from all productive hosts within your system landscape to the Solution Manager Diagnostics system.



CAUTION

SAP Support performs root-cause analysis on incoming incidents with Solution Manager Diagnostics. Not installing and configuring this support infrastructure results in a dramatically reduced service level.

Solution Manager Diagnostics is fully integrated into SAP Solution Manager 7.0.

Solution Manager Diagnostics also contains Wily Introscope (Display, Server, and Agent part) for measuring performance and for troubleshooting problems of Non-ABAP applications. Wily Introscope is frequently used for troubleshooting applications running on AS Java.

SAP has signed a distribution agreement for Wily Introscope. SAP customers are allowed to use this tool in a preconfigured way.

For more information about Solution Manager Diagnostics and an FAQ list, see SAP Service Marketplace at <http://service.sap.com/diagnostics>.

5.3.3.3 System Landscape Directory

Today's system landscapes consist of several distributed software components with different platform dependencies, different interfaces, and different requirements for installation and change management. An overall concept is required that facilitates the implementation, upgrade, and maintenance of your system landscapes – including the SAP NetWeaver system landscape you are installing. This is where the System Landscape Directory (from now on abbreviated as SLD) comes into play.



NOTE

Note that the abbreviation SLD is not intended to define a product, since the System Landscape Directory is part of SAP NetWeaver. This abbreviation is solely intended to improve readability.

The System Landscape Directory of SAP NetWeaver (SLD) 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. Information in the SLD is used by various SAP tools, for example, for planning and performing upgrades to the system landscape, finding destination information for ABAP systems and Web services (Web Dynpro Java), and for maintaining information used by the SAP NetWeaver Development Infrastructure (NWDI) and Process Integration (PI).

The SLD gathers information from the landscape: Technical systems use SLD's self-registration, SAP Component Repository content is imported; based on this information manual content (mainly business systems for PI and landscapes) is created. The SLD provides the following features:

- The SLD stores information about all installable and installed components of a system landscape and their host systems based on the standard Common Information Model (CIM).
- SAP provides both a Web-based UI for interactive access and client APIs for programmatic access in ABAP and Java.
- SAP provides up-to-date information about installable SAP software and their dependencies on SAP Service Marketplace to be imported into the SLD.
- The SLD allows name reservation in the NWDI such as development component or Java package names
- The SAP NetWeaver Process Integration uses the SLD to store information about business systems, which are logically connected to technical systems.

If there are non-ABAP components in the solution landscape, the System Landscape Directory is mandatory. If your system landscape consists of ABAP components only, there is no need to implement the System Landscape Directory since SAP Solution Manager can collect all required landscape information. However, we highly recommend to use the System Landscape Directory.

The System Landscape Directory is part of SAP NetWeaver 7.0. It is automatically included in every SAP NetWeaver 7.0 system with usage type AS Java. During the installation of a system with usage type Java you decide whether you want to use this local SLD or whether you want to register the system to an

existing central SLD. To start operating the System Landscape Directory in one of your systems, you simply have to perform some quick and easy configuration steps in the relevant system.

We recommend that you use a DNS alias so that you are able to switch to another System Landscape Directory easily.

**EXAMPLE**

If customers build a new landscape, they normally start with a sandbox environment. Over time, more and more environments are set up. Once the production environment is in place, move the System Landscape Directory there. To do this, you can configure a new System Landscape Directory in the production environment, synchronize it manually with the old System Landscape Directory (export/import), and switch to the new one.

**NOTE**

The System Landscape directory of SAP NetWeaver 7.0 is compatible with old System Landscape Directory versions. After the installation, you can migrate the System Landscape Directory data to an SAP NetWeaver 7.0 System Landscape Directory.

Topology

The System Landscape Directory offers several topology options with different grades of availability at the expense of low administration and operation effort. Therefore, there is no generic rule for setting up a System Landscape Directory in your system landscape. To find the topology and synchronization strategy for the System Landscape Directory that fits your requirements concerning the System Landscape Directory availability (and hence, the availability of the applications that rely on it), see the documentation *Planning Guide – System Landscape Directory* available in SAP Community Network at <http://scn.sap.com/docs/D0C-8042>.

Implementation Sequence

Perform the following steps:

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps
1	If required, install the standalone engine gateway on the System Landscape Directory host.	For the data exchange between the data suppliers of ABAP-based systems and the System Landscape Directory, a gateway is required since the data is exchanged using RFC.
2	Configure the System Landscape Directory in the system where you want to run System Landscape Directory. [<i>Post-Installation Guide – System Landscape Directory</i>]	<ul style="list-style-type: none"> ■ For SAP NetWeaver 7.0, the installation procedure offers an option to configure the System Landscape Directory automatically during the installation. ■ If you want to run the System Landscape Directory in a separate system, install an SAP NetWeaver 7.0 system with usage type AS Java according to the <i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating</i>

No.	Action [Corresponding Documentation]	Remarks and Subsequent Steps
		<i>System</i> >: < <i>Database</i> > and perform the automatic configuration of the system landscape directory as part of the standard installation procedure.
3	Download and install the most current SLD content - updated monthly - available on SAP Service Marketplace. [SAP Note 669669]	

5.3.3.4 Adobe Document Services

Adobe document services are included in ASJava. This means that you have to install an SAP NetWeaver system with usage type AS Java regardless of the development language of your application (ABAP or Java).

The following Adobe software is included SAP Interactive Forms by Adobe:

- Adobe LiveCycle Designer
A graphical tool for designing form layouts; it is integrated into SAP NetWeaver Developer Studio and ABAP Workbench.
- Adobe Document Services
Web services used to generate the PDF forms at runtime; in interactive scenarios, they extract the XML data from the form and send it to the system.

On the front end, you require Adobe Acrobat or Adobe Reader. For information about the required version, see SAP Note [834573](#).

You can use ADS as a local installation (option A in the following figures) or as a shared service on a central SAP NetWeaver AS Java (option B in the following figures).

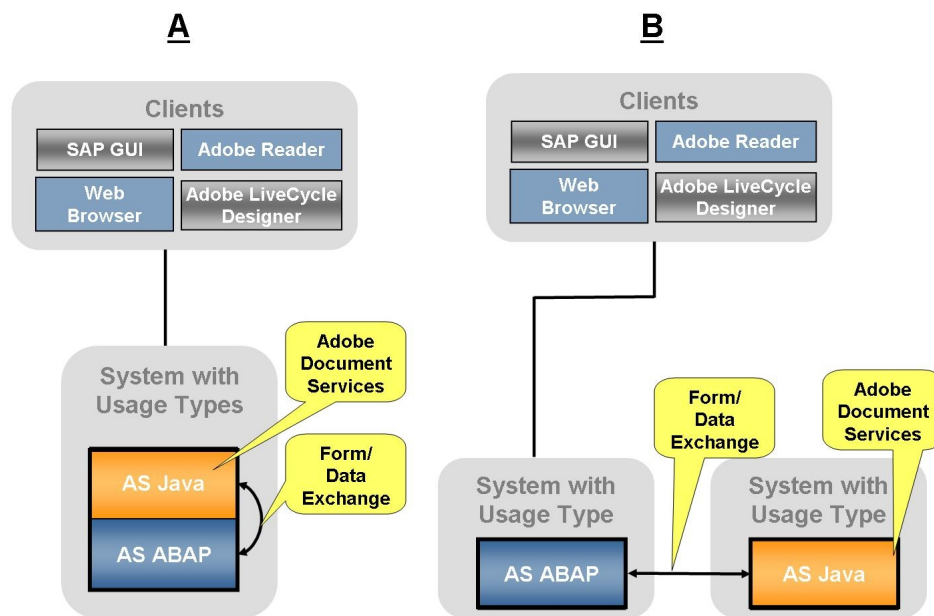


Figure 10: System Landscapes for SAP Interactive Forms in AS ABAP

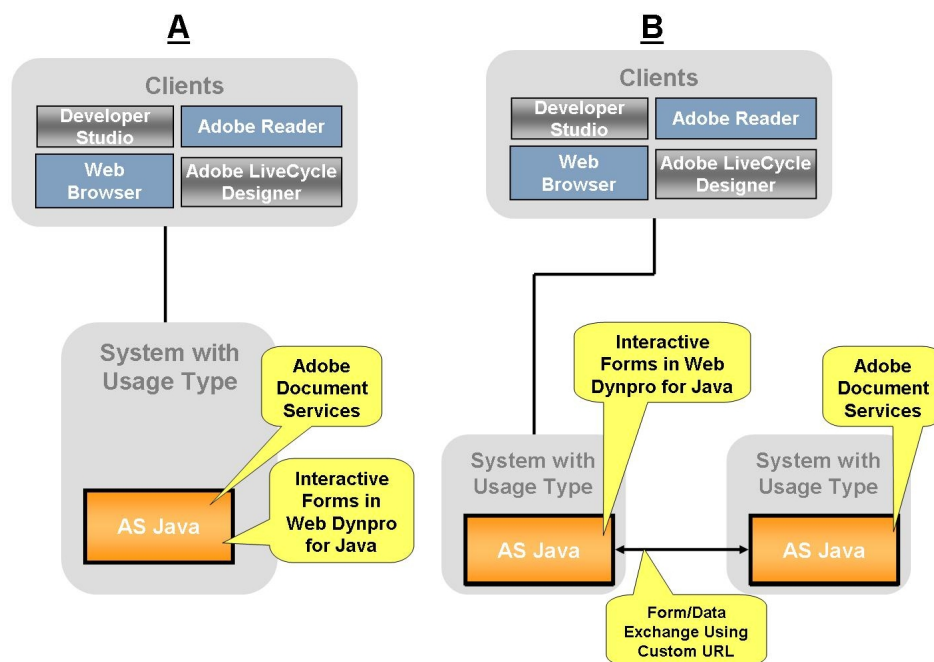


Figure 11: System Landscapes for SAP Interactive Forms in AS Java

When you want to implement Adobe Document Services, consider the following system landscape aspects:

- Using One ADS Installation from Several Systems

To optimize the use of your system landscape, you can connect several ABAP-based SAP systems to one SAP NetWeaver AS Java that is running the ADS that generates SAP Interactive Forms output formats. This setup is suitable for the use of SAP Interactive Forms in interactive scenarios.

**NOTE**

For SAP NetWeaver 7.0 SP Stack 06 and higher, run both usage types AS ABAP and AS Java in one system to improve performance for printing scenarios in this system. This precludes the possibility of using one central ADS for several systems.

As of SAP NetWeaver 7.0 SP Stack 12, this restriction no longer applies. Therefore you can also improve performance by using one central ADS for several systems.

Ensure that the system running ADS has at least the Support Package level of the systems connected to it.

■ Using Several ADS Installations from One System

In an ABAP system, it is possible to create connections to several ADS installations through corresponding RFC destinations.

The ABAP system uses the default ADS destination shipped with SAP NetWeaver. Note that this configuration is only created by the installer when you install an ABAP+Java dual stack system. If you install a Java standalone system, this destination is not created automatically. Therefore, if you choose a setup with several destinations, this needs to be coordinated with the business application using a specific ADS installation. This is because the destination needs to be specified explicitly in the application.

In Java development (Web Dynpro), you can only connect to one ADS installation at a time.

- Adobe document services currently do not run on all platforms supported by SAP NetWeaver. For more information, see SAP Note [925741](#).
- For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Community Network at <http://scn.sap.com/community/interactive-forms-by-adobe>.

6 IT Scenarios

In the following chapters you will find for each scenario:

- Short introductions
- A rough overview of the system landscape



NOTE

Note that the system landscapes presented are only intended to give you a quick overview of the required software units. For more information see the SAP Community Network at <http://scn.sap.com/docs/DOC-8140> for *Landscape Management Tools* and at <http://scn.sap.com/docs/DOC-7744> for *SAP NetWeaver Distribution Models*.

- Implementation sequences with references to all further documentation

6.1 Running an Enterprise Portal

6.1.1 Overview

SAP NetWeaver Portal serves as a single point of entry to the applications, services, and information of an organization.

Running an Enterprise Portal is an IT scenario. Implementing this scenario provides role-based and secure access to all types of applications, services, and information in a portal environment.

Customers can benefit from the numerous predefined business packages available to them, or they can create their own content.

This scenario includes the following variants:

- *Providing Uniform Content Access*

Organizations can develop, configure, and operate a knowledge-based, Web-like user interface to give users a consistent environment for accessing content. For example, organizations may integrate both SAP and non-SAP applications into SAP NetWeaver Portal using a single, consistent front-end.

- *Implementing a Federated Portal Network*

Organizations can implement a federated portal network using the SAP NetWeaver platform to share content between portals. A federated portal network allows organizations with distributed portal installations, SAP and non-SAP, to provide a single portal access point per user to portal information, services and applications distributed on portals over the entire organizational network. A federated portal network allows utilizing existing content and configurations and minimizes necessary administration effort.

6.1 Running an Enterprise Portal

■ *Implementing an External-Facing Portal*

Organizations can provide information, services and applications to customers, vendors and business partners in a public Web portal that performs well over the Internet and operates in a manner similar to standard, customizable Web sites.

**NOTE**

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ↵.

6.1.2 System Landscape

The following figure shows the system landscape of this IT scenario:

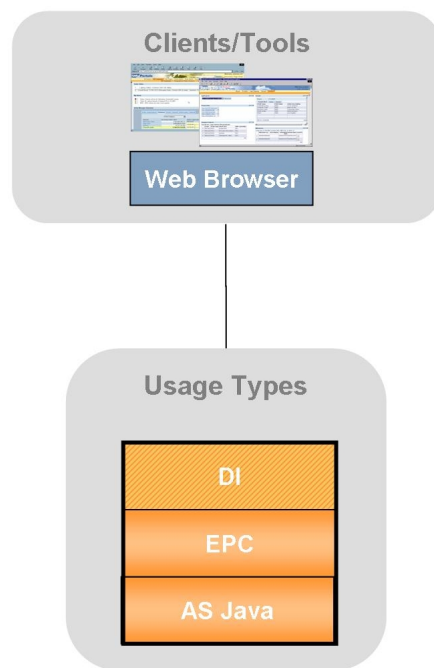


Figure 12: System Landscape Running an Enterprise Portal

When you plan your system landscape, consider the following aspects:

- Usage type DI is optional to this IT scenario. It is required only if you want to develop your own content.
- You can activate usage type DI either in the EPC system or in a separate system. If you choose the latter option, you will have one system with usage types AS Java and EPC and one system with usage types AS Java and DI.
- To use SAP NetWeaver 7.0 usage type Enterprise Portal for information broadcasting with SAP BW 3.5 (SAP NetWeaver 2004), SAP NetWeaver 7.0 usage type BI Java is required in the EP system.

6.1.3 Implementation Sequence

Process

The installation of the *Providing Uniform Content Access* IT scenario variant is a prerequisite for the implementation of the IT scenario variants *Implementing a Federated Portal Network* and *Implementing an External-Facing Portal*. The implementation differences among the variants are in the configuration steps.

To install the *Running an Enterprise Portal* IT scenario, perform the following steps:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of a system with usage types EPC (includes installation of AS Java) and optionally DI [Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>]	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ You can install both EPC and DI in one AS Java system, or in two separate AS Java systems. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration templates can be applied by the Template Installer after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>.
3	Optional: Install the enterprise workspaces add-on. [Installation and Upgrade Guide - SAP NetWeaver Portal, Enterprise Workspaces 1.0]	Note that this add-on requires a separate license.

6.2 Accelerating Global Delivery of Applications

6.2.1 Overview

Accelerated Application Delivery for SAP NetWeaver enables end users worldwide to access web-based SAP applications (for example, SAP NetWeaver Portal) at near-LAN speed. This appliance overcomes bandwidth and latency issues very efficiently with caching, compression algorithms, and special application-aware optimizations. Currently, there are specific optimizations available for the SAP NetWeaver Portal, Knowledge Management (accessing and collaborating on documents) and the SAP Learning Solution. Additional optimizations are planned for other web-enabled SAP applications like Business Intelligence (BI), ERP Business Packages, CRM and Composite Applications – although with the generic optimizations those applications can already benefit from the technology today.



NOTE

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios* at a Glance ◀.

6.2.2 System Landscape

The following figure shows the system landscape of this IT scenario:

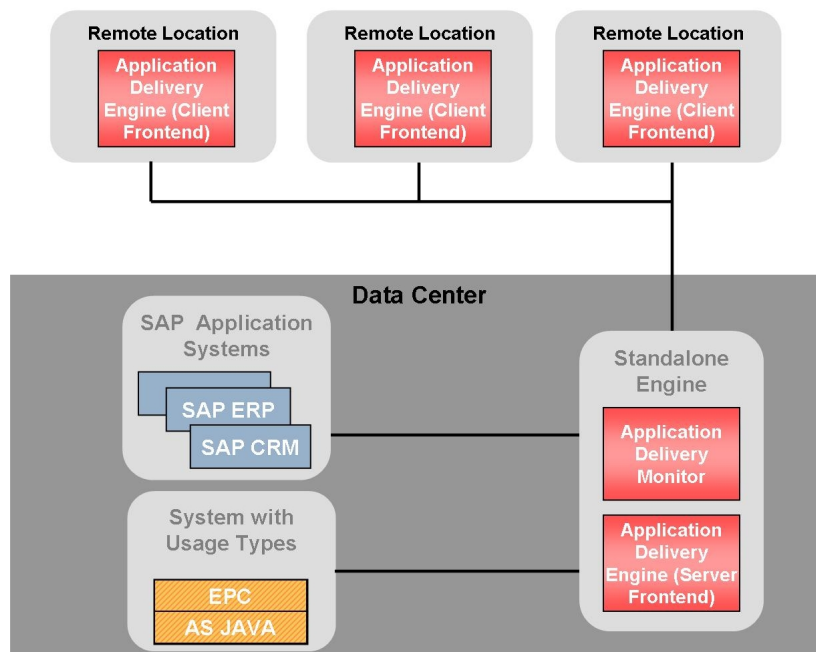


Figure 13: Accelerating Global Delivery of Applications

When you plan your system landscape, consider the following aspects:

- You have to install the Application Delivery Engine – Server Frontend on a dedicated host.

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- You can install the Application Delivery Monitor on any host in your data center, for example on the administrator's host.
- To manage configurations and the delivery policy, you can deploy a business package, the administration plug-in, on your SAP NetWeaver Portal.
- To achieve a performance improvement with Accelerated Application Delivery, you must first configure your local area network to run with high performance.

6.2.3 Implementation Sequence

Procedure

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of standalone engines: Accelerated Application Delivery</p> <ul style="list-style-type: none"> ■ Install the Application Delivery engine (server front end), Application Delivery Monitor and the Administration plug-in on the server side. ■ Install the Application Delivery engine (client front-end) on the client side. <p>[<i>Installation and Configuration Guide – Accelerated Application Delivery for SAP NetWeaver</i>] [<i>Installation and Configuration Guide – Accelerated Application Delivery for SAP NetWeaver Client for Windows</i>]</p>	

6.3 Enterprise Knowledge Management

6.3.1 Overview

Enterprise Knowledge Management provides all you need for the planning, building, and operation of an integrated work environment for information workers:

- Consolidation and integration of customers' intranet platforms

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- A technical platform for rebuilding and consolidating different internal information strategies into one, easy to maintain framework
- Interaction between business applications and business documents

Enterprise Knowledge Management provides central, role-based access to all of your information assets and provides a connection between structured business data and unstructured documents. All users – according to their role – can contribute to and profit from the easy creation, distribution, and classification of information.

This scenario includes the following variants:

- *Content Integration and Management*
Integrating repositories, defining metadata, indexing documents, creating taxonomies, and configuring user interfaces.
- *Content Creation, Publication, and Access*
Setting up an authoring environment; uploading or otherwise creating documents; publishing, classifying, approving, and sharing information; and searching for, navigating to, or being notified about information.
- *Documentation, Training Materials and Manuals Management*
Provides the environment for creating, translating, editing, publishing, and managing documentation, training materials, and manuals.



NOTE

For more information, see the *SAP Library* [\[page 14\]](#) at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.3.2 System Landscape

The following figure shows the system landscape of the IT scenario variants *Content Integration and Management* and *Content Creation, Publication, and Access*:

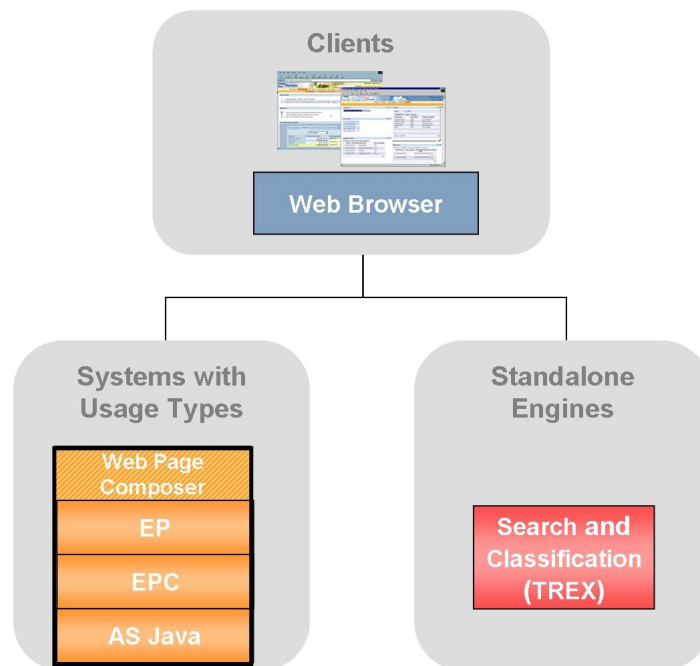


Figure 14: Content Integration and Management and Content Creation, Publication, and Access

The following figure shows the system landscape of the IT scenario variant *Documentation, Training Materials, and Manuals Management*:

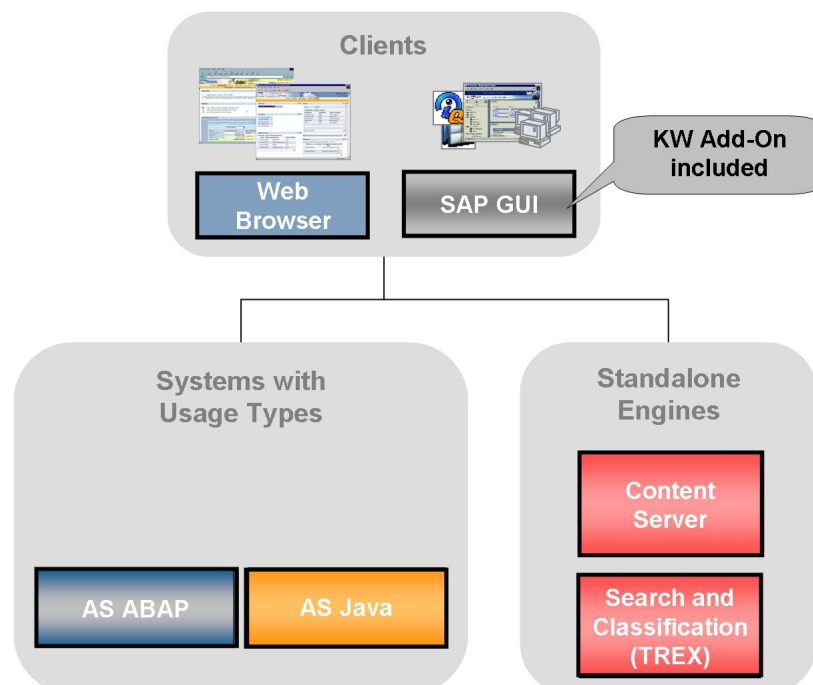


Figure 15: Documentation, Training Materials and Manuals Management



NOTE

When you install SAP GUI, make sure that you also select the installation of KW add-on.


