Master Guide
SAP NetWeaver® Composition Environment 7.2

Target Audience

- System administrators
- Technology consultants

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Disclaimer

Some components of this product are based on Java™. Any code change in these components may cause unpredictable and severe malfunctions and is therefore expressly prohibited, as is any decompilation of these components.

Any Java™ Source Code delivered with this product is only to be used by SAP's Support Services and may not be modified or altered in any way.

Documentation in the SAP Service Marketplace

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	■ Words or characters quoted from the screen. These include field labels, screen titles, pushbutton labels, menu names, and menu options. ■ Cross-references to other documentation or published works
`Example`	■ Output on the screen following a user action, for example, messages ■ Source code or syntax quoted directly from a program ■ File and directory names and their paths, names of variables and parameters, and names of installation, upgrade, and database tools
`EXAMPLE`	Technical names of system objects. These include report names, program names, transaction codes, database table names, and key concepts of a programming language when they are surrounded by body text, for example, `SELECT` and `INCLUDE`
`EXAMPLE`	Keys on the keyboard

 06/21/2010

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
1.0	9/14/2009	Version for beta 1 shipment of SAP NetWeaver Composition Environment 7.2
1.1	11/3/2009	Version for beta 2 shipment of SAP NetWeaver Composition Environment 7.2
1.2	12/14/2009	RTC version.
1.3	3/8/2010	Version for SAP NetWeaver CE 7.2 Support Package Stack 2.
1.31	3/9/2010	Small corrections and link to Technical Infrastructure Guide added.
1.32	6/21/2010	Version for SAP NetWeaver CE 7.2 Support Package Stack 3.

Table of Contents

1 About this Document

This Master Guide provides you with a central starting point for the technical implementation of SAP NetWeaver® Composition Environment 7.2.

Structure of the Master Guide

The Master Guide consists of the following sections:

- *Before You Start*

  Contains references to further information sources that might be important for your implementation project, to SAP Notes, and information on how to access the SAP Library.
- *Introduction*

  Gives you an introduction to SAP NetWeaver Composition Environment, explains the most important terms and outlines the major steps of the technical implementation.
- *Business Process Composition*

  This chapter describes the Business Process Composition capability that is realized by SAP NetWeaver Composition Environment. A list of mandatory and optional software units shows you what you need to install and provides essential information on setting up your system landscape for building composite applications.
- *Description of Software Units*

  Contains information about the installable software units, the functions they cover, and their dependencies to other software units.
- *Shared Services*

  This chapter describes systems that you normally only need once in your system landscape and that provide services centrally.
- *Designing Your System Landscape*

  This chapter outlines the main steps you need to take care of when you create a system landscape.
- *Implementation*

  This chapter contains information about the installation of the software units and refers you to the related installation guides.
- *Reference*

  Contains information about the overall documentation concept for SAP systems and a list of documents referenced in this guide.

> ⚠ Caution
>
> Make sure 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/installnwce72 → *1 — Planning* ◀.

Constraints

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

2 Before You Start

2.1 SAP Notes

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

List of Important SAP Notes

SAP Note Number	Title	Description
1380304	Release Restrictions for SAP NetWeaver Composition Environment 7.2	Some restrictions apply to the productive use of SAP NetWeaver Composition Environment 7.2. These are documented in this SAP Note.

2.2 Accessing the SAP Library

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

■ **SAP Help Portal** at ▌ http://help.sap.com/nwce72 ◄
  Select the required language.

  > Note
  > 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.

■ 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.