6.3.3 Implementation Sequence

Procedure

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your system landscape (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>For the IT scenario variants <i>Content Integration and Management</i> and <i>Content Creation, Publication, and Access</i>, installation of a system with usage type EPC and EP (includes the installation of AS Java) [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>.
3	<p>For the IT scenario variant <i>Documentation, Training Materials and Manuals Management</i>, installation of a system with usage type AS ABAP and a system with usage type AS Java. [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types,

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Step	Action [Corresponding Documentation]	Remarks
		configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
4	Optional: for the IT scenario variant <i>Content Creation, Publication, and Access</i> , install the Web Page Composer add-on. [SAP Note 1080110]	
5	<p>Installation of standalone engines:</p> <ul style="list-style-type: none"> ■ For the IT scenario variant <i>Documentation, Training Materials and Manuals Management</i>, install the Content Server. [<i>Installation Guide – SAP Content Server 6.40</i>] ■ For both scenario variants, install Search and Classification (TREX). [<i>Installation Guide – SAP NetWeaver TREX</i>] <p> NOTE</p> <p>After the installation of Search and Classification (TREX), you have to configure the systems that communicate with TREX (for more information, see the documentation <i>Installation Guide – SAP NetWeaver TREX</i>):</p> <ul style="list-style-type: none"> ■ ABAP applications access TREX functions using the TREX ABAP client and the RFC protocol. In this case, you have to perform the post-installation steps to set up an RFC connection. ■ Java applications access TREX functions using the TREX Java client and the HTTP/HTTPS protocol. In this case, you have to perform the post-installation steps to set up an HTTP connection. <p>Note that some applications use both the ABAP and the Java client.</p>	We recommend that you use TREX 7.1, if your operating system preference allows it.
6	For IT scenario variant <i>Documentation, Training Materials and Manuals Management</i> : Install client SAP GUI. [<i>Installation Guide – SAP Front End</i>]	<ul style="list-style-type: none"> ■ When you install SAP GUI, make sure that you also choose to install the KW add-on. ■ If you want to use Microsoft Office as an editing tool, register the dynamic link

Step	Action [Corresponding Documentation]	Remarks
		library <code>htmltidy.dll</code> on each SAP GUI client. For more information, see SAP Note 517439 .

6.4 Enterprise Search

6.4.1 SAP NetWeaver Enterprise Search

SAP NetWeaver Enterprise Search provides unified, comprehensive and secure real-time access to structured as well as unstructured enterprise data and information. Search access to external information can be included by integrating external search services as REST and/or SOAP services.



NOTE

SAP NetWeaver Enterprise Search as a SAP NetWeaver Extension is a productized search solution and can be found on SAP's price list.

For more information about the product SAP NetWeaver Enterprise Search, see the following:

- <https://www.sdn.sap.com/irj/sdn/nw-enterprisesearch> ↩
- <http://service.sap.com/nwes72> ↩

SAP NetWeaver Enterprise Search leverages search services in underlying SAP systems. With SAP NetWeaver Enterprise Search 7.2, one of these used services is “Embedded Search” in AS ABAP which is described in the following.

SAP NetWeaver Enterprise Search 7.2 can search any SAP Business Suite application (starting with enhancement package 4 for SAP ECC 6.0) that has implemented search functionality based on “Embedded Search”. The indexes and configurations can be centralized on the Enterprise Search server as soon as it is present in the landscape. System-individual TREX instances become unnecessary.

6.4.2 Embedded Search

6.4.2.1 Overview

The technology for Embedded Search is available with enhancement package 1 for SAP NetWeaver 7.0 and above.

Every SAP Business Suite application uses SAP NetWeaver as its underlying technology platform. As part of usage type AS ABAP Embedded Search serves SAP Business Suite applications (for example SAP ERP or SAP CRM) as basic search technology. Embedded search enables every SAP Business Suite application to search in a unified way inside all its structured data. Embedded Search in AS ABAP will be leveraged by SAP Business Suite applications beginning with SAP Business Suite 7. It features rich out-of-the-box business content as well as the tools to create and modify search models. The capabilities of Embedded Search are limited to indexing and searching within a single SAP system (single SID).

This scenario includes the variant *Enabling Embedded Search*.

6.4.2.2 System Landscape

The following figure shows the system landscape of this IT scenario:

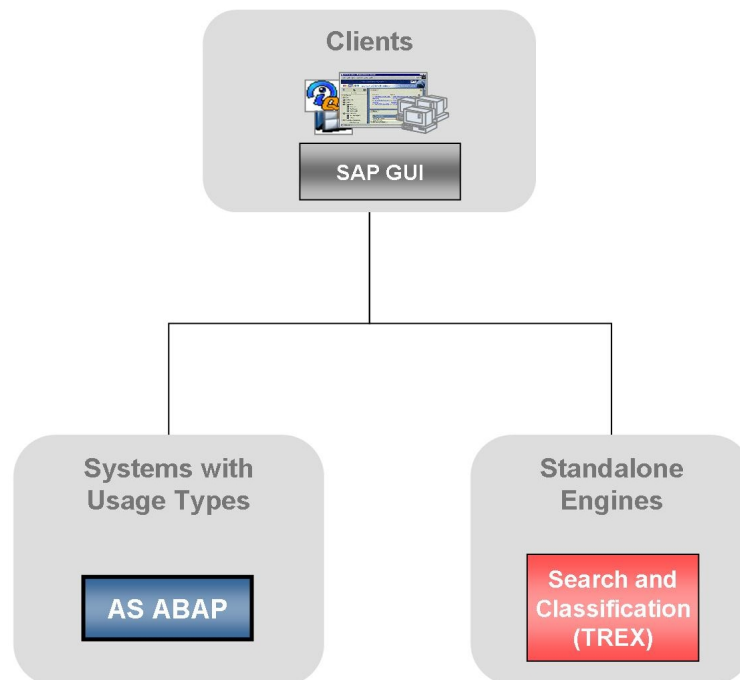



Figure 16: System Landscape Enterprise Search

6.4.2.3 Implementation Sequence

Procedure

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your system landscape (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. 	

Step	Action [Corresponding Documentation]	Remarks
	<ul style="list-style-type: none"> You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of a system with usage type AS ABAP [Installation Guide—SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide—SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
3	Installation of Search and Classification (TREX) [Installation Guide—SAP NetWeaver TREX]  NOTE After the installation of Search and Classification (TREX), you have to configure the systems that communicate with TREX (for more information, see the documentation <i>Installation Guide—SAP NetWeaver TREX</i>): ABAP applications access TREX functions using the TREX ABAP client and the RFC protocol. In this case, you have to perform the post-installation steps to set up an RFC connection. Note that some applications use both the ABAP and the Java client.	It is mandatory to use TREX 7.1 for Embedded Search. For more information, see SAP Note 1249465 .
4	Install client SAP GUI. [Installation Guide—SAP Front End]	

6.5 Enabling User Collaboration

6.5.1 Overview

The adoption of this IT scenario makes collaboration and knowledge sharing an integral, natural part of everyday work. Thus it helps increase users' productivity and business innovation by supporting efficient teamwork. User collaboration is designed to enable individuals, teams, and project groups to collaborate more efficiently within the context of their business processes. Knowledge workers want to locate information and communicate with each other in the context of their business processes.

With the aid of collaboration rooms they can share relevant information, communicate online in real-time, plan with the help of a team calendar, and provide a single point of access to business-relevant information and applications. Virtual rooms enable teams or project groups to collaborate efficiently across time zones and between geographical locations. Vertical collaboration solutions, such as SAP PLM cFolders focusing on the areas of engineering, research, and development, can be integrated with the horizontal collaboration capabilities of SAP NetWeaver.

By leveraging collaboration between people, companies can unveil tacit knowledge and turn knowledge into business action. Since SAP NetWeaver's collaboration capabilities are tightly integrated with the knowledge management capabilities, user collaboration provides users with standard document handling features (check in, check out, locking, versioning and so on) in a collaboration room.

User collaboration is also designed to enable people to quickly resolve issues that emerge in their daily work. Users can search for experts who are able to help and use real-time communication means such as instant messages or application/desktop sharing, while at the same time reducing travel costs. The online presence of information enables people to choose an appropriate communication mode. In summary, in today's rapidly changing business world, no company can afford poor collaboration among its people. Poor collaboration can lead to a reduction in the quality of decisions, and to unsatisfactory business results.

This scenario includes the following variants:

- *Collaboration in Virtual Rooms*

Organizations can enable users to create their own virtual working environments, where the members of teams or project groups can collaborate efficiently across time zones and between geographical locations.

- *Ad Hoc Collaboration*

Employees can quickly solve problems that emerge during a business process by using online communication and collaboration services.

**NOTE**

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.5.2 System Landscape

The following figure shows the system landscape of this IT scenario:

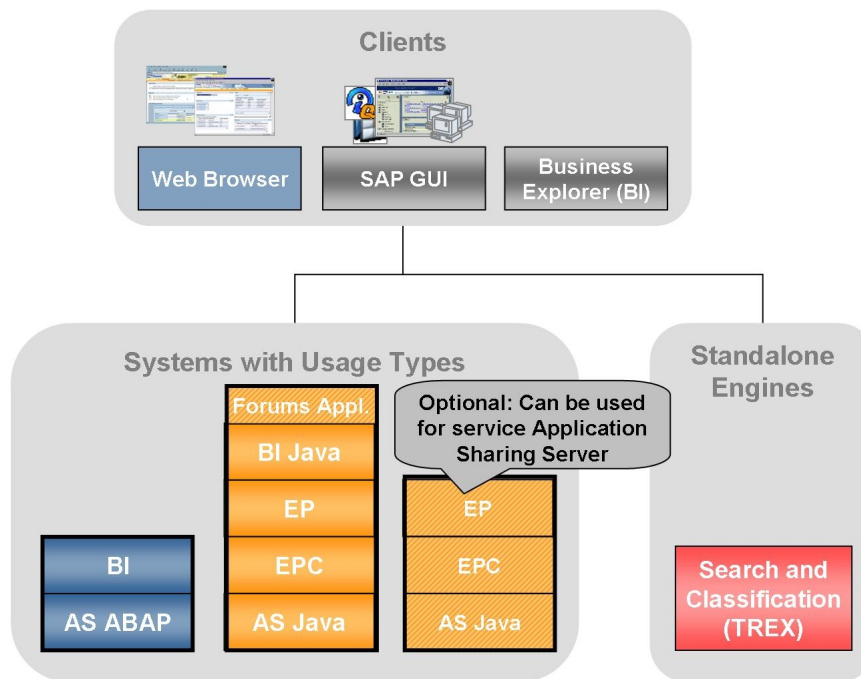


Figure 17: System Landscape Enabling User Collaboration

When you plan your system landscape, consider the following aspects:

- The Real-Time Collaboration capabilities (RTC) of SAP NetWeaver are recommended for scenarios that include the occasional use of basic chat, instant messaging, and application-sharing services by a specific group of company-internal portal users. More specifically, one-to-one application sharing sessions and chat sessions with up to four users.
 - For large portal installations, consider the performance and sizing impacts of RTC as described in SAP Note [948298](#).
 - For the intensive use of RTC services, we recommend the integration of third-party applications.
 - The **RTC** service Application Sharing Server is part of usage type EP. For production use of **application sharing**, we recommend that you install an additional system with usage type EP to run the service Application Sharing Server standalone on a dedicated host in a separate installation procedure. This reduces networking and J2EE demands generated by the server on the portal machine.
- BI is required for Information Broadcasting. For more information about Information Broadcasting, see the section *Enterprise Reporting, Query, and Analysis*.
- For BI Java you have the following distribution possibilities:
 - You can run BI Java on your central portal system or in a separate system
BI Java requires EPC and EP in the same system. You can either install BI Java on your central portal system or install a separate BI Java system:

- ◆ If you only want to run a single portal in your landscape, run BI Java on your central portal system.
- ◆ If you want to use a federated portal network including a central portal in your system landscape, do not run BI Java in your central portal system. Instead, use a dedicated BI Java or a combined BI/BI Java system (see below).

For more information about the federated portal network, see *Enterprise Reporting Query and Analysis* [page 98], section *System Landscape*

**NOTE**

When you install BI Java, the usage types AS Java, EPC, and EP are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, EPC, and EP, if you do not want to use EPC or EP for other scenarios as well.

- You can run BI and BI Java together in one system or in separate systems

You can also install BI and BI Java together in one system, as well as in separate systems. We recommend that you run BI and BI Java in separate systems due to the following advantages of this setup:

- ◆ Higher scalability, as each server can scale itself with dedicated ABAP or Java dialog instances.
- ◆ Higher flexibility

As of SAP Enhancement Package 1 for SAP NetWeaver 7.0, the separate installation of BI and BI Java is the default installation option. The installation of BI and BI Java in a dual stack system is still possible, but requires some manual actions. For more information, see SAP Note [1181025](#).

**NOTE**

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

**NOTE**


For SAP NetWeaver 7.0 with enhancement package 1 or lower, you must keep BI and BI Java in sync concerning applied Support Package Stacks, regardless of whether you run BI and BI Java in the same or in separate systems. As of enhancement package 2 for SAP NetWeaver 7.0, dependencies between the Support Package levels of BI and BI Java no longer exist.

- AS Java includes BI UDI.

6.5.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your system landscape (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Install a system with usage type AS ABAP (required for usage type BI) [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p> <p> NOTE For usage type BI, there is no installation option in SAPinst. Instead, install AS ABAP with SAPinst and then install SAP NetWeaver 7.0 BI Content Add-On 4 or higher (see below).</p>	<ul style="list-style-type: none"> ■ SAP enhancement package 2 for SAP NetWeaver 7.0 contains enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the Installation Guide – SAP NetWeaver.
3	Configure the database of your AS ABAP system for BI according to SAP Note 567745 .	
4	Install SAP NW 7.0 BI CONT Addon 7.04 or higher in the AS ABAP system according to SAP Note 1254946 .	
5	<p>Install a system with usage type BI Java. [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement package 2 for SAP NetWeaver 7.0 contains enhancements for this scenario. If you want to use these enhancements, use the SAP

6.5 Enabling User Collaboration

Step	Action [Corresponding Documentation]	Remarks
		<p>NetWeaver 7.0 installation which includes enhancement package 2.</p> <ul style="list-style-type: none"> ■ When you install BI Java, AS Java, EPC and EP are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java and EP. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the Installation Guide – SAP NetWeaver.
6	<p>Optional: Install the forums application add-on on top of the system with usage type BI Java.</p> <p>[SAP Note 1049553]</p>	
7	<p>Optional: Install a system with usage type EPC and EP (includes the installation of AS Java) to run the service Application Sharing Server standalone</p> <p>[<i>Installation Guide – Application Sharing Server on <OS>: <DB> - For SAP NetWeaver 7.0 including Enhancement Package 1 SR 1</i>]</p>	<p>The service Application Sharing Server is part of usage type EP.</p> <p>For installations of systems with a release lower than SAP NetWeaver 7.0 including enhancement package 1 SR1, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i></p>
8	<p>Install standalone engines: Search and Classification (TREX)</p> <p>[<i>Installation Guide – SAP NetWeaver TREX</i>]</p> <p>After the installation of Search and Classification (TREX), you have to configure the systems that communicate with TREX (for more information, see the documentation <i>Installation Guide – SAP NetWeaver TREX</i>):</p> <ul style="list-style-type: none"> ■ ABAP applications access TREX functions using the TREX ABAP client and the RFC protocol. In this case, you have to perform the post-installation steps to set up an RFC connection. ■ Java applications access TREX functions using the TREX Java client 	<p>We recommend that you use TREX 7.1, if your operating system preference allows it.</p>

Step	Action [Corresponding Documentation]	Remarks
	<p>and the HTTP/HTTPS protocol. In this case, you have to perform the post-installation steps to set up an HTTP connection.</p> <p>Note that some applications use both the ABAP and the Java client.</p>	
9	<p>Install clients:</p> <ul style="list-style-type: none"> ■ SAP GUI [Installation Guide – SAP Front End] ■ Business Explorer (BI) Make sure that you select the option <i>BI Add-On including Business Explorer</i> (SAP NetWeaver 2004s) during the installation of SAP GUI. Deselect the option <i>Pre-calculation Server</i>. [Installation Guide – SAP Front End] 	

6.6 Business Planning and Analytical Services

6.6.1 Overview

This IT scenario covers processes that support decision-making by collecting data from InfoProviders, queries or other BI objects, transforming data in various ways, and writing the generated information back to BI objects.

The main tools and methods of business planning and analytical services are the Analysis Process Designer and BI integrated planning.

The Analysis Process Designer enables companies to define complete processes that can disclose relationships within their data. An analysis process collects data from InfoProviders, queries, or other BI objects and transforms this data in various ways. The process writes the new information back to certain BI objects (such as InfoObjects or ODS objects) or to a downstream system such as an SAP CRM system. The transformations range from simple filter, aggregation, or projection operations, to complex data mining methods.

This scenario includes the following variants:

- Business planning
SAP NetWeaver provides state-of-the-art planning methods and tools that allow organizations to predict and react flexibly and quickly to changing market conditions. They can build applications to perform strategic or operational planning in an Excel-based or collaborative portal environment, including applications that support collaboration rooms, document integration, broadcasting, and ad hoc workflow.
- Analysis process design

Organizations can create analysis processes, including data mining methods. They can create new levels of information, such as relationships and interdependencies within information delivered by the source systems.

**NOTE**

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ↵.

6.6.2 System Landscape

The following figure shows the system landscape of this IT scenario:

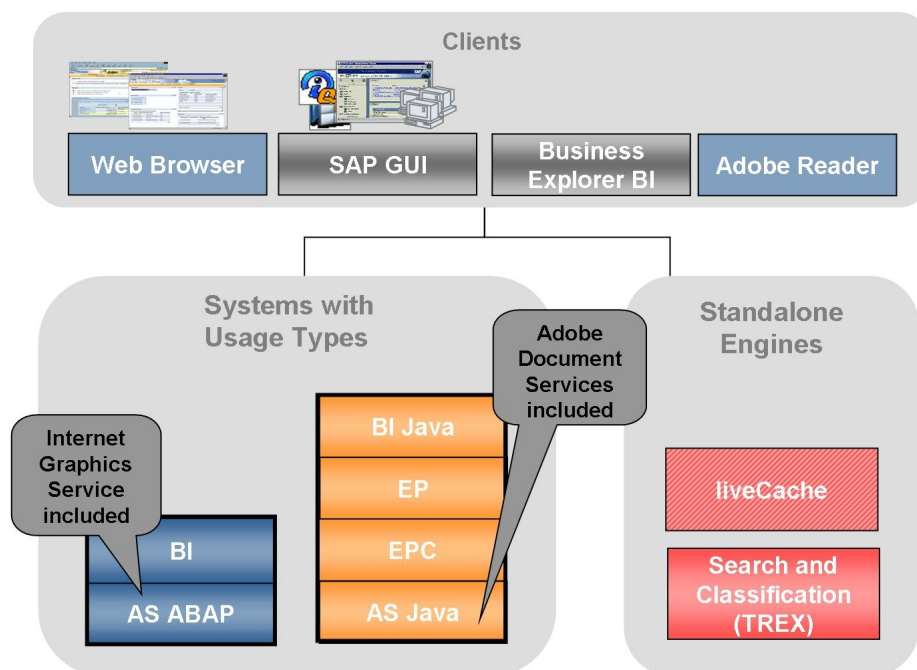


Figure 18: Business Planning and Analytical Services

When you plan your system landscape, consider the following aspects:

- For BI Java you have the following distribution possibilities:
 - You can run BI Java on your central portal system or in a separate system

BI Java requires EPC and EP in the same system. You can either install BI Java on your central portal system or install a separate BI Java system:

 - ◆ If you only want to run a single portal in your landscape, run BI Java on your central portal system.
 - ◆ If you want to use a federated portal network including a central portal in your system landscape, do not run BI Java in your central portal system. Instead, use a dedicated BI Java or a combined BI/BI Java system (see below).

For more information about the federated portal network, see *Enterprise Reporting Query and Analysis* [page 98], section *System Landscape*

**NOTE**

When you install BI Java, the usage types AS Java, EPC, and EP are installed automatically. After configuring BI Java you do not need to perform further steps in AS Java, EPC, and EP, if you do not want to use EPC or EP for other scenarios as well.

- You can run BI and BI Java together in one system or in separate systems
You can also install BI and BI Java together in one system, as well as in separate systems. We recommend that you run BI and BI Java in separate systems due to the following advantages of this setup:
 - ◆ Higher scalability, as each server can scale itself with dedicated ABAP or Java dialog instances.
 - ◆ Higher flexibility

As of SAP Enhancement Package 1 for SAP NetWeaver 7.0, the separate installation of BI and BI Java is the default installation option. The installation of BI and BI Java in a dual stack system is still possible, but requires some manual actions. For more information, see SAP Note [1181025](#).

**NOTE**

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

**NOTE**

For SAP NetWeaver 7.0 with enhancement package 1 or lower, you must keep BI and BI Java in sync concerning applied Support Package Stacks, regardless of whether you run BI and BI Java in the same or in separate systems. As of enhancement package 2 for SAP NetWeaver 7.0, dependencies between the Support Package levels of BI and BI Java no longer exist.

- You need BI Java including EP, if you want to use the new SAP NetWeaver 7.0 integrated planning functionality. Without BI Java and EP, you can only use the SAP NetWeaver BI 3.5 (previously SAP BW 3.5) Business Planning and Simulation functions in combination with the 3.x runtime.
- 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 must install TREX. However,

6.6 Business Planning and Analytical Services

as a base function, you can search for objects using their text and technical name without installing TREX. For more information, see SAP Note [979444](#).



- liveCache is optional. You can use it as a lock server to improve performance if you have many complex data records described by selection tables that have to be locked.
- For the *Analysis Process Design* IT scenario variant, you can opt to install an additional Business Explorer (BI) including Pre-calculation Server for precalculated workbooks on a separate host (Microsoft Windows only) to access it using the BI system (not shown in the figure above).
- AS Java comprises BI UDI.
- Additional Considerations for Adobe Document Services (ADS)
SAP Interactive Forms by Adobe require usage type AS Java, which includes the Adobe document services software. On the front end, you require Adobe Reader or Adobe Acrobat.
For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at ► <http://scn.sap.com/community/interactive-forms-by-adobe> ↵.
- For more information about the system landscape design for your scenario, see ► <http://scn.sap.com/community/data-warehousing> → *Get started with Data Warehousing* ↵.

6.6.3 Implementation Sequence


Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Optional: Prepare an SAP system as a data source:</p> <ol style="list-style-type: none"> 1. The SAP system can be either an OLTP – SAP R/3 system (3.1I – 4.6C) or SAP R/3 Enterprise system (Extension Set 1.10 or higher) or any other SAP system with PI_BASIS Plug-In. 2. If you want to use SAP R/3 or SAP R/3 Enterprise as a data source, make sure that SAP R/3 Plug-In 2004.1 is installed on the OLTP system: See SAP Note 704564 (<i>R/3 plug-</i> 	<p>You only have to prepare this SAP system if you want to use an OLTP system (such as SAP R/3 or SAP R/3 Enterprise backend) as a data source.</p>

Step	Action [Corresponding Documentation]	Remarks
	<p><i>in:PI 2004.1 installation/delta upgrade</i>) and SAP Service Marketplace at http://service.sap.com/r3-plug-in</p> <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) are no longer delivered with their own add-on (SAP R/3 Plug-In). As of SAP ECC 6.00, they are directly included in SAP ECC. Therefore, this step is not required for SAP ECC 6.00 or higher. ■ With BI Java, you can access non-SAP data sources by using the corresponding JDBC driver. 	
3	<p>Install a system with usage type AS ABAP (required for usage type BI) [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p> <p> NOTE</p> <p>For usage type BI, there is no installation option in SAPinst. Instead, install AS ABAP with SAPinst and then install SAP NetWeaver 7.0 BI Content Add-On 4 or higher (see below).</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For usage type BI Java, configuration tasks exist that can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager. For more information, see the <i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>.
4	Configure the database of your AS ABAP system for BI according to SAP Note 567745 .	
5	Install SAP NW 7.0 BI CONT Addon 7.04 or higher in the AS ABAP system according to SAP Note 1254946 .	
6	<p>Install a system with usage type BI Java. [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which

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Step	Action [Corresponding Documentation]	Remarks
		<p>includes enhancement package 1 or enhancement package 2.</p> <ul style="list-style-type: none"> ■ When BI Java is installed, AS Java, EPC, and EP are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, EPC, and EP. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager. For more information, see the <i>Installation Guide – SAP NetWeaver</i>.
7	<p>Install standalone engines:</p> <ul style="list-style-type: none"> ■ If required, SAP liveCache [<i>Installation Guide – SAP NetWeaver liveCache Technology</i>] ■ Search and Classification (TREX) [<i>Installation Guide – SAP NetWeaver TREX</i>] <p> NOTE</p> <p>After installing Search and Classification (TREX), you have to configure the systems that communicate with TREX (for more information, see the documentation <i>Installation Guide – SAP NetWeaver TREX</i>):</p> <ul style="list-style-type: none"> ● ABAP applications access TREX functions using the TREX ABAP client and the RFC protocol. In this case, you have to perform the post-installation steps to set up an RFC connection. ● Java applications access TREX functions using the TREX Java client and the HTTP/HTTPS protocol. In this case, you have to perform the post-installation steps to set up an HTTP connection. <p>Note that some applications use both the ABAP and the Java client.</p> <p>[<i>Installation Guide – SAP NetWeaver TREX</i>]</p>	<ul style="list-style-type: none"> ■ 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 search functions (for example, the search query described above), you must install TREX. However, as a base function, you can search for objects using their text and technical name also without installing TREX. For more information, see SAP Note 979444. ■ For more information on how to configure SAP liveCache as a lock server, see SAP Note 816730.

Step	Action [Corresponding Documentation]	Remarks
8	Install clients: <ul style="list-style-type: none"> ■ SAP GUI [<i>Installation Guide – SAP Front End</i>] ■ Business Explorer (BI) Make sure that you select the option <i>BI Add-On including Business Explorer</i> (SAP NetWeaver 2004s) during the installation of SAP GUI. [<i>Installation Guide – SAP Front End</i>] ■ For the Analysis Process Design IT scenario variant, you can opt to install an additional Business Explorer (BI) with Pre-calculation Server on a separate host (Microsoft Windows only). [See the corresponding installation guide on the <i>SAP NetWeaver 7.0 Presentation DVD</i>] 	<ul style="list-style-type: none"> ■ Be aware that 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 Business Explorer (BI) with Pre-calculation Server also requires Microsoft Excel 2000 or higher on the same host.
9	Installation of third-party software: For SAP Interactive Forms by Adobe, install the required version of Adobe Reader or Adobe Acrobat. [SAP Note 834573]	

6.7 Enterprise Reporting, Query, and Analysis

6.7.1 Overview

Enterprise Reporting, Query, and Analysis provides all necessary processes and services to meet the information needs of business users. This comprises reporting, ad hoc query, interactive analysis, dashboards, analytic applications and list views, both from a design-time and runtime perspective. The design-time processes are increasingly integrated into an overall strategy for SAP NetWeaver design-time.

The runtime environment utilizes the Java platform and open standard technologies to provide an infrastructure that is both flexible and extensible. It can be closely embedded into the operational context.

All information that a user acquires from reporting, query or analysis is actionable. This means that users can print the information, attach it to a workflow, distribute it through broadcasting, give feedback on it, and so on.

Scenario variants cover the different possibilities for design, deployment, and interaction with BI data by using the different tools and capabilities in the Business Explorer (BI) suite:

- *Enterprise Reporting, Query, and Analysis*
With SAP NetWeaver, power users can design, deploy, and execute queries, formatted reports, and Web applications.
- *Excel Integration*

6.7 Enterprise Reporting, Query, and Analysis

The Business Explorer (BI) analyzer tool of SAP NetWeaver can be used to design and interact with Excel-based business intelligence applications and workbooks.

- *Ad Hoc Query*

Expert business users can use the Web analyzer tool in SAP NetWeaver to analyze ad hoc queries and create views of information from various data sources.

- *Information Broadcasting*

Organizations can design, deploy, and execute information broadcasting, seamlessly integrating business intelligence, knowledge management, and collaboration into a single, blended experience for the portal end user.

**NOTE**

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ↵.

6.7.2 System Landscape

The following figure shows the system landscape of this IT scenario:

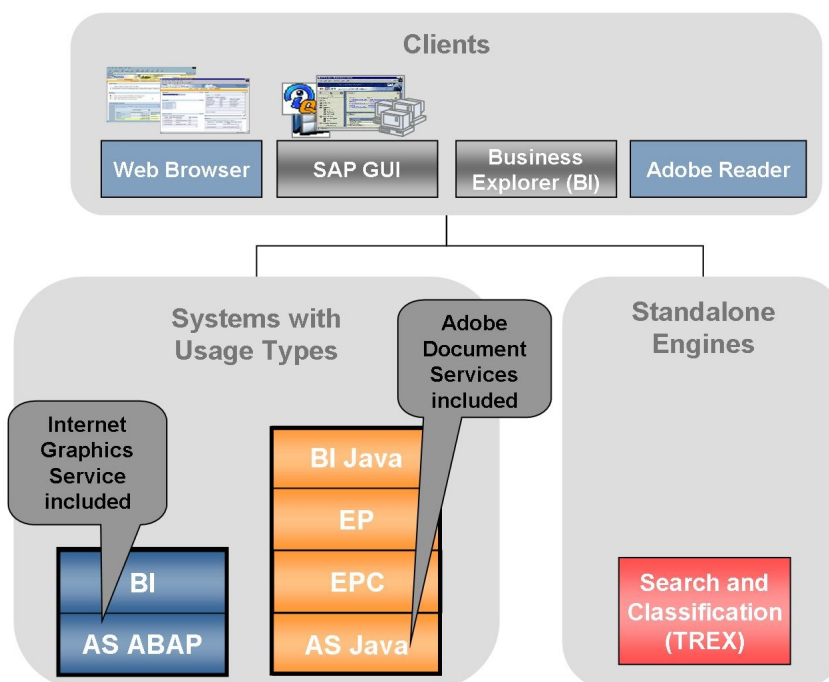


Figure 19: Enterprise Reporting, Query, and Analysis

When you plan your system landscape, consider the following aspects:

- For BI Java you have the following distribution possibilities:
 - You can run BI Java on your central portal system or in a separate system

BIJava requires EPC and EP in the same system. You could either install BIJava on your central portal system or install a separate BIJava system:

- ◆ If you only want to run a single portal in your landscape, run BIJava on your central portal system.
- ◆ If you want to use a federated portal network including a central portal in your system landscape, do not run BIJava in your central portal system. Instead, use a dedicated BIJava or a combined BI/BIJava system (see below).

For more information about the federated portal network, see below.



NOTE

While installing BIJava, the usage types AS Java, EPC, and EP get installed automatically. After configuring BIJava you do not need to perform further steps in AS Java, EPC, and EP, if you do not want to use EPC or EP for other scenarios as well.

- You can run BI and BIJava together in one system or in separate systems

You can also install BI and BIJava together in one system, as well as in separate systems. We recommend that you run BI and BIJava in separate systems due to the following advantages of this setup:

- ◆ Higher scalability, as each server can scale itself with dedicated ABAP or Java dialog instances.
- ◆ Higher flexibility

As of SAP Enhancement Package 1 for SAP NetWeaver 7.0, the separate installation of BI and BIJava is the default installation option. The installation of BI and BIJava in a dual stack system is still possible, but requires some manual actions. For more information, see SAP Note [1181025](#).



NOTE

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).



NOTE

For SAP NetWeaver 7.0 with enhancement package 1 or lower, you must keep BI and BIJava in sync concerning applied Support Package Stacks, regardless of whether you run BI and BIJava in the same or in separate systems. As of enhancement package 2 for SAP NetWeaver 7.0, dependencies between the Support Package levels of BI and BIJava no longer exist.

- You need BIJava including EP if you want to use the new SAP NetWeaver 7.0 functions. Without BIJava and EP, you can only use the SAP NetWeaver BI 3.x (previously SAP BW 3.x) Business Explorer

tools and runtime. For more information, see the SAP community Network at ► <http://scn.sap.com/community/data-warehousing> → *Get started with Data Warehousing* ◀

- 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 must install TREX. However, as a base function, you can search for objects using their text and technical name without installing TREX. For more information, see SAP Note [979444](#).
- For the IT scenario variants Excel Integration and Information Broadcasting, you can opt to install an additional Business Explorer (BI) including Pre-calculation Server for precalculated workbooks on a separate host (Microsoft Windows only) to access it using the BI system (not shown in the figure above).
- AS Java includes BI UDI.
- Additional Considerations for Adobe Document Services (ADS)
SAP Interactive Forms by Adobe require usage type AS Java, which includes the Adobe document services software. On the front end, you require Adobe Reader or Adobe Acrobat.
For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Community Network at ► <http://scn.sap.com/community/interactive-forms-by-adobe> ◀.
- For more information about the system landscape design for your scenario, see ► <http://scn.sap.com/community/data-warehousing> → *Get started with Data Warehousing* ◀.

The following figure shows a system landscape where a federated portal network is used:

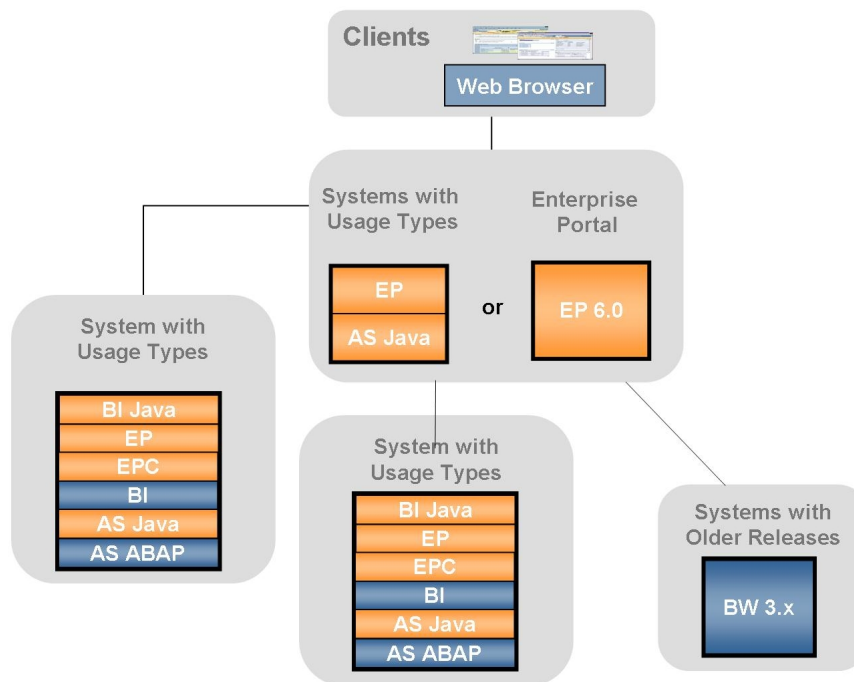


Figure 20: System Landscape With Federated Portal Network

- A federated portal network is a network of independent portals that share content. Each portal can use content exposed by another producer portal, but at the same time expose its own content for use by other consumer portals.


For more information about federated portal network, see also *Running an Enterprise Portal* [page 75].

- You can either use an SAP NetWeaver '04 Portal or an SAP NetWeaver 7.0 system with usage types EPC and EP as a central portal. Be aware that different methods are used to connect BI capabilities of SAP NetWeaver to the central portal:
 - To connect an SAP NetWeaver 7.0 system with usage type BI Java to an SAP NetWeaver 7.0 system with usage type EPC and EP, you use the federated portal feature *remote role assignment*.
 - To connect the following systems, you use application integrator iViews:
 - ◆ SAP NetWeaver BI 3.x (previously SAP BW 3.x) to SAP NetWeaver '04 Portal
 - ◆ SAP NetWeaver BI 3.x (previously SAP BW 3.x) to SAP NetWeaver 7.0 with usage types EPC and EP
 - ◆ SAP NetWeaver 7.0 usage type BI Java to SAP NetWeaver '04 Portal
- For clarity, Search and Classification (TREX) is not shown in the figure above. You need to connect a TREX to each SAP NetWeaver BI system.
- For more information about the system landscape design for your scenario, see ► <http://scn.sap.com/community/data-warehousing> → *Get started with Data Warehousing* ↗.


6.7.3 Implementation Sequence

Process


To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. <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 6.00, they are included directly in SAP ECC. Therefore, this step is not required for SAP ECC 6.00 or higher. ■ With BI Java, you can access non-SAP data sources by using the corresponding JDBC driver. 	
2	<p>Optional: Prepare an SAP system as a data source:</p> <ol style="list-style-type: none"> 1. The SAP system can be either an OLTP – SAP R/3 system (3.1I – 4.6C) or SAP R/3 Enterprise system (Extension Set 1.10 or higher) or any other SAP system with PI_BASIS Plug-In. 2. If you want to use SAP R/3 or SAP R/3 Enterprise as a data source, make sure that SAP R/3 Plug-In 2004.1 is installed on the OLTP: See SAP Note 704564 (<i>R/3 plug-in:PI 2004.1 installation/delta upgrade</i>) and SAP Service Marketplace at http://service.sap.com/r3-plug-in. 	You only have to prepare this SAP system if you want to use an OLTP system (such as SAP R/3 or SAP R/3 Enterprise back-end) as a data source.

6.7 Enterprise Reporting, Query, and Analysis

Step	Action [Corresponding Documentation]	Remarks
3	<p>Install a system with usage type AS ABAP (required for usage type BI) [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p> <p> NOTE For usage type BI, there is no installation option in SAPinst. Instead, install AS ABAP with SAPinst and then install SAP NetWeaver 7.0 BI Content Add-On 4 or higher (see below).</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager. For more information, see the <i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>.
4	Configure the database of your AS ABAP system for BI according to SAP Note 567745 .	
5	Install SAP NW 7.0 BI CONT Addon 7.04 or higher in the AS ABAP system according to SAP Note 1254946 .	
6	<p>Install a system with usage type BI Java. [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ When you install BI Java, AS Java, EPC, and EP are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, EPC, and EP. ■ Make sure that you perform the configuration steps as described in the installation guide. For usage type BI Java, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager. For more information, see the <i>Installation</i>

6.7 Enterprise Reporting, Query, and Analysis

Step	Action [Corresponding Documentation]	Remarks
		<i>Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>.</i>
7	<p>Install standalone engines: Search and Classification (TREX) [<i>Installation Guide – SAP NetWeaver TREX</i>]</p> <p> NOTE</p> <p>After the installation of Search and Classification (TREX), you have to configure the systems that communicate with TREX (for more information, see the documentation <i>Installation Guide – SAP NetWeaver TREX</i>):</p> <ul style="list-style-type: none"> ■ ABAP applications access TREX functions using the TREX ABAP client and the RFC protocol. In this case, you have to perform the post-installation steps to set up an RFC connection. ■ Java applications access TREX functions using the TREX Java client and the HTTP/HTTPS protocol. In this case, you have to perform the post-installation steps to set up an HTTP connection. <p>Note that some applications use both the ABAP and the Java client.</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 must install TREX. However, as a base function, you can search for objects using their text and technical name, without installing TREX. For more information, see SAP Note 979444.</p>
8	<p>Install clients:</p> <ul style="list-style-type: none"> ■ SAP GUI [<i>Installation Guide – SAP Front End</i>] ■ Business Explorer (BI) Make sure that you select the options BI Add-On including Business Explorer (SAP NetWeaver 2004s) during the installation of SAP GUI. [<i>Installation Guide – SAP Front End</i>] ■ For the IT scenario variants Excel Integration and Information Broadcasting, you can opt to install an additional Business Explorer (BI) with Pre-calculation Server on a separate host (Microsoft Windows only). [See the corresponding installation guide on the <i>SAP NetWeaver 7.0 Presentation DVD</i>] 	<ul style="list-style-type: none"> ■ Be aware that 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 Business Explorer (BI) with Pre-calculation Server requires Microsoft Excel 2000 or higher on the same host.
9	Install third-party software:	

Step	Action [Corresponding Documentation]	Remarks
	For SAP Interactive Forms by Adobe, install the required version of Adobe Reader or Adobe Acrobat. [SAP Note 834573]	

6.8 Enterprise Data Warehousing

6.8.1 Overview

Enterprise Data Warehousing (EDW) enables customers to create and operate a data warehouse in an enterprise-wide environment. This methodology encompasses the integration of heterogeneous systems, supports various system topologies and their development, and describes a layering methodology for highly flexible information access. An EDW approach also facilitates both strategic analyses and operational reporting.

The structure of the Enterprise Data Warehousing IT scenario comprises two scenario variants, which cover design time (modeling/implementation) and runtime aspects of a highly flexible, reliable, robust and scalable BI solution:

- *Modeling the Enterprise Data Warehouse*

Organizations can perform data modeling, meta data management, data acquisition from heterogeneous systems, data transformation, and data distribution.

- *Running the Enterprise Data Warehouse*

Organizations can control the data flow in the enterprise data warehouse, and administer and monitor the warehouse. They can use data life cycle and performance capabilities and define user authorizations.



NOTE

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ↵.

6.8.2 System Landscape

The following figure shows the system landscape of this IT scenario:

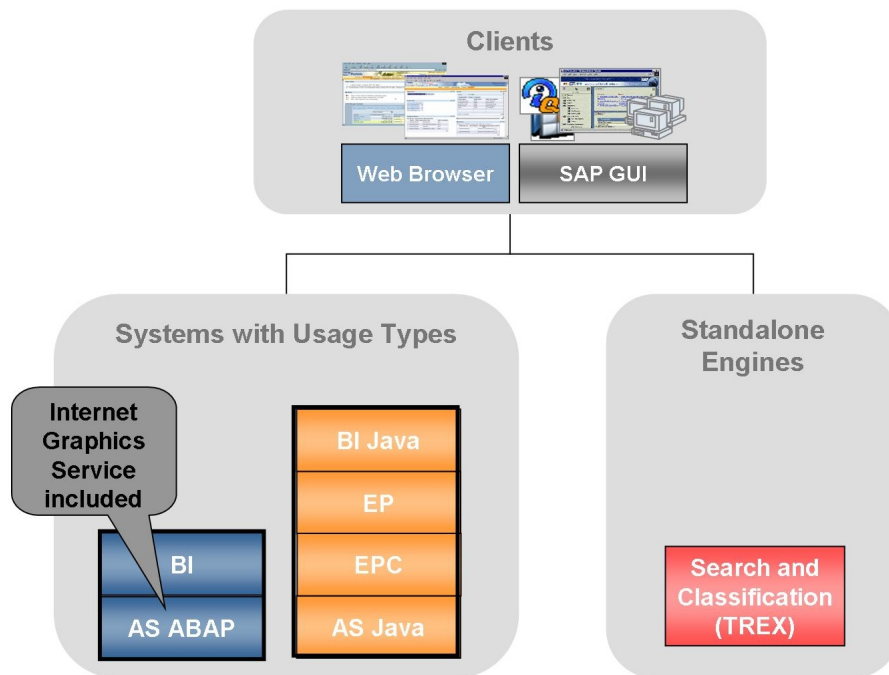


Figure 21: Enterprise Data Warehousing

When you plan your system landscape, consider the following aspects:

- For BI Java you have the following distribution possibilities:
 - You can run BI Java on your central portal system or in a separate system

BI Java requires EPC and EP in the same system. You can either install BI Java on your central portal system or install a separate BI Java system:

 - ◆ If you only want to run a single portal in your landscape, run BI Java on your central portal system.
 - ◆ If you want to use a federated portal network including a central portal in your system landscape, do not run BI Java in your central portal system. Instead use a dedicated BI Java or a combined BI/BI Java system (see below).