3 Introduction

Composite applications, or "composites," leverage existing IT investments by reusing existing services and data. SAP NetWeaver Composition Environment 7.2 provides a toolset and runtime for efficiently developing, running, and managing composite applications using SAP's SOA.It builds upon proven technologies that have been enhanced and integrated to provide greater functionality and flexibility. These technologies include:

- SAP NetWeaver Developer Studio for service creation and provisioning
- SAP NetWeaver Application Server Java based on the latest Java EE 5 technology
- Business Process Management and Business Rules Management to model processes and business rules
- Enterprise Services Repository & Registry for service provisioning and discovery
- SAP NetWeaver Visual Composer for UI modeling
- SAP Composite Application Framework for Java business object modeling and service abstraction
- A lightweight SAP NetWeaver Portal for a unified user experience and a single access point for end users

More information: ▶ http://sdn.sap.com/irj/sdn/nw-ce ↵

3.1 Key Terms for Understanding SAP NetWeaver Products

You can look at SAP NetWeaver products from different perspectives and each perspective uses its specific terms to describe the product. For example, the functional perspective focusses on the functional scope of the SAP NetWeaver product, whereas the operational viewpoint considers operation, administration, and support, and the deployment viewpoint takes installation and upgrade of the software into account. The key terms that describe SAP NetWeaver are described in the following:

- Market Category
  Grouping of capabilities from a market perspective
- Capability
  Capabilities in the context of SAP NetWeaver describe the functional scope of SAP NetWeaver as standalone integration platform and provide an agreed and simple reference to determine the structuring of SAP NetWeaver roll-out channels.
  The capabilities are depicted in the technology map available on SAP Developer Network at
  ▶ http://sdn.sap.com/irj/sdn/netweaver → *SAP NetWeaver at a Glance* ↵.

The technology map enables you to drill down from top-level market categories (for example, Application Lifecycle Management) to individual capabilities (for example, Administration, Monitoring, and so on).

■ Usage Type

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:

- Usage types consist of one or several functional units.
- They are a structuring element for SAP software on a technical level.
- Usage types are selectable installation units.
- 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.

■ Standalone Engine

Standalone engines of SAP NetWeaver are additional installable software units. They do not work as full-blown systems of SAP NetWeaver, but as standalone engines that provide a specific (server) function in combination with one or more SAP NetWeaver systems. Standalone engines are not part of a usage type. They do not run on AS ABAP or AS Java.

SAP Web Dispatcher is the only standalone engine delivered with SAP NetWeaver CE.

■ Client

Clients are additional installable programs or tools. They reside either on local front-end PCs accessed by users or on back-end systems where they act as client programs within an SAP NetWeaver system landscape.

■ Functional Units

Functional units represent the functional decomposition of SAP NetWeaver. Currently, the main focus of the functional unit structure is the technical configuration of the selected functions in a system landscape. Functional units are related to end-to-end use cases and capabilities. They are bundled in usage types as the installable unit. After the installation of a usage type, you select those functional units that you want to use in your system landscape.

The following figure shows the entities and their relationships:

Figure 1:
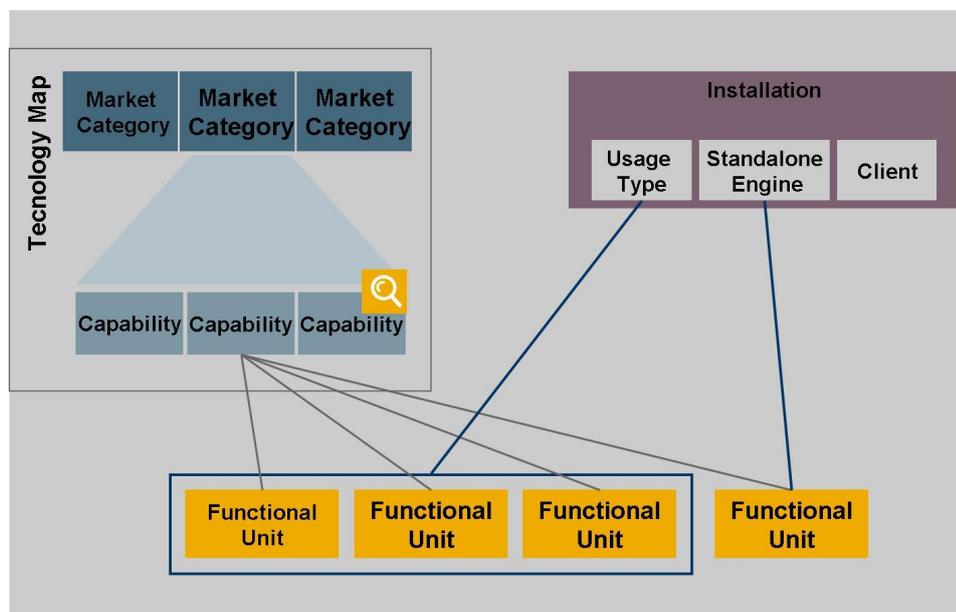
3.2 Planning and Implementation Steps – Overview

During an implementation project, you have to take into account many aspects and you have to take various decisions. The major steps of this process are outlined below and you can find detailed information in the referenced chapters. The subsequent chapters of this document are ordered according to this sequence.

Procedure

1. You determine the *functional scope* [page 17] that you want to implement and find out which functional units you require to implement the functions.
   For details about the software units, see *Description of Software Units* [page 27].
2. You decide about the system landscape, see *Planning Your Installation* [page 19].
3. You determine the required *shared services* [page 37] that you want to run in central systems in your system landscape and the landscape aspects relevant for their implementation.
4. You *install* [page 44] and *configure* [page 46] the software units of your SAP NetWeaver system landscape.

4 Business Process Composition

4.1 Overview

SAP NetWeaver CE is a platform specifically designed to enable application development on top of other solutions such as SAP ERP 6.0. Using the services that this solution provides, you can leverage all existing business logic and data while modeling new solutions to meet the specific requirements of your business.

Business process experts can model user processes that represent best-practice patterns with the help of the guided procedure tool within SAP NetWeaver Composition Environment. Then, developers can link process steps to underlying applications that are required to perform the end-to-end process. The result is a clearly defined process model that links the workflow, user interface, and content for each step of the process.

If you have an SAP NetWeaver 7.0 environment set up, you can also leverage other capabilities offered with it (more information: *Connecting to Back-End Systems* [page 24]).

4.2 Installable Software Units

The following table provides an overview of functional units that are required for Business Process Composition and maps them to the installable software units.

The installation of SAP NetWeaver CE comprises the installation of an Application Server Java (host) to be used as CE Server, SAP NetWeaver Developer Studio (one client or several clients), and additional usage types. For information about the software units, see *Description of Software Units* [page 27].

For information about the implementation, necessary documentation, and configuration, see *Implementation* [page 43].

Functional Units	Installable Software Units	Remark
■ Java Data Archiving ■ Java Foundation ■ Services Registry [optional] ■ System Landscape Directory [optional] ■ XML Data Archiving Service	AS Java (usage type)	
Adobe Document Services [optional]	Adobe Document Services (usage type)	Required for Adobe offline form usage

Functional Units	Installable Software Units	Remark
■ Process Server ■ Rules Server	Business Process Management and Business Rule Management (usage type)	
Composite Application Framework Runtime	Composite Application Framework (usage type)	
■ Composition Environment Platform ■ ECM integration core ■ ECM Integration Services ■ Visual Composer ■ EP Core ■ Universal Worklist	Composition Environment Platform (usage type)	
■ Design time for Composite Voice ■ Runtime for Composite Voice	Composition Voice (usage type)	
SAP NetWeaver Development Infrastructure [optional]	Development Infrastructure (usage type)	
Enterprise Services Repository [optional]	Enterprise Services Repository (usage type)	Install in separate system
n/a	Developer Workplace	Developer edition based on 32–bit including AS Java, Developer Studio and further selectable usage types.
n/a	SAP NetWeaver Developer Studio (client)	
Web Dispatcher	Web Dispatcher (standalone engine)	
n/a	SAP ES Explorer (client)	

If you already have a previous release of SAP NetWeaver CE installed then you can update your existing installation to SAP NetWeaver CE 7.2. Although the following usage types are not offered in an SAP NetWeaver CE 7.2 installation for the reasons below, customers who do an update can still continue to use them:

■ Guided Procedures (has been replaced by new technology)
■ NWDS Update Site (has been replaced by new technology)
■ Demo Applications (illustrate the usage of SAP NetWeaver CE for previous releases)

4.3 Planning Your Installation

You can set up SAP NetWeaver CE systems depending on the complexity of your development project and the hardware resources that are available to you. To explain the different installation options of SAP NetWeaver CE, we distinguish between the following general objectives for the setup:

■ **Installing the Developer Workplace**

The Developer Workplace consists of an installation of a 32-bit AS Java including additional usage types for the development of composite applications and SAP NetWeaver Developer Studio. This is the preferred option for developing composite applications that are not intended to be used productively, for example, you would simply like to learn more about the technologies of SAP NetWeaver CE, or for development that involves local testing before changes are published to a central 64-bit AS Java.