For more information about the federated portal network, see *Enterprise Reporting Query and Analysis* [page 98], section *System Landscape*



NOTE

When you install BI Java, the usage types AS Java, EPC, and EP get installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, EPC, and EP, if you do not want to use EPC or EP for other scenarios as well.

- You can run BI and BI Java together in one system or in separate systems
- You can also install BI and BI Java together in one system, as well as in separate systems. We recommend that you run BI and BI Java in separate systems due to the following advantages of this setup:

- ◆ Higher scalability, as each server can scale itself with dedicated ABAP or Java dialog instances.
- ◆ Higher flexibility

As of SAP Enhancement Package 1 for SAP NetWeaver 7.0, the separate installation of BI and BI Java is the default installation option. The installation of BI and BI Java in a dual stack system is still possible, but requires some manual actions. For more information, see SAP Note [1181025](#).

**NOTE**

SAP generally recommends to avoid optional dual-stack systems, but to install single-stack systems instead, where possible. As a consequence, the installation of SAP dual-stack systems is no longer supported as of SAP NetWeaver 7.0 including Enhancement Package 3 and SAP Business Suite 7i2011, which is based on SAP NetWeaver 7.0 including Enhancement Package 3. For more information, see SAP Note [1655335](#).

**NOTE**

For SAP NetWeaver 7.0 with enhancement package 1 or lower, you must keep BI and BI Java in sync concerning applied Support Package Stacks, regardless of whether you run BI and BI Java in the same or in separate systems. As of enhancement package 2 for SAP NetWeaver 7.0, dependencies between the Support Package levels of BI and BI Java no longer exist.

- You only need BI Java and EP if you want to use the BI Administration Cockpit. The BI Administration Cockpit is part of a Business Package that is installed on top of SAP NetWeaver Portal.


If you do not want to use the BI Administration Cockpit, BI Java and EP are not required. However, note that BI Java and EP are usually required for the IT scenarios *Enterprise Reporting, Query & Analysis* [[page 98](#)] and *Business Planning and Analytical Services* [[page 92](#)].

- 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 must install TREX. However, as a base function, you can search for objects using their text and technical name without installing TREX. For more information, see SAP Note [979444](#).
- AS Java includes BI UDI.
- For more information about the system landscape design for your scenario, see ► <http://www.sdn.sap.com/irj/sdn/nw-bi> → *Business Intelligence FAQs* ◀.


6.8.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Optional: Prepare an SAP system as a data source:</p> <ol style="list-style-type: none"> 1. The SAP system can be either an OLTP – SAP R/3 (3.1I – 4.6C) or SAP R/3 Enterprise (Extension Set 1.10 or higher) or any other SAP system with PI_BASIS plug-in. 2. If you want to use SAP R/3 or SAP R/3 Enterprise as a data source, make sure that SAP R/3 Plug-In 2004.1 is installed on the OLTP: See SAP Note 704564 (R/3 plug-in:PI 2004.1 installation/delta upgrade) and SAP Service Marketplace at http://service.sap.com/r3-plug-in. <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 6.00, they are included directly in SAP ECC. Therefore, this step is not required for SAP ECC 6.00 or higher. ■ With BI Java, you can access non-SAP data sources by using the corresponding JDBC driver. 	<p>You only have to prepare this SAP system if you want to use an OLTP system (such as SAP R/3 or SAP R/3 Enterprise backend) as a data source. Although SAP R/3 3.1I to 4.6C or SAP R/3 Enterprise Extension Set 1.10 or higher can be used for the OLTP, we recommend that you use SAP R/3 Enterprise 4.70 Extension Set 2.00.</p>

Step	Action [Corresponding Documentation]	Remarks
3	Install a system with usage type AS ABAP (required for usage type BI) <i>[Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>]</i>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager. For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>.
4	Configure the database of your AS ABAP system for BI as described in SAP Note 567745 .	
5	Install SAP NW 7.0 BICONT Add-On 7.04 or higher in the AS ABAP system according to SAP Note 1254946 .	
6	Install a system with usage type BI Java (includes the installation of AS Java, EPC, and EP). <i>[Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>]</i>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ When you install BI Java, AS Java, EPC, and EP are installed automatically. After configuring BI Java, you do not need to perform further steps in AS Java, EPC, and EP. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first

Step	Action [Corresponding Documentation]	Remarks
		time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager. For more information, see the <i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating System></i> : <Database>.
7	<p>Install standalone engines:</p> <ul style="list-style-type: none"> ■ Search and Classification (TREX) [<i>Installation Guide – SAP NetWeaver TREX</i>] <p> NOTE</p> <p>After the installation of Search and Classification (TREX), you have to configure the systems that communicate with TREX (for more information, see the documentation <i>Installation Guide – SAP NetWeaver TREX</i>):</p> <ul style="list-style-type: none"> ● ABAP applications access TREX functions using the TREX ABAP client and the RFC protocol. In this case, you have to perform the post-installation steps to set up an RFC connection. ● Java applications access TREX functions using the TREX Java client and the HTTP/HTTPS protocol. In this case, you have to perform the post-installation steps to set up an HTTP connection. <p>Note that some applications use both the ABAP and the Java client.</p> <ul style="list-style-type: none"> ■ SAP NetWeaver BI Accelerator is based on TREX technology. You need an installation based on 64-bit architecture for SAP NetWeaver BI Accelerator. The hardware partners provide this variant preconfigured in the form of the SAP NetWeaver BI Accelerator box. Note that a 	<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 must install TREX. However, as a base function, you can search for objects using their text and technical name, without installing TREX. For more information, see SAP Note 979444.</p>

Step	Action [Corresponding Documentation]	Remarks
	TREX installation configured for searching in metadata and documents based on 32-bit architecture cannot be used for SAP NetWeaver BI Accelerator. Therefore an SAP NetWeaver BI Accelerator box also cannot be used for searching in metadata and documents. To be able to use the search function and SAP NetWeaver BI Accelerator, you need separate installations.	
8	Install clients: SAP GUI [<i>Installation Guide – SAP Front End</i>]	Be aware that 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.

6.9 Enabling Application-to-Application Processes

6.9.1 Overview

This IT scenario involves message-based and standard-based integration of intra-company processes by seamlessly connecting SAP and non-SAP applications.

Today's IT landscapes are increasingly complex and difficult to integrate. New levels of collaboration and connectivity are needed among all the systems and applications within an enterprise. In addition, the corresponding implementation must support the goal of standardizing on a services-based architecture.

To enable application-to-application processes, SAP NetWeaver provides one platform to centrally manage the design, configuration, and execution of business processes. The shared collaboration knowledge is based on open standards. This ensures openness and interoperability for communication with existing integration solutions and connection to non-SAP applications or third party systems. Furthermore, pre-delivered content is provided to enable out-of-the-box integration of SAP solutions with other SAP or non-SAP applications.

By providing one common infrastructure for the integration of business processes between SAP and non-SAP applications, the complexity of a company's system landscape is reduced, and the company's performance increased. In addition, the overall maintenance costs are reduced as the entire solution life cycle is supported; from configuration, through execution, to change.

This scenario includes the variant *Application-to-application integration*.

With this scenario variant, organizations can carry out message-based and standards-based integration of intracompany processes by seamlessly connecting both SAP and non-SAP applications.

**NOTE**

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.9.2 System Landscape

The following figure shows the system landscape of this IT scenario:

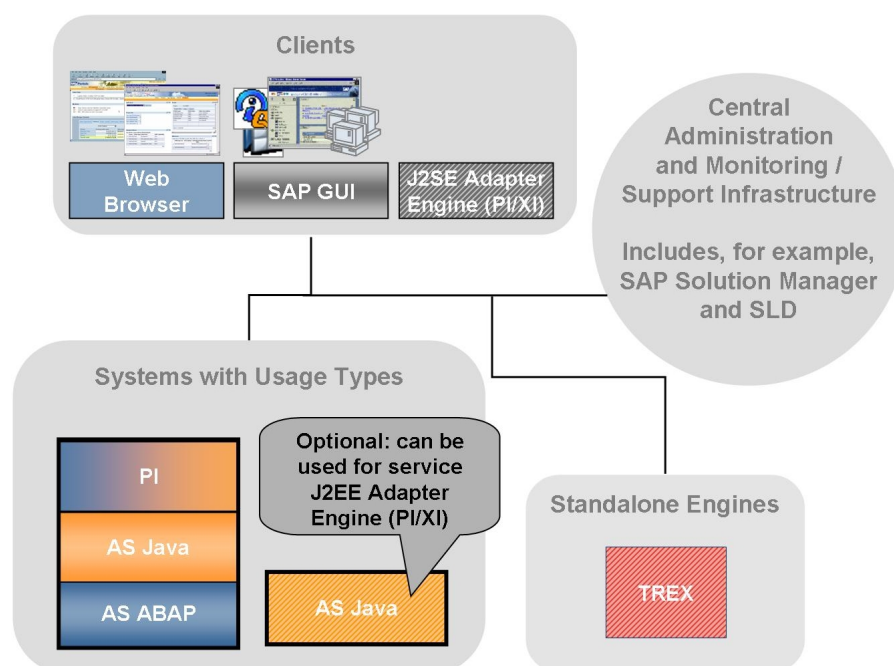


Figure 22: Enabling Application-to-Application Processes

When you plan your system landscape, consider the following aspects:

- We recommend that you have a dedicated PI system.
- Regarding the compatibility of your PI system with application systems in your system landscape which have different releases, see SAP Note [1043047](#).
- You can use the J2EE Adapter Engine (PI/XI) that is part of your PI system as a central J2EE Adapter Engine (PI/XI). You can also install a non-central J2EE Adapter Engine (PI/XI) separately as a system with AS Java and parts of the usage type PI on a separate host (this is optional - for performance reasons).
- J2SE Adapter Engine (PI/XI) can be installed in a non-SAP Java environment. However, it only hosts a subset of the adapter functionality, is only supported for compatibility reasons, and should only be used if this is a precondition in your environment.


6.9 Enabling Application-to-Application Processes

- You can use Search and Classification (TREX) to search for messages that were previously indexed. For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP NetWeaver Exchange Infrastructure* → *Runtime* → *Central Monitoring* → *Message Monitoring* → *Message Search Using Index* ◀
- You can also opt to use the Change Management Service (CMS) of an SAP NetWeaver 7.0 system with usage type DI to transport design objects and repository objects. For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP NetWeaver Exchange Infrastructure* → *Design and Configuration Time* → *Software Logistics for XI Objects* → *Transporting XI Objects* → *Transporting Using the Change Management Service* ◀.

6.9.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of system with usage type PI (includes the installation of AS ABAP and AS Java)</p> <p> NOTE For usage type PI, a Unicode installation is mandatory.</p> <p>[<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, there are configuration tasks that can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP

6.10 Enabling Business-to-Business Processes

Step	Action [Corresponding Documentation]	Remarks
		Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating System>: <Database></i> .
3	If required, install a system with usage types ASJava and parts of PI for the service J2EE Adapter Engine (PI/XI) [<i>Installation Guide – Adapter Engines for SAP NetWeaver</i>]	/
4	If required, install Search and Classification (TREX) [<i>Installation Guide – SAP NetWeaver Search and Classification</i>]	/
5	Installation of clients: <ul style="list-style-type: none"> ■ SAP GUI [<i>Installation Guide – SAP Front End</i>] 	/

6.10 Enabling Business-to-Business Processes

6.10.1 Overview

This IT scenario is about message- and standard-based integration of intercompany processes by seamlessly connecting SAP and non-SAP applications and manipulating the process flow between them. To enable business-to-business processes, SAP NetWeaver provides one platform for centrally managing the design, configuration, and execution of business processes that run within and beyond your enterprise. The functionality provided in SAP NetWeaver for B2B includes:

- The means to maintain and manage Collaboration Profiles and Agreements between Business Partners
- An SAP Partner Connectivity Kit to enable XML document exchange between a smaller business partner and a bigger partner using SAP NetWeaver
- An enhanced message protocol that is conducive to B2B process characteristics
- Security enhancements, as well as the support of industry standard B2B message protocols like RosettNet Implementation Framework
- CIDX

Enabling Business-to-Business Processes in SAP NetWeaver adds business value because they support XML-based business processes between business partners using industry standards. They also enable small business partners to conduct XML business document exchange by providing them with a small scale, easy-to-use client.

This scenario includes the following variants:

- *Business Partner Integration Using Industry Standards*
Organizations can perform message-based and standards-based integration of intercompany processes using various communication channels.
- *Small-Business Partner and Subsidiary Integration*

6.10 Enabling Business-to-Business Processes

Organizations can use SAP Partner Connectivity Kit (PI/XI) to conduct business with subsidiaries and small-business partners that do not have another integration solution.

**NOTE**

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.10.2 System Landscape

The following figure shows the system landscape of this IT scenario:

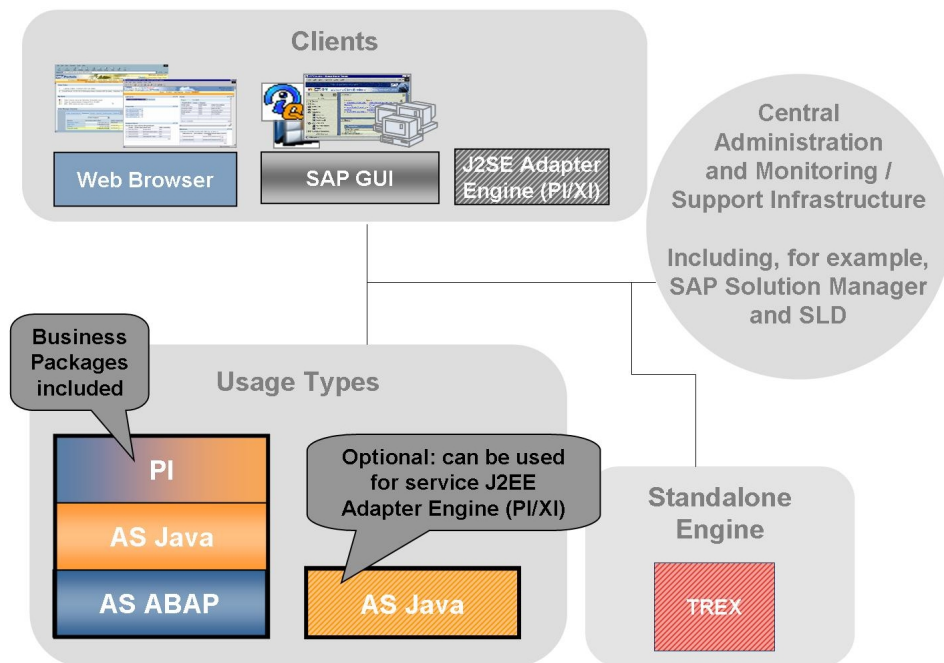


Figure 23: Enabling Business-to-Business Processes

When you plan your system landscape, consider the following aspects:

- We recommend that you have a dedicated PI system.
- Regarding the compatibility of your PI system with application systems in your system landscape which have different releases, see SAP Note [1043047](#).
- Business packages provide customers with an end-to-end solution for collaborative commerce based on industry standards. If you require the IT scenario variant *Business Partner Integration Using Industry Standards*, install an appropriate business package on your PI host. For example, the SAP Business Package for RosettaNet offers various features, including the RosettaNet Implementation Framework (RNIF) Adaptor, which specifies the information exchange between trading-partner servers using XML.

6.10 Enabling Business-to-Business Processes

- You can use the J2EE Adapter Engine (PI/XI) that is part of your PI system as a central J2EE Adapter Engine (PI/XI). You can also install a non-central J2EE Adapter Engine (PI/XI) separately as a system with AS Java and parts of the usage type PI on a separate host (optional - for performance reasons).
- You can use the J2EE Adapter Engine (PI/XI) that is part of your PI system as a central J2EE Adapter Engine (PI/XI). You can also install a non-central J2EE Adapter Engine (PI/XI) separately as a system with AS Java and parts of the usage type PI on a separate host (optional - for performance reasons).
- For IT scenario variant *Business Partner Integration Using Industry Standards*, you can use Search and Classification (TREX) to search for messages that were previously indexed.
For more information, see the *SAP Library* [\[page 14\]](#) at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP NetWeaver Exchange Infrastructure* → *Runtime* → *Central Monitoring* → *Message Monitoring* → *Message Search Using Index* 🔍.
- You can also use the Change Management Service (CMS) of an SAP NetWeaver 7.0 system with usage type DI to transport design objects and repository objects. For more information, see the *SAP Library* [\[page 14\]](#) at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP NetWeaver Exchange Infrastructure* → *Design and Configuration Time* → *Software Logistics for XI Objects* → *Transporting XI Objects* → *Transporting Using the Change Management Service* 🔍.
- For the IT scenario variant *Small-Business Partner and Subsidiary Integration*, smaller business partners or subsidiaries that do not run SAP NetWeaver install PCK (PI/XI) running on AS Java with parts of usage type PI in their system landscape. PCK (PI/XI) enables XML document exchange between your SAP NetWeaver systems and their systems. Since PCK (PI/XI) is installed in their system landscape, it is not shown in the system landscape figure above.

6.10.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Install a system with usage type PI (includes the installation of AS ABAP and AS Java)	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain

Step	Action [Corresponding Documentation]	Remarks
	[<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	<p>enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2.</p> <ul style="list-style-type: none"> ■ For IT scenario variant Business Partner Integration Using Industry Standards, also install required business packages on your PI host. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>.
3	If required, installation of Search and Classification (TREX) [<i>Installation Guide – SAP NetWeaver Search and Classification</i>]	
4	For the IT scenario variant <i>Small-Business Partner and Subsidiary Integration</i> , business partners or subsidiaries install SAP Partner Connectivity Kit running on AS Java with parts of usage type PI in their system landscape [<i>Installation Guide – Partner Connectivity Kit</i>]	
5	If required, install a system with usage types AS Java and parts of PI for the service J2EE Adapter Engine (PI/XI) [<i>Installation Guide – Adapter Engines for SAP NetWeaver</i>]	
6	Install the required clients: SAP GUI [<i>Installation Guide – SAP Front End</i>]	

6.11 Business Process Management

6.11.1 Overview

Implementing this IT scenario enables companies to model, configure, execute, and monitor business scenarios and processes, to adapt them continuously to new strategies, and manage the current economic conditions effectively. With a comprehensive perspective ranging from modeling to

monitoring, business process management (BPM) bridges the gap between business-management requirements and their IT implementation.

Business process management overcomes the communication barrier by delivering methods, procedural models, and pre-defined business process content throughout the company's value-added chain. Internal, enterprise-wide business processes are viewed as a whole, from the design (Business Strategy) and modeling (Business Model) stages to configuration, with automated execution either embedded in an application or unbounded in a central process integration layer.

Scenario variants cover the different ways of leveraging pre-defined content, automating business processes in a controlled fashion and, combining applications, embedded with unbounded processes.

This scenario includes the following variants:

- *Usage and Adaptation of Predefined Content*

Organizations can use predefined content for business process configuration and customize it on the execution layer.

- *Process Automation*

Organizations can create and execute role-specific processes, design business processes, implement software, and perform interapplication integration as well as process execution.

- *Combining Embedded with Unbounded Processes*

Specifies the combination of application-embedded processes with unbounded, cross-component processes.

**NOTE**

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios* at a Glance ◀.

6.11.2 System Landscape

The following figure shows the system landscape of this IT scenario:

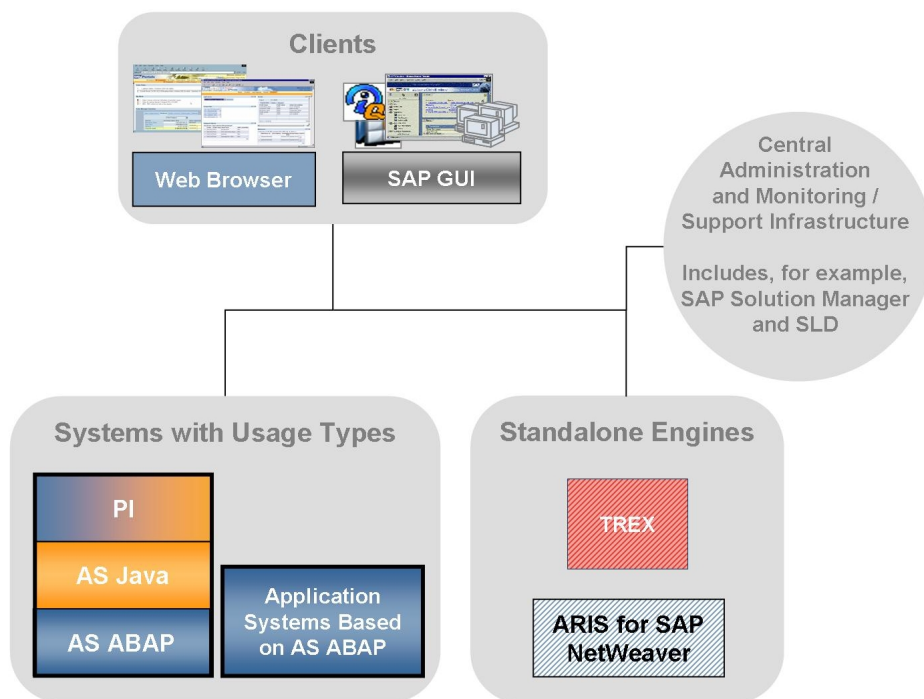


Figure 24: System Landscape Business Process Management

When you plan your system landscape, consider the following aspects:

- SAP Solution Manager is used to identify pre-defined reference content (process models) and to implement SAP applications driving business configuration.
- You can also use ARIS for SAP NetWeaver to model and adapt business processes. ARIS for SAP NetWeaver is a joint brand by SAP and IDS Scheer AG. SAP customers can obtain ARIS for SAP NetWeaver from SAP.
- We recommend that you run the business process engine (the PI system) and the workflow engine (the AS ABAP system) in two different systems.
- Regarding the compatibility of your PI system with application systems in your system landscape which have different releases, see SAP Note [1043047](#).
- For the scenario variant *Combining Embedded with Unbounded Processes*, you can integrate existing ABAP-based application systems.
- For the IT scenario variant *Service Orchestration*, you can use Search and Classification (TREX) to search for messages that were previously indexed.