■ **Installing the SAP NetWeaver CE Development, Test, and Production Systems**

SAP recommends that you use a combination of development system, test system, and production system to develop, consolidate, test, and run your application productively. This is also the preferred option for developing a composite applicatioin in a team of developers.

Planning Your Developer Workplace Installation

The following graphic shows the installation options for individual development for non-productive development projects:

Figure 2: Developer Workplace Components
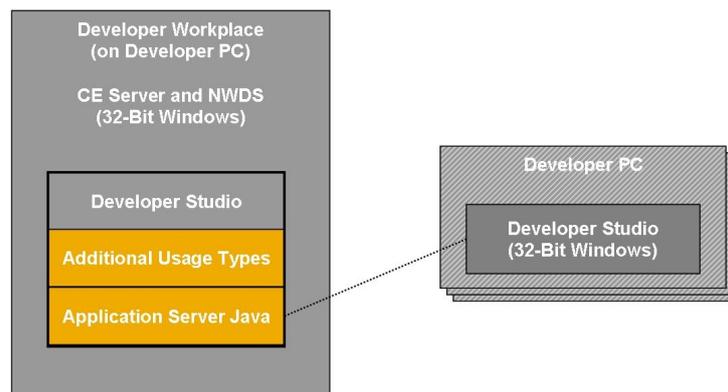
To implement a complete development environment on a single developer PC, set up a *developer workplace*.

■ You can install the Application Server Java (AS Java) in development mode together with SAP NetWeaver Developer Studio on a single host. Setting up the AS Java in development mode does not require specific infrastructure settings (such as setting up special users or shares) and saves hardware resources. It includes installation of a single server instance (with multiple server nodes

possible). You have to implement a developer workplace installation on Microsoft Windows 32-bit operating systems, since the Developer Studio is available only for this platform. You can install additional software units, see *Installable Software Units* [page 17].

■ Optionally, the SAP NetWeaver Developer Studio can be installed on additional developer PCs. However, if you intend to do team development for productive purposes SAP strongly recommends to install the CE server on a 64-bit operating system as described in the next chapter.

More Information

Installation [page 44]

Planning Your Installation of SAP NetWeaver CE Development, Test, and Production Systems

When using SAP NetWeaver CE for development projects aimed for productive use, SAP strongly recommends that you set up a system landscape consisting of the following systems:

■ **Development System and Test System**
Use this setup to use SAP NetWeaver CE for development and quality assurance.

■ **Production System**
Use this system setup to run your applications separately from your development and test landscape.

The system landscape supports consolidating and testing individual development and, as a consequence, is strongly recommended for team development projects.

The following graphic provides an overview of the recommended system landscape:

Figure 3:
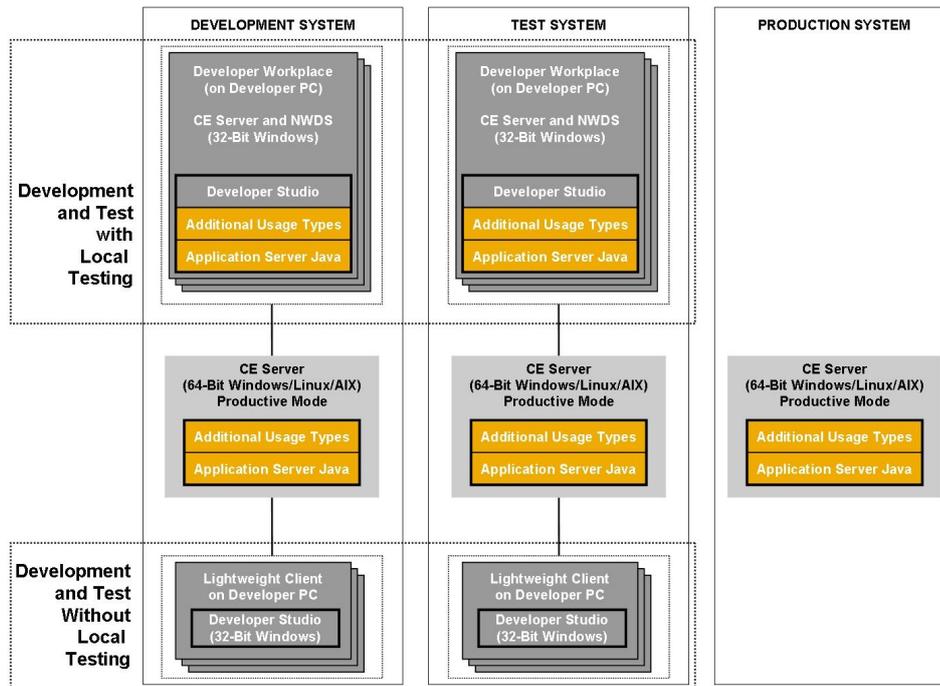
In a production system landscape, you have to install a central 64-bit CE server to address additional runtime requirements, such as clustering and higher default memory settings. Taking into account that valid tests for a 64-bit production system require a corresponding 64-bit system landscape and that team development requires more system resources on the CE server, we strongly recommend that you install a central 64-bit server for both the test system landscape and the development system landscape.

> **Note**
>
> The CE server distinguishes the following system modes: The 64-bit CE server can only run in productive mode, the 32-bit server can only run in development mode. During installation, a default configuration template is applied to the CE server, but you can also apply another template. Note that the names of configuration templates that contain `development` are designed for CE servers in development mode (32-bit) while template names that contain `production` are designed for CE servers in productive mode (64-bit). More information is given in the installation guides.

With respect to the installation of the development environment in each of these landscapes, you have the following options:

■ You install an *AS Java centrally* and *Developer Studio* instances on each developer host.

This option requires fewer hardware resources per developer host. In this landscape scenario you can set up an AS Java in development centrally and connect to it from the other hosts in the landscape using the Developer Studio.

■ You install an *AS Java centrally* and the *developer workplace* on each developer host
This option is recommended for large development projects with a need for local and central testing. Developers can test their developments locally using the developer workplace. For integration tests, they deploy their changes on the central AS Java.

> **Note**
>
> SAP recommends using the update site mirror to keep features of the Developer Studios up-to-date. With the Update Site Mirroring wizard included in the Developer Studio you can create a mirror of an update site on a local machine. You can use any HTTP server and even a file share as local update server.

Compared to the CE server in development mode, the central 64-bit version of the AS Java offers the following enhancements in production mode:

■ **Clustering**
You can scale your system both by installing additional application server instances and by adding more server nodes to each instance.
In a cluster environment, the installation creates additional SAP system users and shares. The `\sapmnt` share, which holds global and local (instance-specific) data, is available on the global server host. At server startup, all instances synchronize their binaries with the ones available on the global share. Local data for each individual instance is stored in the `\saploc` share on the relevant local host.

■ **Enhanced Security**
The number of unsuccessful user attempts to log on is limited to six. Once these attempts are exhausted, the user is locked. Password expiry is also enabled.

■ **Resource Consumption**
The focus is on the system runtime performance, so the default memory settings for certain Java Virtual Machine (JVM) parameters, such as permanent size and heap size, are higher than those for a development system. In addition, some design-time applications in the portal are disabled to save resources for those required for the runtime.

More Information

Installation [page 44]

4.4 System Landscapes including the Enterprise Services Repository

The following graphic shows the Enterprise Services Repository after its installation.