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP NetWeaver Exchange Infrastructure* → *Runtime* → *Central Monitoring* → *Message Monitoring* → *Message Search Using Index* ◀.

- You can also use the Change Management Service (CMS) of a SAP NetWeaver 7.0 system with usage type DI to transport design objects and repository objects. For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP*

6.11 Business Process Management

NetWeaver Exchange Infrastructure → *Design and Configuration Time* → *Software Logistics for XI Objects*
→ *Transporting XI Objects* → *Transporting Using the Change Management Service* ➔.

- For human interaction, *Business Process Management* is normally run together with the *Business Task Management* [page 122] IT scenario.

6.11.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of a system with usage type PI (includes the installation of AS ABAP and AS Java) [Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
3	If required, installation of Search and Classification (TREX) [Installation Guide – SAP NetWeaver Search and Classification]	
4	Installation of clients: SAP GUI [Installation Guide – SAP Front End]	
5	If required, installation of ARIS for SAP NetWeaver.	You can use ARIS for SAP NetWeaver to model and adapt business processes. ARIS for SAP NetWeaver is a joint brand by SAP and IDS Scheer AG. SAP customers can obtain ARIS for SAP NetWeaver from SAP.

6.12 Business Task Management

6.12.1 Overview

Business tasks are the activities generated either by the company's underlying business processes or by the users themselves as reminders for their own benefit or to delegate work to colleagues. The sooner users complete the tasks, the quicker the processes run. The easier it is for users, departments, and companies to generate and track the tasks, the higher the quality of the output from the processes and the higher the transparency of processes within a company.

Tasks in SAP NetWeaver range from collaboration tasks generated manually in response to exceptions, to work items generated by automated business processes. Tasks in SAP NetWeaver are typically links to activities or transactions rendered by SAP Business Suite applications, or form-based tasks, such as in *Manager Self Services using SAP Interactive Forms by Adobe*, for the occasional user.

The administration of the tasks in SAP NetWeaver is greatly simplified because the tasks generated by the automated processes (workflows) are all generated by the same BPM runtime software. This means that administration, such as locating tasks without owners or archiving, can be carried out on a uniform basis, irrespective of the source of the tasks. This reduces the total cost of ownership and ensures that the business processes run as fast as possible.

This scenario includes the following variants:

- *Central Access to Tasks*

Organizations can decompose tasks into coordinated activities performed by various people. They can support predefined activity patterns and ensure that all tasks, regardless of their origin, are performed using a single, consistent access point and user interface.

- *Support for Offline Processes*

Offline support for business processes includes development and interaction using forms.



NOTE

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.12.2 System Landscape

The following figure shows the system landscape of this IT scenario:

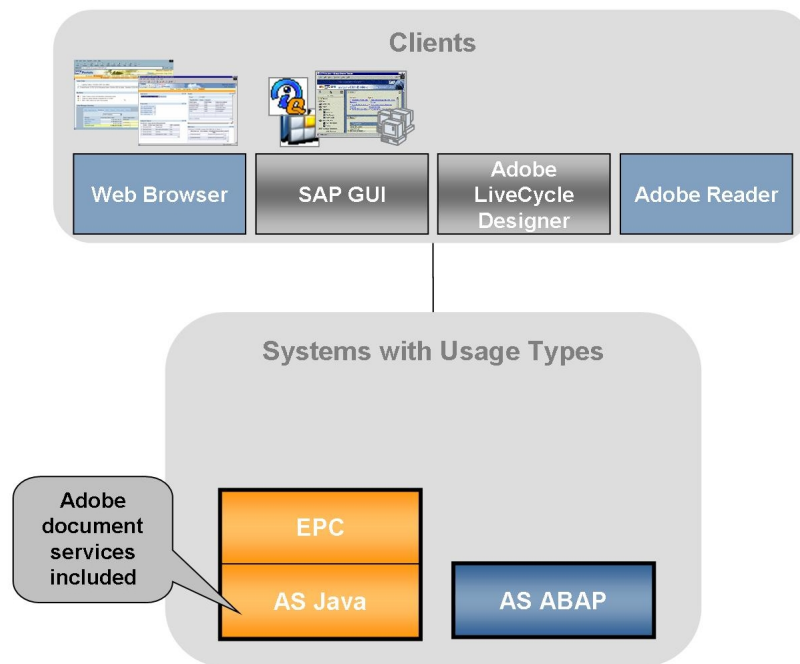


Figure 25: System Landscape for Business Task Management

When you plan your system landscape, consider the following aspects:

- The exact usage types and clients that are required for a *Business Task Management* IT scenario depend on exactly what is required. Here are some of the most common constellations:
 - Collaboration tasks from different collaboration rooms are accessed centrally instead of in the different collaboration rooms. This requires EPC, which includes AS Java.
 - SAP Business Workflow items from different SAP Business Suite applications or Web Applications Servers are accessed centrally. This requires one EPC system for accessing and launching the tasks deployed in the same system landscape as the SAP Business Suite applications, and AS ABAP usage types for any independent workflow.
 - Alerts are accessed from a single task list. This requires the Central Alert server that is part of AS ABAP, together with EPC, which includes AS Java.
 - SAP Interactive Forms by Adobe are integrated in a workflow. This requires usage type EPC for accessing the work items and AS Java, which includes the Adobe document services software needed for SAP Interactive Forms together with AS ABAP for workflow management. On the front end, you require Adobe Reader or Adobe Acrobat. In addition, the installation of the Adobe LiveCycle Designer client is required. This enables the creation of forms that combine high-fidelity presentation with XML data handling.

For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at <http://scn.sap.com/community/interactive-forms-by-adobe/> → *Get started with SAP Interactive Forms By Adobe* ↩.

6.12 Business Task Management

- Guided procedures are accessed from a central task list. This requires one EPC system, which includes AS Java, for the guided procedure modeling environment and universal worklist, and AS ABAP for the BPM runtime engine.
- SAP Interactive Forms by Adobe are integrated in guided procedures. This requires one EPC, which includes AS Java, for the guided procedure modeling environment and universal worklist, and AS ABAP for the BPM runtime engine. The AS Java that is used for SAP Interactive Forms is part of the EPC usage type. On the front end, you require Adobe Reader or Adobe Acrobat. The installation of the client Adobe LiveCycle Designer is optional. This enables the creation of forms that combine high-fidelity presentation with XML data handling.
- For workflows, *Business Task Management* requires the *Business Process Management* [page 118] IT scenario.
- For information about landscape considerations for Adobe document services, see the sections *Creating Interactive Forms and Print Forms* [page 65] and *Adobe Document Services* [page 72].

6.12.3 Implementation Sequence

Procedure

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of a system with usage type EPC (includes the installation of AS Java) [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<p>Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation</i></p>

6.13 Enabling Enterprise Services

Step	Action [Corresponding Documentation]	Remarks
		<i>Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database>.</i>
3	Installation of a system with usage type AS ABAP. [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
4	Installation of clients: <ul style="list-style-type: none"> ■ SAP GUI [<i>Installation Guide – SAP Front End</i>] ■ If you want to develop SAP Interactive Forms by Adobe, install Adobe LiveCycle Designer. [SAP Note 801524] 	For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the document <i>Installing ADS on SAP NetWeaver 7.0 on SAP Developers Network</i> at http://scn.sap.com/community/interactive-forms-by-adobe/ → <i>Get started with SAP Interactive Forms By Adobe</i> ↩.
5	Installation of third-party software: If you want to develop SAP Interactive Forms by Adobe, install the required version of Adobe Reader or Adobe Acrobat. [SAP Note 834573]	

6.13 Enabling Enterprise Services

6.13.1 Overview

Enterprise Services Architecture is a service-oriented architecture (SOA) that merges SAP's enterprise application content with the open composition platform SAP NetWeaver to enable flexible business processes for SAP, partners, and customers. The first key element of enterprise services architecture is the service-enabling of applications within an enterprise. Service-enabling means providing the means to allow Web-services-based access to an application. Service-enabling consists of two components: From a technology perspective, the SAP system has to support communication based on the Web services standards stack, while from an application perspective, the SAP system has to provide meaningful application services.

Enterprise service enablement using SAP NetWeaver is mainly achieved by having one infrastructure for uniform service definition, implementation, and usage based on Web services standards. This includes all types of enterprise services for UI, A2A, and B2B requirements and covers all relevant interaction models, such as synchronous, asynchronous, stateful, and stateless models.

6.13 Enabling Enterprise Services

By implementing enterprise-service-enabling applications, enterprises become more agile and can thus react quickly, take advantage of opportunities and react efficiently to threats. Today, IT is an integral part of any enterprise. Therefore the IT infrastructure as a whole, and not just individual parts of it, is made more flexible by this approach.

This scenario includes the following variants:

- *Point-to-Point Services-based Integration*
Creates both ABAP and Java Web services and uses the Web services toolset integrated into the SAP NetWeaver development tools.
- *Brokered Services-based Integration*
Uses SAP NetWeaver as a virtual interface to applications that are not Web service enabled.

**NOTE**

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ↵.

6.13.2 System Landscape

The following figure shows the system landscape of this IT scenario:

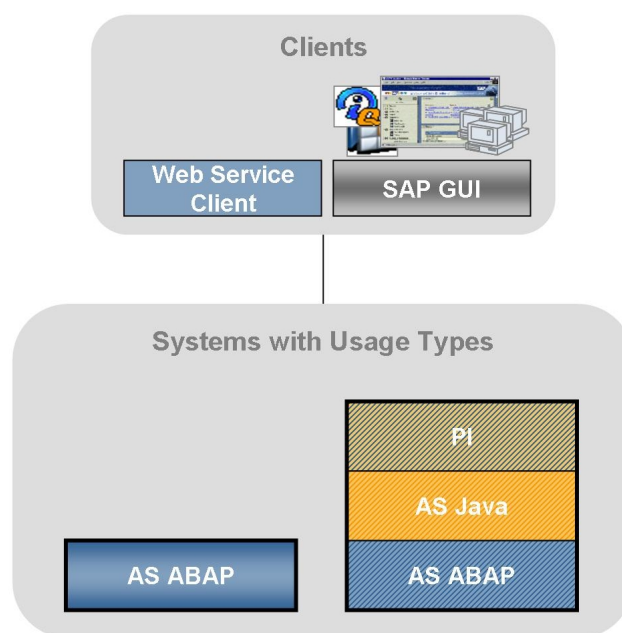


Figure 26: System Landscape for Enabling Enterprise Services

When you plan your system landscape, consider the following aspects:

- The AS ABAP system acts as an application and service provider. For Java Web Services, you also require AS Java. In addition, you require SAP NetWeaver Developer Studio or SAP NetWeaver Developer Workplace on the client side as a development environment.

6.13 Enabling Enterprise Services

- The Web service client can be either an SAP or a non-SAP application. For example, an AS ABAP system or a Web browser could act as application or service consumer.
- The PI system is optional. It is only required for the IT scenario variant *Brokered services-based integration*, where it acts as an integration broker.
- We recommend that you run the application or service provider (the AS ABAP system) and the integration broker (the PI system) in two different systems.
- Regarding the compatibility of your PI system with application systems in your system landscape which have different releases, see SAP Note [1043047](#).
- You can also use the Change Management Service (CMS) of an SAP NetWeaver 7.0 system with usage type DI to transport PI design objects and repository objects. For more information, see the SAP Library [\[page 14\]](#) at ► *SAP NetWeaver by Key Capability* → *Process Integration by Key Capability* → *SAP NetWeaver Exchange Infrastructure* → *Design and Configuration Time* → *Software Logistics for XI Objects* → *Transporting XI Objects* → *Transporting Using the Change Management Service* ◀.

6.13.3 Implementation Sequence

Procedure

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of a system with usage type AS ABAP [<i>Installation Guide – SAP NetWeaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<p>Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more</p>

6.14 Developing, Configuring, and Adapting Applications

Step	Action [Corresponding Documentation]	Remarks
		information, see the <i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating System></i> : <Database>.
3	For the IT scenario variant <i>Brokered services-based integration</i> , installation of a system with usage type PI (includes the installation of AS ABAP and AS Java). [<i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating System></i> : <Database>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating System></i> : <Database>.
4	Installation of clients: <ul style="list-style-type: none"> ■ SAP GUI ■ If required as development environment, SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio [<i>Installation Guide – SAP Front End</i> <i>Installation Guide – SAP NetWeaver Developer Workplace</i> or <i>Installation Guide – SAP NetWeaver Developer Studio</i>]	For the development environment, you can either use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio.

6.14 Developing, Configuring, and Adapting Applications

6.14.1 Overview

This IT scenario offers a variety of ways to develop, configure, extend, and adapt applications. The scenario covers all aspects of application development, starting with elementary questions of software logistics and continuing with development of both back-end logic and web-based user interfaces for subsequent deployment in the SAP NetWeaver Portal.

This scenario includes the following variants:

- *Developing User Interfaces in Java with Web Dynpro*

Organizations can use a model-driven programming model with a runtime and a design time environment to easily and flexibly develop, configure, and adapt Web Dynpro for Java applications. The integration of the Web Dynpro applications into SAP NetWeaver Development Infrastructure is easily done using design time tool support, and the Web Dynpro iView wizard brings the application quickly and seamlessly into SAP NetWeaver Portal.

- *Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications*

6.14 Developing, Configuring, and Adapting Applications

Organizations have the methodology and tools to easily port to SAP NetWeaver any application that conforms to the Java 2 Platform, Enterprise Edition (J2EE) standard.

■ *Creating Composite Applications*

Composite applications are built and deployed on top of data and functions provided as services by platforms and applications, combining these into user-centric processes and views, supported by their own business logic and specific user interfaces. Composite applications are loosely coupled to the back-end systems on which they are based, resulting in a new logical application tier which can be deployed and upgraded independently of the back-end infrastructure.

■ *Creating Business Applications Using ABAP*

SAP NetWeaver provides the methodology and tools to create business applications using ABAP and ABAP Workbench.

■ *Developing User Interfaces in ABAP with Web Dynpro*

SAP NetWeaver provides a model-driven and code-driven environment for developing Web applications using Web Dynpro in the ABAP environment.

■ *Developing Mobile Applications for Occasional Connection*

Organizations can develop disconnected mobile applications using the mobile development kit within SAP NetWeaver Developer Studio (or SAP NetWeaver Developer Workplace). The kit provides a code-driven environment for developing custom applications. Organizations can also develop connected mobile applications using a model-driven and code-driven environment to develop, configure, and adapt mobile applications based on Java 2 Platform, Enterprise Edition (J2EE), and to develop, model, and configure custom applications.

■ *Creating Applications Using SAP NetWeaver Visual Composer*

SAP NetWeaver Visual Composer provides a development environment for rapidly creating and adapting model-based transactional and analytical applications. It has been designed to enable business process experts to create enterprise applications using standardized components that meet SAP standards and quality criteria. Visual Composer enables business process experts to apply their inherent understanding of their organizations' requirements to create applications to their specific business needs. These applications can then be subsequently customized and continuously changed in Visual Composer as the organization's business objectives evolve.

■ *Creating Portal Applications Using PDK for .NET*

SAP Portal Development Kit for Microsoft.NET (PDK for .NET) is a set of tools that enables Microsoft .NET developers to build portal content for SAP NetWeaver Portal. Using PDK for .NET allows organizations to leverage their existing investments in the .NET technology and developers' skills, as well as take advantage of the SAP NetWeaver technology.



NOTE

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios* at a Glance ◀.

6.14.2 System Landscape

The following sections show system landscapes for all scenario variants.

For all scenario variants, take into account the following considerations:

- If you want to use Adobe document services, see the sections *Creating Interactive Forms and Print Forms* [page 65] and *Adobe Document Services* [page 72].
- Client Applications for Java Development

You can use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio on the front-end side for developing Java applications. SAP NetWeaver Developer Workplace requires more hardware resources, mainly because it has high memory requirements. If you cannot provide these resources on the front-end computers, we recommend that you use SAP NetWeaver Developer Studio only, which is part of the Developer Workplace.

The use of SAP NetWeaver Developer Studio has the following implications:

- You have to deploy the applications you have developed on a central test server. To prevent different versions of an application from overwriting each other, only one developer should work on one development component (if you do not use SAP NetWeaver Development Infrastructure) or on one EAR file.
- Only one developer can deploy an application at a particular time. This restriction does not exist if you use SAP NetWeaver Development Infrastructure.
- To enable debugging for multiple developers at the same time, you have to set up the central server with multiple server processes. Each developer who wants to debug needs a separate server process, because debugging stops the process completely and therefore stops also all other sessions on that same server process.

Developing User Interfaces in Java with Web Dynpro

The following figure shows the system landscape for the scenario variant *Developing User Interfaces in Java with Web Dynpro*:

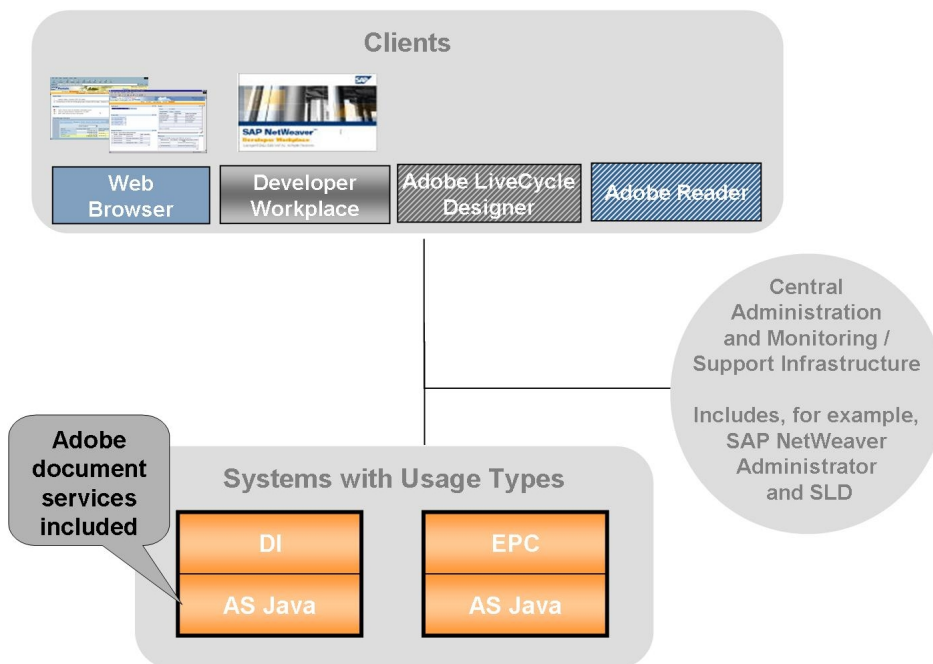


Figure 27: Developing User Interfaces in Java with Web Dynpro

When you plan your system landscape, consider the following aspects:

- On the front-end side, you use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio as the development environment.
- Usage type DI provides the development infrastructure. Although SAP strongly recommends that you use DI, you could opt to develop small projects without this infrastructure.
- We recommend that you install usage type DI in a separate system.

In addition, consider the following recommendations:

- Use the DI system for development on different releases in parallel (SAP NetWeaver 2004, SAP NetWeaver 7.0 and SAP NetWeaver Composition Environment)
- Use the most current version
- Use CTS+ integration in DI (from SAP NetWeaver 7.0 Support Package stack 14 onwards) if it offers benefits
- Use the new change management services (available with enhancement package 1 for SAP NetWeaver 7.0)
- If you want to modify Employee Self-Services of SAP ERP or SAP CRM: use CTS+ integration in DI.
- SAP strongly recommends that Java Web Applications are integrated in SAP NetWeaver Portal. This requires you to have an EP system in your landscape (SAP Enterprise Portal 6.0 SP2 or higher).
- Besides other services provided by the central administration and monitoring and support infrastructure, the development of Java applications requires the naming service of the System Landscape Directory and administration services provided by SAP NetWeaver Administrator.

6.14 Developing, Configuring, and Adapting Applications

- The installation of the Adobe LiveCycle Designer client is optional. This enables the creation of forms that combine high-fidelity presentation with XML data handling. If you installed Adobe LiveCycle Designer, you require Adobe Reader or Adobe Acrobat on the front end.

For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at <http://scn.sap.com/community/interactive-forms-by-adobe/> → *Get started with SAP Interactive Forms By Adobe* ↩.

Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications

The following figure shows the system landscape for the scenario variant *Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications*:

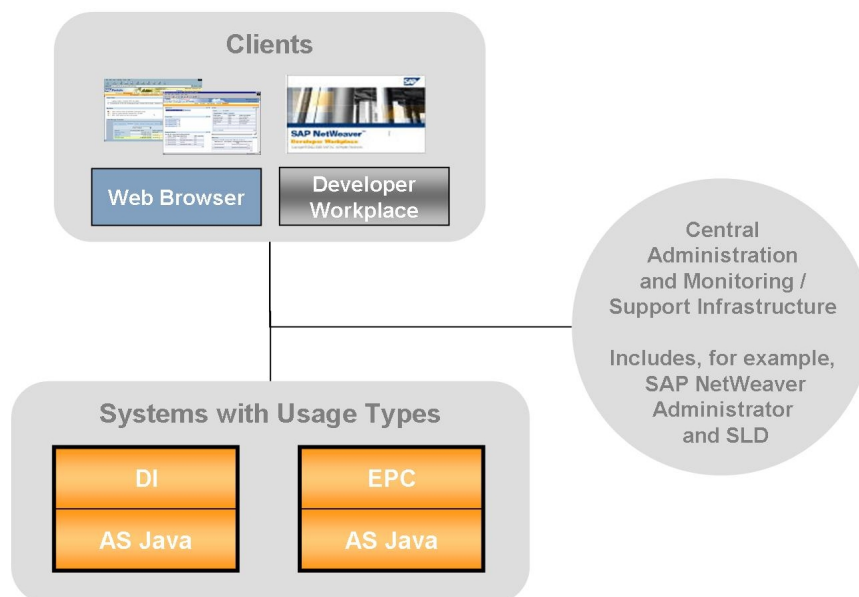


Figure 28: Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications

When you plan your system landscape, consider the following aspects:

- On the front-end side, you use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio as the development environment.
- Usage type DI provides the development infrastructure. Although SAP strongly recommends that you use DI, you could opt to develop small projects without this infrastructure.
- We recommend that you install usage type DI in a separate system.

In addition, consider the following recommendations:

- Use the DI system for development on different releases in parallel (SAP NetWeaver 2004, SAP NetWeaver 7.0 and SAP NetWeaver Composition Environment)
- Use the most current version

6.14 Developing, Configuring, and Adapting Applications

- Use CTS+ integration in DI (from SAP NetWeaver 7.0 Support Package stack 14 onwards) if it offers benefits
- Use the new change management services (available with enhancement package 1 for SAP NetWeaver 7.0)
- If you want to modify Employee Self-Services of SAP ERP or SAP CRM: use CTS+ integration in DI.
- SAP strongly recommends that Java Web Applications are integrated in SAP NetWeaver Portal. This requires you to have an EP system in your landscape (SAP Enterprise Portal 6.0 SP2 or higher).
- Besides other services provided by the central administration and monitoring and support infrastructure, the development of Java applications requires the naming service of System Landscape Directory and administration services provided by SAP NetWeaver Administrator.

Creating Composite Applications

The following figure shows the system landscape for the scenario variant Creating Composite Applications:

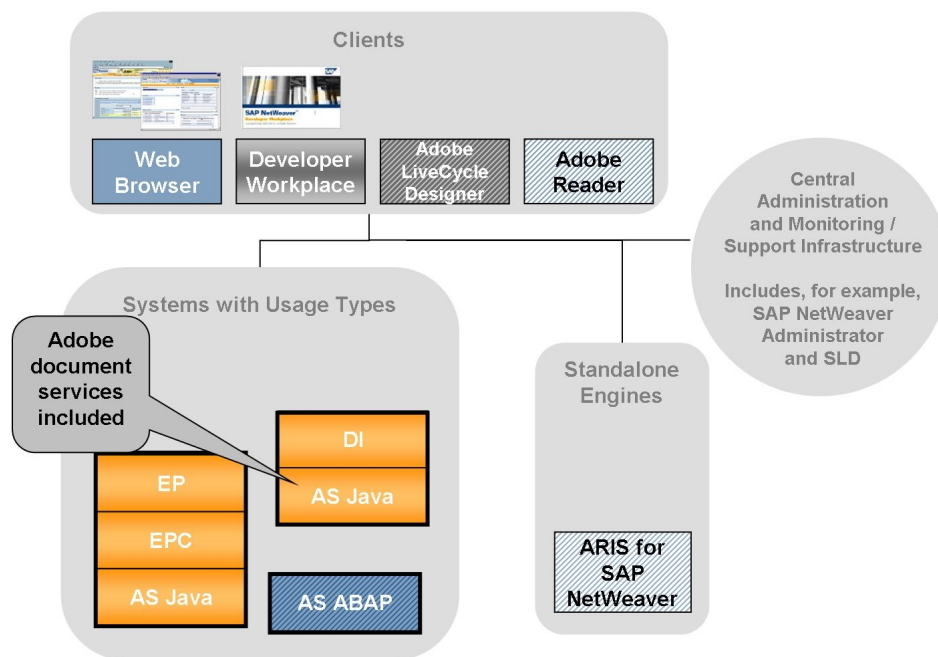


Figure 29: Creating Composite Applications

When you plan your system landscape, consider the following aspects:

- We recommend that you install usage type DI in a separate system.
In addition, consider the following recommendations:
 - Use the DI system for development on different releases in parallel (SAP NetWeaver 2004, SAP NetWeaver 7.0 and SAP NetWeaver Composition Environment)
 - Use the most current version

6.14 Developing, Configuring, and Adapting Applications

- Use CTS+ integration in DI (from SAP NetWeaver 7.0 Support Package stack 14 onwards) if it offers benefits
 - Use the new change management services (available with enhancement package 1 for SAP NetWeaver 7.0)
 - If you want to modify Employee Self-Services of SAP ERP or SAP CRM: use CTS+ integration in DI.
- AS ABAP is optional. You require it if you want to use business workflow.
 - The installation of the Adobe LiveCycle Designer client is optional. It enables the creation of forms that combine high-fidelity presentation with XML data handling. If you installed Adobe LiveCycle Designer, you require Adobe Reader or Adobe Acrobat on the front end.
For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at ► <http://scn.sap.com/community/interactive-forms-by-adobe/> → *Get started with SAP Interactive Forms By Adobe* ◀.
 - Besides other services provided by the central administration and monitoring and support infrastructure, the development of composite applications requires the naming service of System Landscape Directory and administration services provided by SAP NetWeaver Administrator.
 - On the front-end side, you use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio as the development environment.
 - Optionally, you can use ARIS for SAP NetWeaver in the modeling phase of this Creating Composite Applications scenario variant. ARIS for SAP NetWeaver is a joint brand by SAP and IDS Scheer AG. SAP customers can obtain ARIS for SAP NetWeaver from SAP.

Creating Business Applications Using ABAP

The following figure shows the system landscape for the scenario variant *Creating Business Applications Using ABAP*:

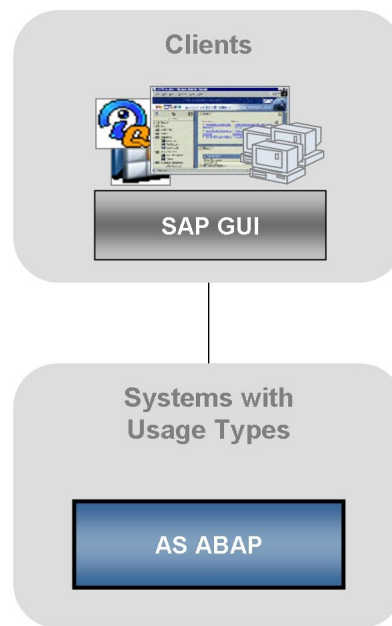


Figure 30: Creating Business Applications Using ABAP

Developing User Interfaces in ABAP with Web Dynpro

The following figure shows the system landscape for the scenario variant *Developing User Interfaces in ABAP with Web Dynpro*:

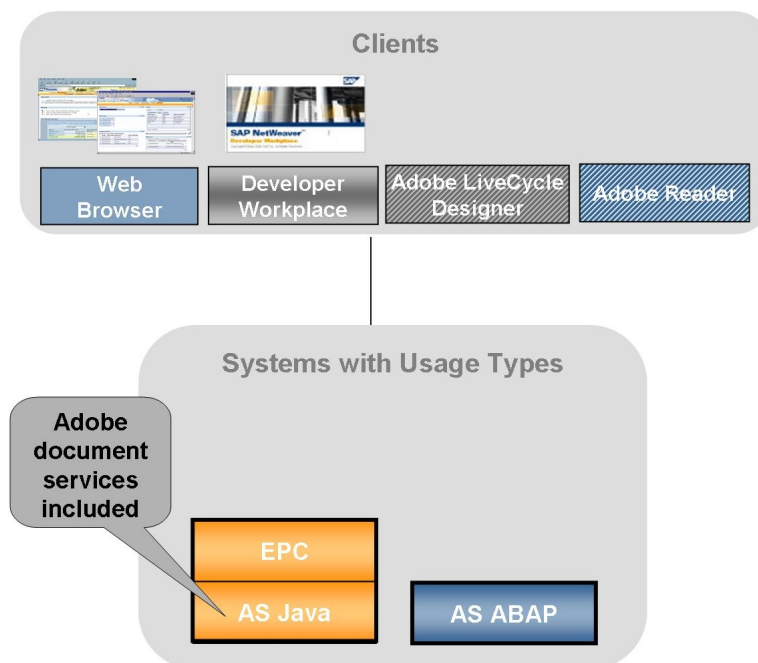


Figure 31: Developing User Interfaces in ABAP with Web Dynpro

6.14 Developing, Configuring, and Adapting Applications

The installation of the Adobe LiveCycle Designer client is optional. It enables the creation of forms that combine high-fidelity presentation with XML data handling. If you installed Adobe LiveCycle Designer, you require Adobe Reader or Adobe Acrobat on the front end.

For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at ► <http://scn.sap.com/community/interactive-forms-by-adobe/> → *Get started with SAP Interactive Forms By Adobe* ◀.

Developing Mobile Applications for Occasional Connection

The following figure shows the system landscape for the scenario variant *Developing Mobile Applications for Occasional Connection*:

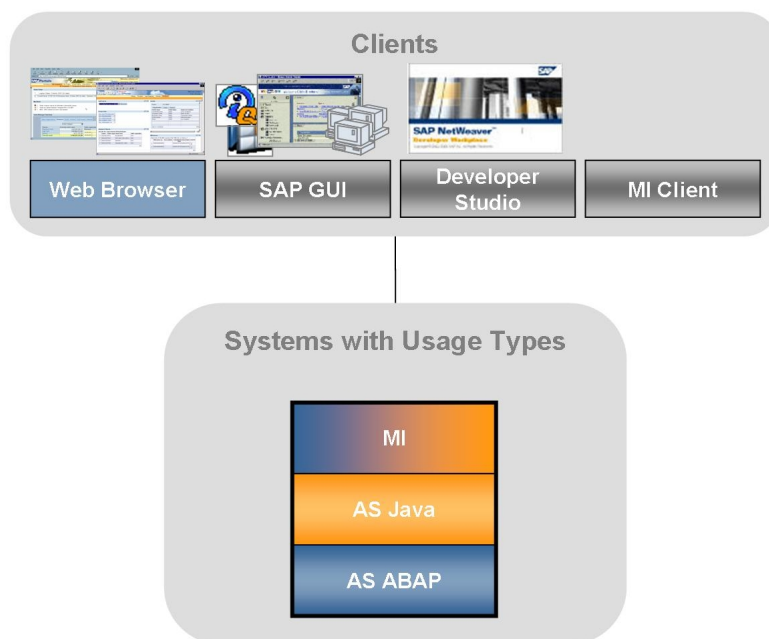


Figure 32: Developing Mobile Applications for Occasional Connection

On the front-end side, you use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio as development environment.

Creating Applications Using SAP NetWeaver Visual Composer

The following figure shows the system landscape for the scenario variant *Creating Applications Using SAP NetWeaver Visual Composer*:

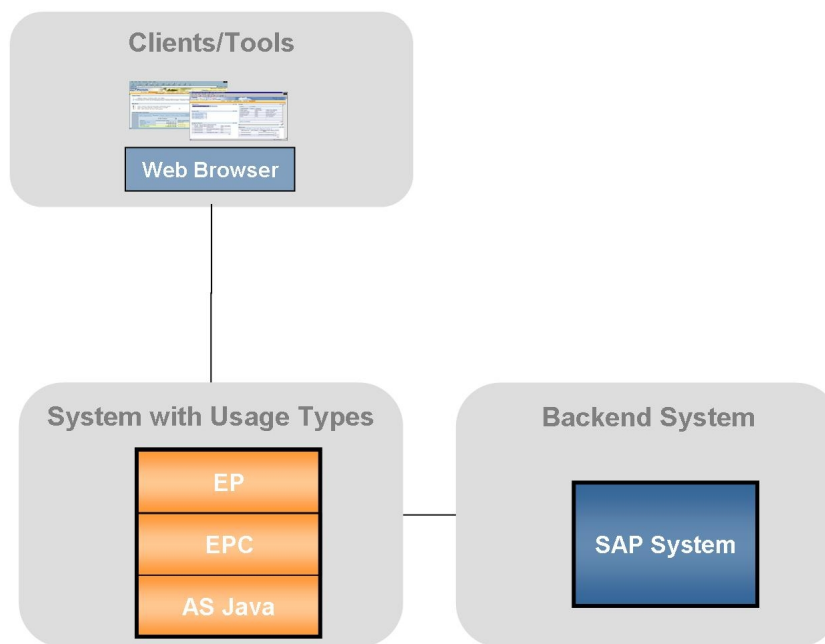


Figure 33: Creating Applications Using SAP NetWeaver Visual Composer

Visual Composer and the Adobe Flex server (used to compile applications modeled in Visual Composer to Flash) are installed automatically with usage type EP.

Creating Portal Applications Using PDK for .NET

The following figure shows the system landscape for the scenario variant *Creating Portal Applications Using PDK for .NET*.

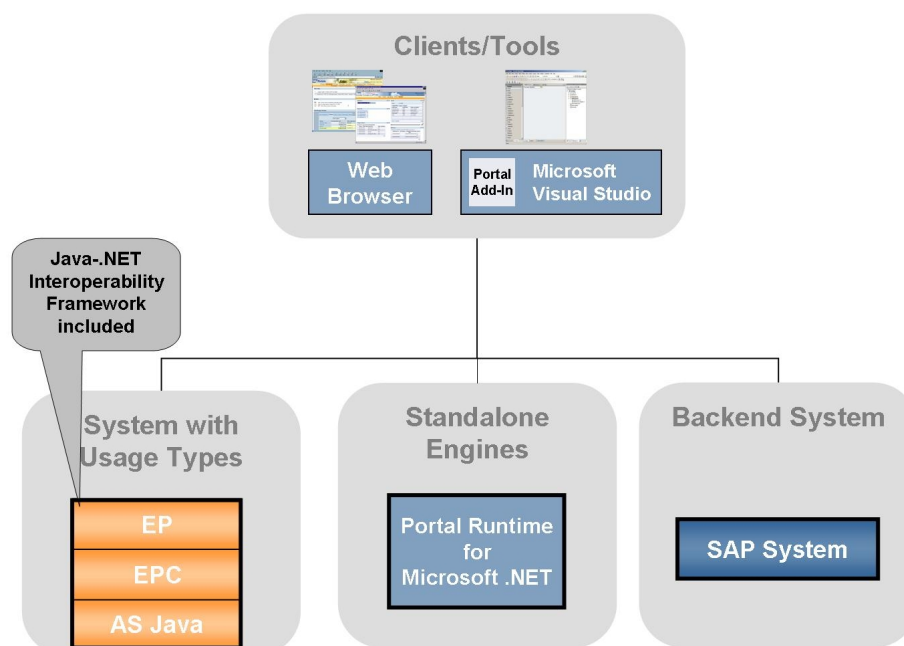


Figure 34: Creating Portal Applications Using PDK for .NET

6.14 Developing, Configuring, and Adapting Applications

The PDK for .NET package comprises the following parts:

- **Portal Runtime for Microsoft .NET (.NET Runtime)**
A service used to process .NET portal components at runtime. It is installed on a Microsoft Windows host that communicates with the portal at runtime.
- **Java-.NET Interoperability Framework**
A mechanism that enables API calls between the Java stack and .NET stack. Usage type EP includes Java-.NET Interoperability Framework.
- **Portal Add-in for Visual Studio (Portal Add-in)**
An add-in to Microsoft Visual Studio, which serves as the development environment for .NET portal applications. It is installed on developer hosts.

To connect to SAP back-end systems via BAPIs/RFCs, you should use the SAP .Net Connector; otherwise, you can use available Web services.

6.14.3 Implementation Sequence


Process

Developing User Interfaces in Java with Web Dynpro

To install the IT scenario variant *Creating User Interfaces in Java with Web Dynpro*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of a system with usage types DI and AS Java [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 for SAP NetWeaver 7.0 contains enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain

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Step	Action [Corresponding Documentation]	Remarks
		usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP NetWeaver 7.0</i> <Technology> on <Operating System>: <Database>.
3	If no EPC system is available in your system landscape, see the section <i>Running an Enterprise Portal</i> [page 75] and follow the implementation sequence for <i>Running an Enterprise Portal</i> to implement it.	You could use any EP system in your system landscape with SAP Enterprise Portal 6.0 SP2 or higher.
4	<p>Installation of clients:</p> <ul style="list-style-type: none"> ■ SAP NetWeaver Developer Workplace or SAP Developer Studio <p> NOTE If you have installed SAP enhancement package 1 for SAP NetWeaver 7.0 and want to use SAP Developer Workplace, install SAP Developer Workplace for SAP Enhancement Package 1 for SAP NetWeaver 7.0.</p> <p>[<i>Installation Guide – SAP NetWeaver Developer Workplace</i> <i>Installation Guide – SAP NetWeaver Developer Studio</i>]</p> <ul style="list-style-type: none"> ■ If you want to develop SAP Interactive Forms by Adobe, install Adobe LiveCycle Designer. [SAP Note 801524] 	<ul style="list-style-type: none"> ■ For the development environment, you can either use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio. ■ For an update of SAP Developer Workplace for SAP NetWeaver 7.0 to SAP Enhancement Package 1 for SAP NetWeaver, proceed as follows: <ol style="list-style-type: none"> 1. Update the Developer Studio as described in the document <i>SAP NetWeaver 7.0 Support Package Stack Guide</i>. 2. Install SAP enhancement package 1 for SAP NetWeaver on the underlying SAP NetWeaver Portal system as described in the document <i>Installation Guide – SAP Enhancement Package 1 for NetWeaver 7.0 (using SAINT/JSPM)</i>. ■ For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at http://scn.sap.com/community/interactive-forms-

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Step	Action [Corresponding Documentation]	Remarks
		by-adobe/ → <i>Get started with SAP Interactive Forms By Adobe</i> ↩.
5	Installation of third-party software: If you want to develop SAP Interactive Forms by Adobe, install the required version of Adobe Reader or Adobe Acrobat. [SAP Note 834573]	

Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications

To install the IT scenario variant *Leveraging Java 2 Platform, Enterprise Edition (J2EE) Standards for Porting and Adopting Applications*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of a system with usage types DI and AS Java [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
3	If no EPC system is available in your system landscape, see the section <i>Running an Enterprise Portal</i> [page 75] and follow the implementation sequence for <i>Running an Enterprise Portal</i> to implement it.	You could use any EP system in your system landscape with SAP Enterprise Portal 6.0 SP2 or higher.
4	Installation of clients: SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio	For the development environment, you can either use SAP NetWeaver

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Step	Action [Corresponding Documentation]	Remarks
	[<i>Installation Guide – SAP NetWeaver Developer Workplace</i> or <i>Installation Guide – SAP NetWeaver Developer Studio</i>]	Developer Workplace or SAP NetWeaver Developer Studio.

Creating Composite Applications

To install the IT scenario variant *Creating Composite Applications*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of a system with usage types EP and DI (includes AS Java). [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	<ul style="list-style-type: none"> ■ You can install DI and EP in two separate systems (one system with DI and AS Java, one system with EP and AS Java). ■ EP includes Guided Procedures. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>.
3	Optional: Installation of a system with usage type AS ABAP [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	You require AS ABAP if you want to use business workflow. You can install it either in one system with DI and EP or as separate system.

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Step	Action [Corresponding Documentation]	Remarks
4	Installation of clients: <ul style="list-style-type: none"> ■ SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio [<i>Installation Guide – SAP NetWeaver Developer Workplace</i> <i>Installation Guide – SAP NetWeaver Developer Studio</i>] ■ If you want to develop SAP Interactive Forms by Adobe, install Adobe LiveCycle Designer. [SAP Note 801524] 	<ul style="list-style-type: none"> ■ As a development environment, you can either use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio. ■ For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at http://scn.sap.com/community/interactive-forms-by-adobe/ → <i>Get started with SAP Interactive Forms By Adobe</i> ↩.
5	Installation of third-party software: If you want to develop SAP Interactive Forms by Adobe, install the required version of Adobe Reader or Adobe Acrobat. [SAP Note 834573]	
6	If required, installation of ARIS for SAP NetWeaver	You can use ARIS for SAP NetWeaver in the modeling phase of this <i>Creating Composite Applications</i> scenario variant. ARIS for SAP NetWeaver is a joint brand by SAP and IDS Scheer AG. SAP customers can obtain ARIS for SAP NetWeaver from SAP.

Creating Business Applications Using ABAP

To install the IT scenario variant *Creating Business Applications Using ABAP*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to properly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of a system with usage type AS ABAP. [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage

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Step	Action [Corresponding Documentation]	Remarks
		types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>.
3	Installation of clients: SAP GUI [<i>Installation Guide – SAP Front End</i>]	

Developing User Interfaces in ABAP with Web Dynpro

To install the IT scenario variant *Developing User Interfaces in ABAP with Web Dynpro*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Install a system with usage type EPC (includes the installation of AS Java). [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In

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Step	Action [Corresponding Documentation]	Remarks
		<p>addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the Installation Guide – SAP NetWeaver.</p>
3	<p>Install a system with usage type AS ABAP. [<i>Installation Guide – SAP NetWeaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<ul style="list-style-type: none"> ■ SAP enhancement packages 1 and 2 for SAP NetWeaver 7.0 contain enhancements for this scenario. If you want to use these enhancements, use the SAP NetWeaver 7.0 installation which includes enhancement package 1 or enhancement package 2. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the Installation Guide – SAP NetWeaver. ■ After the installation, configure the portal integration in AS ABAP. For more information, see the SAP Library at ► <i>SAP NetWeaver Library</i> → <i>SAP NetWeaver Developers' Guide</i> → <i>IT Scenario-Driven Enhancements to Applications</i> → <i>Running an Enterprise Portal</i> → <i>Getting Involved</i> → <i>Web Dynpro Applications for the Portal</i> ◀.
4	<p>Installation of clients:</p> <ul style="list-style-type: none"> ■ SAP GUI [<i>Installation Guide – SAP Front End</i>] ■ Install Adobe LiveCycle Designer. [SAP Note 801524] 	<p>For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at ► http://scn.sap.com/community/interactive-forms-by-adobe/ → <i>Get started with SAP Interactive Forms By Adobe</i> ◀.</p>

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Step	Action [Corresponding Documentation]	Remarks
5	Installation of third-party software: If you want to develop SAP Interactive Forms by Adobe, install the required version of Adobe Reader or Adobe Acrobat. [SAP Note 834573]	

Developing Mobile Applications for Occasional Connection

To install the IT scenario variant *Developing Mobile Applications for Occasional Connection*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Install a system with usage type MI (includes the installation of AS ABAP and AS Java). [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]	<ul style="list-style-type: none"> ■ At the moment, we do not recommend that you combine MI with other usage types (besides AS ABAP and AS Java) in one system. Instead, we recommend that you install a dedicated MI system. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>.

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Step	Action [Corresponding Documentation]	Remarks
3	<p>Installation of clients:</p> <ul style="list-style-type: none"> ■ SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio [<i>Installation Guide – SAP NetWeaver Developer Workplace</i> <i>Installation Guide – SAP NetWeaver Developer Studio</i>] ■ MI Client on your mobile devices [See the <i>SAP Library</i> [page 14] at ► <i>SAP NetWeaver Library</i> → <i>Technology Consultant's Guide</i> → <i>Mobilizing Business Processes</i> → <i>Setting Up SAP MI on the Mobile Device</i> ◀] ■ SAP GUI [<i>Installation Guide – SAP Front End</i>] 	For the development environment, you can either use SAP NetWeaver Developer Workplace or SAP NetWeaver Developer Studio.

Creating Applications Using SAP NetWeaver Visual Composer

To install the IT scenario variant *Creating Applications Using SAP NetWeaver Visual Composer*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Before the installation, check the prerequisites for SAP NetWeaver Visual Composer. [<i>Installation and Configuration Guide – SAP NetWeaver Visual Composer</i>]</p>	
3	<p>Install a system with usage type EPC and EP (includes the installation of AS Java). [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<ul style="list-style-type: none"> ■ Visual Composer and the Adobe Flex server (used to compile applications modeled in Visual Composer to Flash) are installed automatically with usage type EP. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain

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Step	Action [Corresponding Documentation]	Remarks
		usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the Installation Guide – SAP NetWeaver.
4	Perform the configuration for SAP NetWeaver Visual Composer. [<i>Installation and Configuration Guide – SAP NetWeaver Visual Composer</i>]	

Creating Portal Applications Using PDK for .NET

To install the IT scenario variant *Creating Portal Applications Using PDK for .NET*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Before the installation, check the prerequisites for PDK for .NET. [<i>Installation, Upgrade, and Configuration Guide – PDK for .NET</i>]	
3	Install a system with usage type EPC and EP (includes the installation of AS Java). [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in

6.15 SAP NetWeaver Operations

Step	Action [Corresponding Documentation]	Remarks
		SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the Installation Guide – SAP NetWeaver.
4	Perform the installation and initial configuration of PDK for .NET. [<i>Installation, Upgrade, and Configuration Guide – PDK for .NET</i>]	
5	Install SAP .Net Connector if required.	Currently, SAP .Net Connector is not directly supported by Visual Studio 2005. For more information, see SAP Note 943349 .

6.15 SAP NetWeaver Operations

6.15.1 Overview

The SAP NetWeaver Operations IT scenario deals with tools and methods that help you to run an SAP NetWeaver system landscape efficiently and ensure its reliability.

This scenario includes the following variants:

- *Monitoring SAP NetWeaver*

Organizations have all the tools and services to monitor a single SAP NetWeaver instance as well as a system landscape based on the SAP NetWeaver platform. They can perform central alert monitoring and problem solving and can monitor all online activities.

- *Administering SAP NetWeaver*

Organizations have all the tools and services they need to administer SAP NetWeaver. They can perform system configuration and optimization; manage continuous operations, including daily tasks and checks; and perform service-level reporting.

- *Information Lifecycle Management*

Organizations can archive data to reduce system load and comply with regulatory requirements. They can manage the life cycle of information by defining and applying retention policies, and they can decommission legacy systems and upload the data in the retention warehouse for auditing purposes.



NOTE

SAP NetWeaver Information Lifecycle Management (ILM) is provided as of SAP enhancement package 2 for SAP NetWeaver 7.0 and enhancement package 5 for SAP ERP 6.0. For more information about the functional scope of SAP NetWeaver ILM, see SAP Note [1168187](#). For information about the implementation, see SAP Note [1480223](#).

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If you plan to use SAP NetWeaver ILM as of SAP enhancement package 3 for SAP NetWeaver 7.0 and enhancement package 6 for SAP ERP 6.0, refer to SAP Note [1648883](#).

You have to activate the ILM business functions using the Switch Framework. Note that this activation is irreversible.

If you exclusively want to use the classical data archiving without the new ILM functions (such as retention management, legal case management, or retention warehouse), no ILM license is required. The classical data archiving functions do not need to be activated in the Switch Framework, either.

■ Adaptive Computing

SAP NetWeaver enables adaptive computing, in which hardware, software, and system services are able to adapt to changing business needs. SAP NetWeaver provides the platform for users to run any service anytime on any server, and it provides a central point of control for flexible assignment of computing resources.



NOTE

For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.15.2 System Landscape

Monitoring SAP NetWeaver / Administering SAP NetWeaver

The following figure shows the system landscape for the two scenario variants.

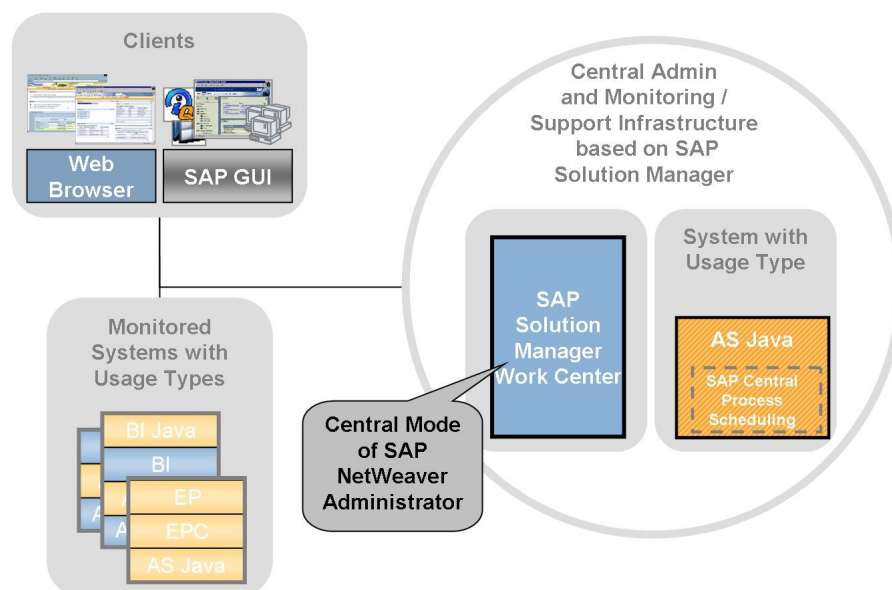


Figure 35: Monitoring SAP NetWeaver / Administering SAP NetWeaver

SAP Central Process Scheduling is integrated with AS Java. With SAP Central Process Scheduling you can enhance the integration capabilities of SAP NetWeaver with powerful cross-component scheduling functionality.

Information Lifecycle Management

Information lifecycle management comprises the following use cases that are detailed below:

- Data archiving
- Retention management
- System decommissioning

The following figure shows the system landscape for data archiving and retention management:

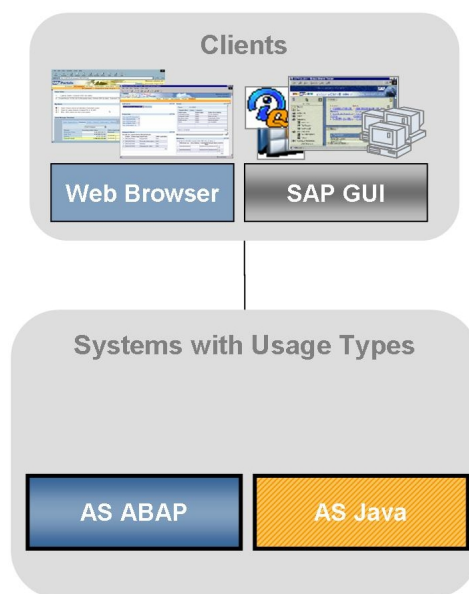


Figure 36: Data Archiving and Retention Management

When you plan your system landscape, consider the following aspects:

- The technological foundation of *Data Archiving* is available in two different variants:
 - If you want to perform archiving based on the Archive Development Kit (ADK), set up archiving in every system with usage type AS ABAP. This is the main data archiving scenario.
 - If you want to perform XML-based archiving for ABAP, you have to choose one system in your system landscape with usage type AS Java that can perform data archiving for multiple ABAP-based systems. If you want to perform XML-based archiving for Java, you can choose one system in your system landscape with usage type AS Java that can perform data archiving for multiple Java-based systems. As with ADK-based archiving, you can also set up archiving separately in every system for XML-based archiving for both ABAP and Java.

- If you want to use *Retention Management* (AS ABAP), you must choose one system in your system landscape with usage type AS Java that hosts the central archiving services used by multiple ABAP systems.

In addition, you need the application-specific content provided by SAP enhancement package 5 for SAP ERP 6.0.

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *Administrator's Guide* → *Technical Operations Manual for SAP NetWeaver* → *General Administration Tasks* → *Data Archiving* ◀.

The following figure shows the system landscape for system decommissioning:

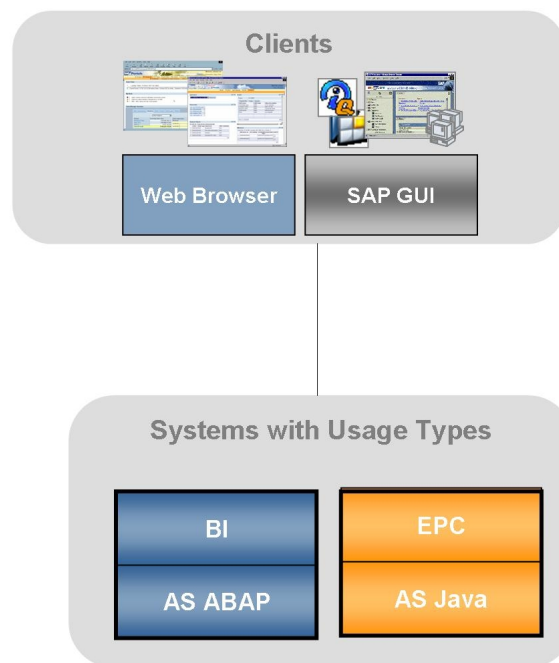


Figure 37: System Decommissioning

When you plan your system landscape, consider the following aspects:

- The system with usage type BI hosts the SAP NetWeaver Business Intelligence (BI) functions. You can either use a BI system dedicated for Retention Warehouse (recommended option) or an existing BI system.
- The system with usage type EPC provides the capabilities for user access.
- You need a system with SAP enhancement package 5 for SAP ERP 6.0 which contains the technical usage *Central Applications*.
- For minimum (local) reporting requirements, you can also set up system decommissioning without BI.

Adaptive Computing

The following figure shows the system landscape for this scenario variant.

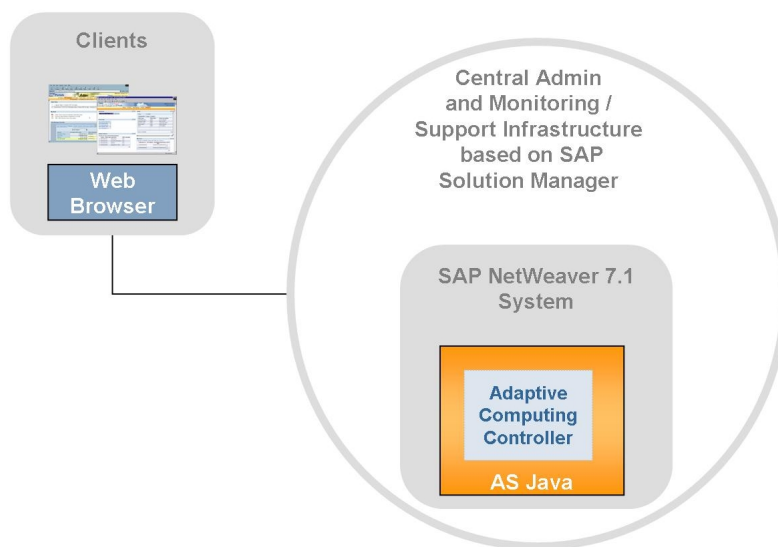


Figure 38: Adaptive Computing

- For SAP NetWeaver 7.0, the new version of SAP Adaptive Computing Controller can be used, which is based on SAP NetWeaver 7.1.
- The System Landscape Directory is used for the configuration and Customizing of the adaptive computing landscape – application services and servers.

6.15.3 Implementation Sequence

Process

Monitoring SAP NetWeaver / Administering SAP NetWeaver

To install the IT scenario variants *Monitoring SAP NetWeaver* or *Administering SAP NetWeaver*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	

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Step	Action [Corresponding Documentation]	Remarks
2	Installation of an SAP Solution Manager system <i>[Installation Guide – SAP Solution Manager <Technology> on <Operating System>: <Database>]</i>	<ul style="list-style-type: none"> ■ As of SAP Solution Manager 7.0 SP15, work centers can be used for central administration and monitoring. The central mode of SAP NetWeaver Administrator is fully integrated into SAP Solution Manager. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.1 <Technology> on <Operating System>: <Database></i>.
3	Setup of central monitoring and activation of work centers in the SAP Solution Manager system <i>[Monitoring Setup Guide for SAP NetWeaver]</i>	SAP NetWeaver Administrator is included in the work centers of SAP Solution Manager.
4	Setup of a local System Landscape Directory in this system <i>[Post-Installation Guide – System Landscape Directory]</i>	System Landscape Directory is included in SAP NetWeaver systems with AS Java. It is used to supply system and version information.
5	If required, installation of SAP Central Process Scheduling on a system with usage type AS Java <i>[SAP Central Process Scheduling Installation Guide]</i>	SAP Central Process Scheduling is used for cross-component scheduling.
6	Installation of clients: SAP GUI <i>[Installation Guide – SAP Front End]</i>	
7	Installation of CCMS agents on your back-ends: <ul style="list-style-type: none"> ■ On each client running an SAP NetWeaver 7.0 system with usage type AS Java (or AS ABAP and AS Java), one SAPCCMSR agent must be registered per Java instance. ■ On each client running an SAP NetWeaver system with usage type AS ABAP (or AS ABAP and AS Java), one SAPCCM4x agent should be registered per ABAP instance. 	CCMS agents are used for data provisioning. For more information, see SAP Service Marketplace at http://service.sap.com/~sapidb/011000358700003240702001E .

6.15 SAP NetWeaver Operations

Step	Action [Corresponding Documentation]	Remarks
	<ul style="list-style-type: none"> On clients running components that do not rely on SAP NetWeaver with usage type AS ABAP or AS Java (for example, Search and Classification [TREX]), SAPCCMSR agent plus SAPOSCOL must be installed. <p>There is no need to touch the productive components directly.</p>	
8	<p>Install the Diagnostic Agent where required:</p> <ul style="list-style-type: none"> SAP NetWeaver 7.0 installations before SAP NetWeaver 7.0 SR3: install the Diagnostic Agent on each host that you want to monitor. SAP NetWeaver 7.0 SR3 and higher: only install the Diagnostic Agent on systems based on AS ABAP or for third-party-software systems. SAP NetWeaver systems that include AS Java automatically include the Diagnostics Agent. <p>[<i>Diagnostics Agent Setup Guide</i> available on SAP Service Marketplace at http://service.sap.com/diagnostics]</p>	The Diagnostic Agent delivers data into the central monitoring system.
9	<p>Installation of the log viewer remote server on each SAP NetWeaver component host running Java and other non-ABAP applications:</p> <ul style="list-style-type: none"> The log viewer is included in SAP NetWeaver systems with usage type AS Java. The log viewer (client and server) and its user guide is located in <Java_Installation_Directory>\admin\ \ logviewer-standalone. For other non-ABAP systems, you can download the complete package including user guide from SAP Service Marketplace at http://service.sap.com/patches → <i>Entry by Application Group</i> → <i>Additional Components</i> → <i>Java Log Viewer</i> ↩. 	The log viewer remote server is required for central log viewing.

Information Lifecycle Management

- For *Data Archiving*, no special installation is required. However, for XML-based data archiving for ABAP and for Java, you need to perform the configuration steps described in the SAP Library at [▶ SAP NetWeaver Library](#) → *Administrator's Guide* → *Technical Operations Manual for SAP NetWeaver* → *General Administration Tasks* → *Data Archiving* ↩.

6.15 SAP NetWeaver Operations

- For *Retention Management*, SAP enhancement package 2 for SAP NetWeaver 7.0 is required. To install an enhancement package on an existing SAP NetWeaver 7.0 system, see the *Update Guide — Update of SAP Systems Using Software Update Manager <version>*.
For the application-specific content, you require a system with SAP enhancement package 5 for SAP ERP 6.0.
- For *System Decommissioning*, see the implementation sequence below.
- For XML archiving, you require a WebDAV storage system certified for BC-DAR 1.1 or BC-ILM 2.0
- For information lifecycle management, you require an ILM-aware storage system (3rd party product with additional installation steps) certified for BC-ILM 2.0 to achieve an end-to-end ILM solution.

Implementation Sequence for System Decommissioning

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Prepare your SAP ERP 6.0 system: Install SAP enhancement package 5 for SAP ERP 6.0 and select the technical usage <i>Central Applications</i> during the installation process.</p> <p>[</p> <ul style="list-style-type: none"> ■ <i>Master Guide – SAP enhancement package <x> for SAP ERP 6.0</i> and related documentation available at http://service.sap.com/erp-ehp-inst ■ Documentation for the business function FIN_ACC_ILM in the SAP Library at http://help.sap.com/erp → SAP ERP Enhancement Packages → SAP enhancement package <x> for SAP ERP 6.0 <Language> → Business Functions → Business Functions in SAP ERP → Enterprise Business Functions → Cross-Application Enterprise Business Functions → Information Lifecycle Management: Tax Auditing ◀ <p>]</p>	

6.15 SAP NetWeaver Operations

Step	Action [Corresponding Documentation]	Remarks
3	Install a system with usage type AS ABAP (required for usage type BI) [<i>Installation Guide – SAP NetWeaver 7.0 including SAP Enhancement Package <x> <Technology> on <Operating System>: <Database></i>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, there are configuration tasks that can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
4	Configure the database of your AS ABAP system for BI as described in SAP Note 567745 .	
5	Install SAP NW 7.0 BI CONT Add-On 7.05 or higher in the AS ABAP system according to SAP Note 1321293 .	
6	Install a system with usage type EPC (includes AS Java) [<i>Installation Guide – SAP NetWeaver 7.0 including SAP Enhancement Package <x> <Technology> on <Operating System>: <Database></i>]	Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, there are configuration tasks that can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
7	Install clients: SAP GUI [<i>Installation Guide – SAP Front End</i>]	

Adaptive Computing

To install the IT scenario variant *Adaptive Computing*, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	Make sure that you have performed the preparatory steps: <ul style="list-style-type: none"> You have planned your <i>system landscape</i> [page 51] (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems). 	

Step	Action [Corresponding Documentation]	Remarks
	<ul style="list-style-type: none"> ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	Installation of Adaptive Computing Controller [Installation Guide – Adaptive Computing Controller in SAP NetWeaver 7.1 available on SAP Service Marketplace at ► http://service.sap.com/installnwpi71 → Installation ◀]	

6.16 Software Life-Cycle Management

6.16.1 Overview

Software Life-Cycle Management by SAP comprises the management of SAP products and solutions in real, customer-specific system landscapes.

Organizations can manage SAP software in their system landscapes by performing implementation tasks such as planning changes, implementing new systems, copying existing systems, or enabling the creation and propagation of changes in the landscape. Organizations can also maintain their software by importing support packages and corrections or by upgrading to new software versions.

This scenario includes the following variants:

- *Implementation Support*

Addresses the need to implement new functions, implement and configure business content, copy or migrate systems, and support the creation and propagation of customer-specific changes in an existing landscape.

- *Software Maintenance*

Addresses the need to update your system landscape to keep it up and running and to upgrade the scenarios realized in your landscape to new releases.

Software Life-Cycle Management provides the services to implement, copy, maintain, and upgrade every IT scenario supported by SAP NetWeaver and to support software change management:

- Implementation is included implicitly in the description of the other IT scenarios. Therefore, no general system landscape or implementation sequence can be given for Software Life-Cycle Management.
- For information about copy and migration, see the *Homogeneous and Heterogeneous System Copy Guide for SAP Systems Based on SAP NetWeaver* available on SAP Service Marketplace at ► <http://service.sap.com/instguidesnw70> → Installation ◀.

6.17 Mobilizing Business Processes

- Alternatively, you can copy your system with a completely automated end-to-end framework available with the *SAP NetWeaver Landscape Virtualization Management 1.0, enterprise edition*. For more information, see the SAP Help Portal ► <http://help.sap.com/nwlvm> ◀.
- Software change management is implicit in the description of development scenarios, such as *Developing, Configuring, and Adapting Applications* [page 128].
- For information about maintenance, see the *Support Package Stack Guide – SAP NetWeaver* available on SAP Service Marketplace at ► <http://service.sap.com/instguidesnw70> → Maintenance ◀.
- For information about upgrade, see the *Upgrade Master Guide – SAP NetWeaver* available on SAP Service Marketplace at ► <http://service.sap.com/instguidesnw70> → Upgrade ◀.



NOTE

For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.17 Mobilizing Business Processes

6.17.1 Overview

The IT scenario Mobilizing Business Processes enables you to extend your existing and new business processes into the mobile world. In addition to simple productivity tools such as e-mail, SAP NetWeaver integrates mobile end users in back-end business processes. It enables you to extend critical enterprise resources to mobile devices that connect your global organization into a single team.