Figure 4: ES Repository Interacting with Other Functional Units of SAP NetWeaver CE
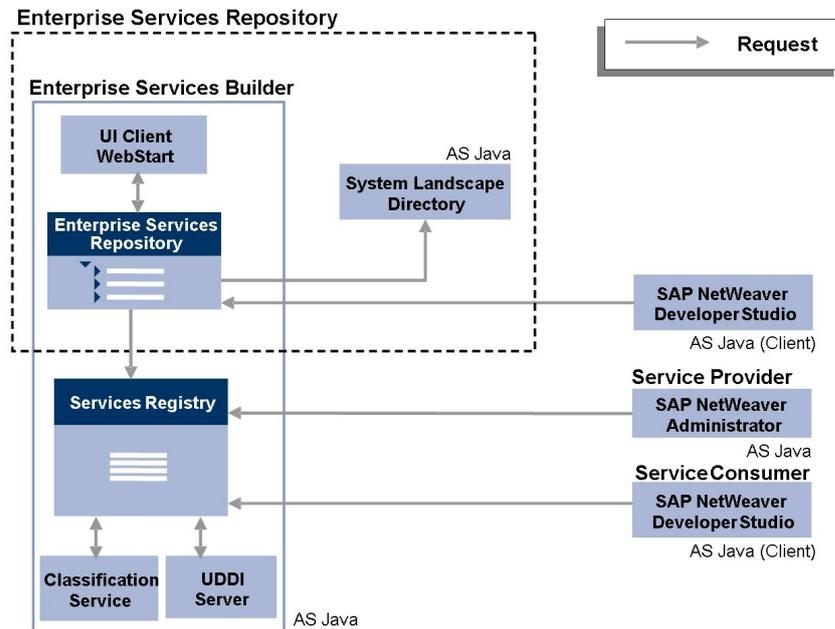
- As a prerequisite for using the ES Repository, the System Landscape Directory is needed where products and software components are maintained. You can create your own products and software component versions in the System Landscape Directory. Before the start of development, you need to import the required software component versions from the System Landscape Directory into the ES Repository.
- You access the ES Repository by means of the Enterprise Services Builder, a WebStart UI client.
- You can publish services to the Services Registry either after the definition and the release of a service interface by means of the service interface editor in the ES Builder or after the service configuration in SAP NetWeaver Administrator.
- To provide a service, you access the ES Repository with SAP NetWeaver Developer Studio to get the service interface definition and to implement the service. To consume a service point-to-point, you access the Services Registry using SAP NetWeaver CE tools, for example using SAP NetWeaver Developer Studio.

SAP recommends that you use the Enterprise Services Repository on the same AS Java as the Services Registry of SAP NetWeaver CE.

Note

The ES Repository is delivered as part of SAP NetWeaver CE and SAP NetWeaver Process Integration (SAP NetWeaver PI). If you have an SAP NetWeaver CE installation and an SAP NetWeaver PI installation in your system landscape, we strongly recommend that you maintain all your design objects in one ES Repository.

SAP NetWeaver PI has a tight coupling with ESR and requires configuration to connect to a given ES Repository. By default, PI connects to the default ESR delivered with SAP NetWeaver PI, while you can use any ESR in a SAP NetWeaver CE system landscape (delivered with SAP NetWeaver CE or SAP NetWeaver PI). We recommend to use the latest version of ESR in the landscape.

More information: ‣ http://help.sap.com → *SAP NetWeaver* → *SAP NetWeaver Composition Environment Library* → *Administrator's Guide* → *Configuration of SAP NetWeaver CE* → *Configuring Additional Components* → *Configuring Enterprise Services Repository* → *Setting Up a Central ESR for PI — CE Scenarios* ↵.

4.5 Connecting to Back-End Systems

With SAP NetWeaver CE you can integrate and use a back-end system in the following scenarios:

■ You access data residing on a back-end system.
  You can reuse existing data in the applications that you build on top of SAP NetWeaver CE. For example, if you wish to use data residing in an SAP ERP system, you can use the SOA capabilities (in SAP ERP 6.0 systems based on SAP NetWeaver 7.0 Support Package Stack 9 or higher) or you can connect using Remote Function Calls (RFC) to older systems using the Java Connector (JCo) that is offered as a part of SAP NetWeaver CE.