Using the SAP NetWeaver application server as an intermediary server between mobile devices and business back-end systems, SAP NetWeaver can serve different user scenarios and user groups by providing optimized client technology platforms for them. By using ABAP and Java as programming languages, companies can leverage their existing expertise in this area and do not need to invest in specialized mobile device platforms and programming languages. The IT scenario covers all aspects of end-user integration, back-end integration, and administration.

Mobile end users need to be integrated into back-end business processes to replace manual paper-driven processes (in delivery and service management). These end users can be of very different kinds (business managers, truck delivery drivers, or warehouse workers).

Companies need to integrate application functionality from multiple application servers within their system landscape.

Mobile devices need to be set up, while users, devices, and applications need to be monitored during the whole life cycle.

The development of mobile applications is seamlessly embedded as variants in the *Developing, Configuring, and Adapting Applications* [page 128] IT scenario and is based on the Mobile Development Kit (offline applications) and Web Dynpro technology (online applications). Customers require great flexibility in developing their own mobile applications, or adapting mobile business solutions from SAP to their own specific needs.

This scenario includes the following variants:

- *Running Mobile Applications with an Online Connection*

End users with mobile devices that are always connected can access the back-end system in real time. All business logic resides on the server, where the user interface is generated and sent to the mobile device.

For the development of *Running Mobile Applications with an Online Connection*, see the *Developing Java Applications using Web Dynpro* IT scenario variant of the *Developing, Configuring, and Adapting Applications* [page 128] IT scenario.

- *Enabling Mobile Applications for Occasional Connection*

End users with mobile devices that are occasionally connected can carry out their tasks without being connected to the back-end system. The required business logic and user interface reside on the mobile device, and when the mobile device connects to the back-end system, it exchanges all modified data.

For the development of *Enabling Mobile Applications for Occasional Connection*, see the *Developing Mobile Applications for Occasional Connection* IT scenario variant of the *Developing, Configuring, and Adapting Applications* [page 128] IT scenario.

**NOTE**

Note that this IT scenario variant is only an example. For more information, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ◀.

6.17.2 System Landscape

Running Mobile Applications with an Online Connection

The following figure shows the system landscape for this scenario variant.

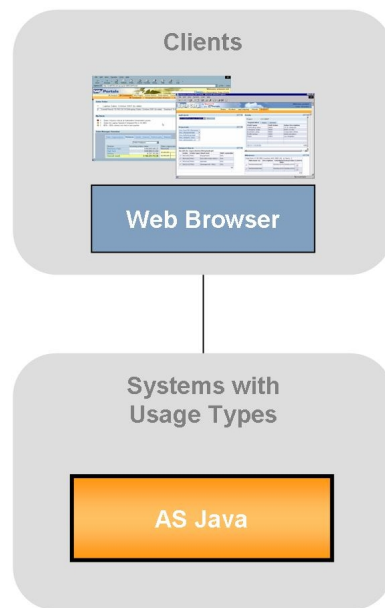


Figure 39: Running Mobile Applications with an Online Connection



NOTE

In addition to the AS Java system, you normally also require business back-end systems for your mobile applications.

Enabling Mobile Applications for Occasional Connection

The following figure shows the system landscape for this scenario variant.

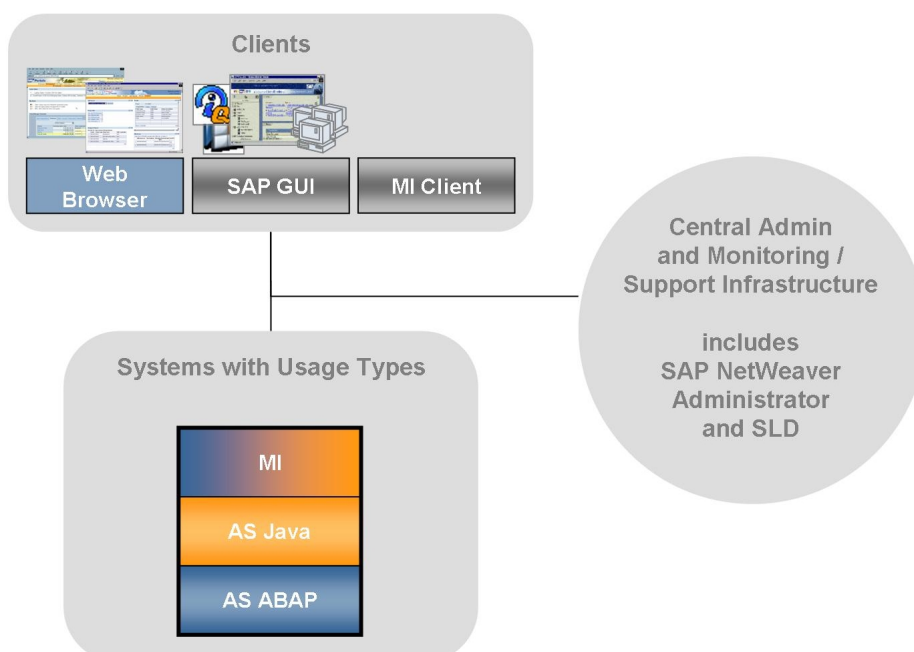


Figure 40: Enabling Mobile Applications for Occasional Connection

6.17 Mobilizing Business Processes

When you plan your system landscape, consider the following aspects:

- In addition to the MI system, you normally also require business back-end systems for your mobile applications.
- Besides other services provided by the central administration and monitoring and support infrastructure, Mobilizing Business Processes integrates the SAP NetWeaver Mobile Administrator into SAP NetWeaver Administrator for the administration of devices and the deployment of mobile applications.

6.17.3 Implementation Sequence

Process

Running Mobile Applications with an Online Connection


To install the IT scenario variant, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of a system with usage type AS Java [<i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<p>Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP Netweaver 7.0</i> <Technology> on <Operating System>: <Database>.</p>


Mobile Applications for Occasional Connection

To install the IT scenario variant, perform the steps listed in the following table:

6.17 Mobilizing Business Processes

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Installation of a system with usage type MI (includes the installation of AS ABAP and AS Java) [<i>Installation Guide – SAP NetWeaver 7.0</i> <Technology> on <Operating System>: <Database>]</p>	<p> RECOMMENDATION</p> <p>We strongly recommend to all customers who want to use Mobile capabilities of SAP NetWeaver 7.0 that they start with Support Package Stack 17 and above. SPS 17 provides improved performance and additional important product capabilities for mobile solutions.</p> <ul style="list-style-type: none"> ■ At the moment, we do not recommend that you combine MI with other usage types (besides AS ABAP and AS Java) in one system. Instead, we recommend that you install a dedicated MI system. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP NetWeaver 7.0</i> <Technology> on <Operating System>: <Database>.
3	<p>Installation of clients:</p> <ul style="list-style-type: none"> ■ MI Client on your mobile devices [See the <i>SAP Library</i> [page 14] at ► <i>SAP NetWeaver Library</i> → <i>Technology Consultant's Guide</i> → <i>Mobilizing Business Processes</i> 	

6.18 Authentication and Single Sign-On

Step	Action [Corresponding Documentation]	Remarks
	→ <i>Setting Up SAP MI on the Mobile Device</i>  ■ SAP GUI [<i>Installation Guide – SAP Front End</i>]	

6.18 Authentication and Single Sign-On

6.18.1 Overview


The *Authentication and Single Sign-On* IT scenario provides several recommended ways to implement authentication and one way to integrate different systems into a Single Sign-On landscape. The scenario is based on industry standards (LDAP, SAML, JAAS) to ensure interoperability. It enables customers to leverage their existing investments, for example in a directory server. Single Sign-On reduces complexity for end users, saving them valuable time, while also reducing administration effort for resetting passwords, which helps reduce TCO.

This scenario features the following types of initial authentication: User name and password authentication, header-based authentication, SAML-based authentication, third-party authentication using a JAAS login module, and Single Sign-On using SAP logon tickets.

This scenario includes the variant *Authentication Using a Directory with SSO Integration Using SAP Logon Tickets*. Organizations can implement authentication using information stored in a lightweight directory access protocol (LDAP) directory and integrate different SAP software systems into a Single Sign-On landscape.



NOTE

Note that this IT scenario variant is only an example. For more information, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* .

6.18.2 System Landscape

The following figure shows the system landscape for this IT scenario.

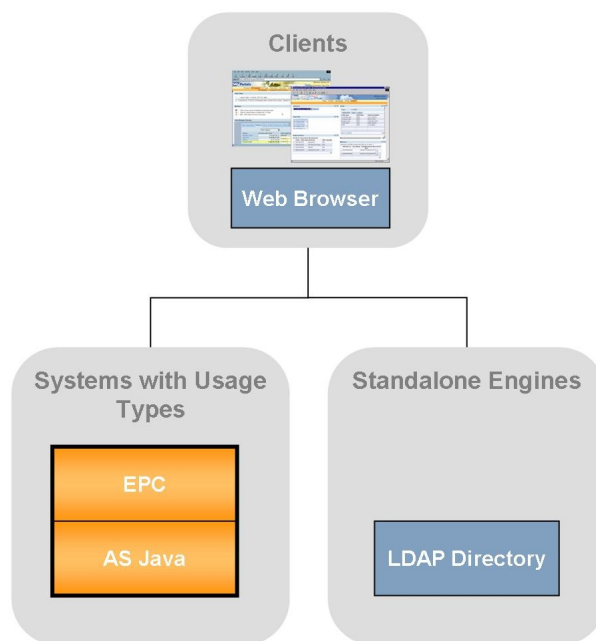


Figure 41: Authentication and Single Sign-On

After logging on to the portal where authentication takes place, all systems in the landscape (whether they are based on AS ABAP, AS Java or both) can be accessed.

6.18.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Install a system with usage type EPC (includes the installation of AS Java) [<i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i>]</p>	<p>Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, there are configuration tasks that can be applied by the configuration wizard after you have installed your system and patched</p>

6.19 Integrated User and Access Management

Step	Action [Corresponding Documentation]	Remarks
		it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP Netweaver 7.0 <Technology> on <Operating System>: <Database></i> .
3	Installation of third-party tools: If this has not been done yet, install an LDAP directory.	

6.19 Integrated User and Access Management

6.19.1 Overview

The *Integrated User and Access Management* IT scenario provides two of the recommended ways to implement integrated user and access management. It addresses the need to store and manage user information and to control user access to data, while at the same time reducing redundancy. SAP's mature, fine-grained authorization concept allows detailed control of access rights. Consolidating user and authorization information reduces complexity and increases transparency, which is helpful both in terms of security and from a governance perspective. Integrated user and access management enables customers to leverage existing investments where appropriate, for example, by using data already available in an SAP system or in an LDAP-based directory server.

This scenario features central user administration, a user management engine (UME), and an LDAP-based directory server (optional; third party).

This scenario includes the following variants:

- *Integrated User and Access Management that Includes a Third-Party Directory Server*

Organizations can take an integrated approach to user and access management by using the central user administration features and the SAP NetWeaver user management engine along with a third-party directory server based on lightweight directory access protocol (LDAP).

- *Integrating User Management and Access Management*

Organizations can take an integrated approach to user and access management with the central user administration features and the SAP NetWeaver user management engine.



NOTE

- For more information about this IT scenario, see the *SAP Library* [[page 14](#)] at ► *SAP NetWeaver Library* → *IT Scenarios at a Glance* ↩.
- Note that the variant described for this IT scenario is only an example. For information about options on how to integrate user management across a system landscape and for recommendations on when to use which option, see the *SAP Library* [[page 14](#)] at ► *SAP*

Net Weaver Library → SAP Net Weaver by Key Capability → Security → Identity Management → Identity Management for System Landscapes ↩.

6.19.2 System Landscape

The following figure shows the system landscape for this IT scenario.

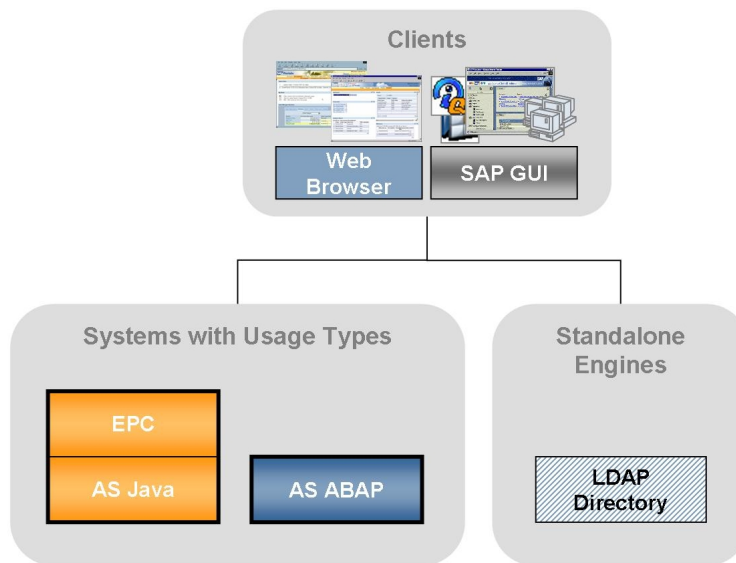


Figure 42: Integrated User and Access Management

When you plan your system landscape, consider the following aspects:

- You operate user management for systems with usage type AS Java (including systems with both AS ABAP and AS Java that use AS Java's user management engine) in the EPC system of your system landscape.
- A system with AS ABAP is required for central user administration. There, you operate the user management for all users in those systems of your landscape where you configured AS ABAP user management (that is, all systems with AS ABAP and all systems with both AS ABAP and AS Java that use AS ABAP user management).
- We recommend that you use a nonproduction system for central user administration. For example, you could use the SAP Solution Manager system or the central administration and monitoring system.
- A third-party directory server based on LDAP is only required for IT scenario variant *Integrated User and Access Management that Includes a Third-Party Directory Server*.

By default, not all user attributes are stored in a third-party directory server. Some attributes, notably locale and time zone, are stored in the database of the AS Java. You must ensure that this data remains consistent for all applications. For information about how to ensure this data is

6.19 Integrated User and Access Management

consistent, see the *SAP Library* [page 14] at ► *SAP NetWeaver Library* → *SAP NetWeaver by Key Capability* → *Security* → *Identity Management* → *Identity Management for System Landscapes* ◀

6.19.3 Implementation Sequence

Process

To install this IT scenario, perform the steps listed in the following table:

Step	Action [Corresponding Documentation]	Remarks
1	<p>Make sure that you have performed the preparatory steps:</p> <ul style="list-style-type: none"> ■ You have planned your <i>system landscape</i> [page 51] (you have decided how many systems you require, how you want to use each of these systems, and which standalone engines and clients you require). ■ With the help of your hardware partner, you have mapped your systems and standalone engines to correctly sized hosts. ■ You have planned and installed <i>shared services</i> [page 58]. 	
2	<p>Install a system with usage type EPC (includes the installation of AS Java). [<i>Installation Guide – SAP NetWeaver</i>]</p>	<ul style="list-style-type: none"> ■ If you already have an EPC system in your landscape, skip this step. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i>. For more information, see the <i>Installation Guide – SAP NetWeaver</i>.
3	<p>Install a system with usage type AS ABAP. [<i>Installation Guide – SAP NetWeaver</i>]</p>	<ul style="list-style-type: none"> ■ If you want to use an existing system, skip this step. ■ Make sure that you perform the configuration steps as described in the installation guide. For certain usage types, configuration tasks can be applied by the configuration wizard after you have installed your system and patched it for the first time. In addition, all required configuration steps for your IT

6.19 Integrated User and Access Management

Step	Action [Corresponding Documentation]	Remarks
		scenario are listed in SAP Solution Manager and in the <i>Technology Consultant's Guide</i> . For more information, see the <i>Installation Guide – SAP NetWeaver</i> .
4	Install the SAP GUI. [<i>Installation Guide – SAP Front End</i>]	
5	Install third-party tools: If not yet done, install an LDAP directory.	

A Appendix

A.1 List of Documentation

The following table contains a list of all documentation relevant for SAP NetWeaver 7.0 or referenced in this document and information where to find it.

Title	Location
Master Guide	
<i>Master Guide SAP NetWeaver 7.0</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Planning ◀
<i>Master Guide – SAP Solution Manager</i>	See SAP Service Marketplace at ► http://service.sap.com/instguides → SAP Components → SAP Solution Manager → Release 7.0 ◀
<i>Master Guide – SAP NetWeaver MDM</i>	See SAP Service Marketplace at ► http://service.sap.com/installmdm ◀
<i>Maintenance Planning Guide</i>	► http://service.sap.com/mopz → How To's and Guides ◀
Installation Guides	
<i>Installation Guide – SAP NetWeaver 7.0 <Technology> on <Operating System>: <Database></i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – SAP NetWeaver Systems → SAP NetWeaver <Release> - Installation Guides ◀
<i>Installation Guide - Gateway on <Operating System></i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Standalone Engines ◀
<i>Installation Guide – SAP Front End</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Clients ◀
<i>Installation Guide – SAP NetWeaver 7.0 TREX Single Host</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Standalone Engines ◀
<i>Installation Guide – SAP NetWeaver 7.0 TREX Multiple Hosts</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Standalone Engines ◀
<i>Installation Guide SAP NetWeaver Developer Studio</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Clients ◀
<i>Installation Guide – SAP NetWeaver Visual Composer</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Standalone Engines ◀
<i>Installation Guide – Application Sharing Server <OS>: <DB> – For SAP NetWeaver 7.0 including Enhancement Package 1 SR 1</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation – Standalone Engines ◀

A.1 List of Documentation

Title	Location
<i>Installation Guide KW 6.0</i>	See SAP Service Marketplace at ► http://service.sap.com/instguides → SAP Knowledge Warehouse → <Release> ◀
<i>Root Cause Analysis Installation and Upgrade Guide</i>	See SAP Service Marketplace at ► http://service.sap.com/diagnostics → Installation and Configuration ◀
<i>Planning Guide — System Landscape Directory</i>	See SAP Community Network at http://scn.sap.com/docs/DOC-8042
<i>Post-Installation Guide — System Landscape Directory</i>	See SAP Service Marketplace at ► http://service.sap.com/installnw70 → Configuration ◀
<i>Installation Guide — Adapter Engines for SAP NetWeaver</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation—Standalone Engines ◀
<i>Installation Guide — SAP NetWeaver '04</i>	See SAP Service Marketplace at ► http://service.sap.com/instguidesnw04 → Installation ◀
<i>Installation Guide — Adaptive Computing Controller</i>	See SAP Service Marketplace at ► http://service.sap.com/installnwpi71 ◀
<i>Installation Guide — Partner Connectivity Kit</i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation — Clients ◀
<i>SAP Central Process Scheduling Installation Guide</i>	See SAP Community Network at http://scn.sap.com/community/cps-by-redwood
<i>Installation Guide — Web Dispatcher on <Operating System></i>	See SAP Service Marketplace at ► http://service.sap.com/installNW70 → Installation—Standalone Engines ◀
<i>How to Install SAP Enhancement Package 2 for NetWeaver 7.0 — A Practical Guide</i>	See SAP Service Marketplace at ► http://service.sap.com/maintenancenw70 → Update EHP ◀
<i>Installation Guide — SAP Enhancement Package 1 for SAP NetWeaver 7.0 (Using SAINT/JSPM)</i>	See SAP Service Marketplace at ► http://service.sap.com/installnw70 → Installation SAP NetWeaver Systems → Enhancement Package Installation on Existing SAP Systems ◀
<i>Installation and Upgrade Guide - SAP NetWeaver Portal, Enterprise Workspaces 1.0</i>	See SAP Service Marketplace at ► http://service.sap.com/instguidesnw → SAP NetWeaver Portal, Enterprise Workspaces → Release 1.0 ◀
Configuration Guides	
<i>Technology Consultant's Guide</i>	SAP Help Portal at ► http://help.sap.com/nw70 → SAP NetWeaver 7.0 Library <Language> → Technology Consultant's Guide ◀
Upgrade Guides	
<i>Update Guide — Update of SAP Systems Using Software Update Manager <version></i>	► http://service.sap.com/sltoolset → Software Logistics Toolset 1.0 → SUM ◀
<i>Upgrade Guide — SAP NetWeaver 7.0 Application Server ABAP</i>	See SAP Service Marketplace at ► http://service.sap.com/upgradeNW70 → Upgrade SAP NetWeaver Systems → Upgrade Documentation—SAP NetWeaver <Release> ◀

A.1 List of Documentation

Title	Location
<i>Upgrade Guide — SAP NetWeaver 7.0 Business Intelligence</i>	See SAP Service Marketplace at ► http://service.sap.com/upgradeNW70 → Upgrade SAP NetWeaver Systems → Upgrade Documentation — SAP NetWeaver <Release> ◀
<i>Upgrade Guide — SAP NetWeaver 7.0 Java</i>	See SAP Service Marketplace at ► http://service.sap.com/upgradeNW70 → Upgrade SAP NetWeaver Systems → Upgrade Documentation — SAP NetWeaver <Release> ◀
<i>Upgrade Guide — TREX 6.1 to SAP NetWeaver 7.0 TREX</i>	See SAP Service Marketplace at ► http://service.sap.com/upgradeNW70 → Upgrade — Standalone Engines ◀
<i>Upgrade to SAP NetWeaver 7.0 Usage Type MI</i>	SAP Help Portal at ► http://help.sap.com/nw70 → SAP NetWeaver <Release> Library <Language> → Technology Consultant's Guide → Mobilizing Business Processes → Upgrade to SAP NetWeaver 7.0 Usage Type MI ◀
Maintenance	
<i>SAP Web Application Server Support Package Guide 630SP2 to 640SP4</i>	See SAP Service Marketplace at ► http://service.sap.com/instguides → SAP Components → SAP Web Application Server → Release 6.30 ◀
<i>Support Package Stack Guide — SAP NetWeaver 7.0: Stack <xx></i>	See SAP Service Marketplace at ► http://service.sap.com/NW04maintenance ◀
<i>Support Package Stack Guide — SAP NetWeaver 7.0: Stack <xx></i>	See SAP Service Marketplace at ► http://service.sap.com/maintenanceNW70 ◀

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