■ You use enterprise services on SAP or non-SAP back-ends.
  You can leverage the SOA capabilities of the SAP NetWeaver CE stack by consuming services provided by an SAP back-end system, such as SAP ERP 6.0 (on SAP NetWeaver 7.0 SPS9 or higher), or the ES Workplace that you can access using the SAP Developer Network (SDN). In addition, you can consume services from a third-party back-end system using the standard-based Web service capabilities of the stack. The SAP NetWeaver CE installation includes a Services Registry that enables you to browse the registered service definitions.

Figure 5: SAP NetWeaver CE and Back-End Systems
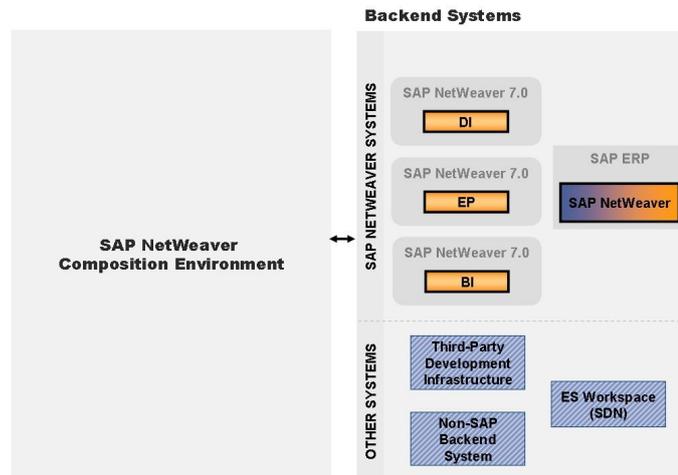
Integrating Applications into an SAP NetWeaver Portal

Once you create and run your applications on the SAP NetWeaver CE system, you can use the standard portal capabilities for integrating a Java application in an iView.

- For back-end connectivity to BI composite and SAP transaction iViews, use the portal system landscape or portal APIs only.
- To enable back-end connectivity for other application types, such as composite views and processes, use Remote Function Calls (RFCs) and Web services, configured in SAP NetWeaver Administrator (NWA).

More Information: ▌ http://help.sap.com → *SAP NetWeaver CE* → *SAP NetWeaver Composition Environment 7.2* → *SAP NetWeaver Composition Environment Library* → *Administrator's Guide* → *Additional Administration Tasks* → *Integrating Content into the NWCE Portal* ↩.

Optionally, once your applications are available in your local SAP NetWeaver CE system, you can enable their runtime access from a remote SAP NetWeaver 7.0 portal. You benefit by taking advantage of the advanced composition capabilities offered in SAP NetWeaver CE, while keeping your corporate portal in a stable and less frequently updated environment, ensuring a consistent end-user experience. To implement this scenario, do either of the following:

- Use the SAP Web Dynpro Java iView (Remote) template in the iView Wizard on the SAP NetWeaver 7.0 portal to integrate Web Dynpro Java applications running on the remote SAP NetWeaver CE system into local iViews.
  More Information: Refer to the *Creating Web Dynpro Java iViews* topic in the SAP NetWeaver 7.0 documentation on the SAP Help Portal at ▌ http://help.sap.com → *SAP NetWeaver 7.0* → *SAP NetWeaver Library* → *SAP NetWeaver by Key Capability* → *People Integration by Key Capability* → *Portal* → *Portal Administration Guide* → *Content Administration* → *iViews* → *Creating iViews* → *Creating Web Dynpro Java iViews* ↩
- Set up a federated portal network between the SAP NetWeaver CE portal and the SAP NetWeaver 7.0 portal. This allows you to share content between distributed portal installations, both SAP and

non-SAP; thus providing a single portal access point per user to portal information, services, and applications distributed on portals throughout the entire organizational network. Note that a portal running on SAP NetWeaver CE can function as a producer portal only; hence, consumer capabilities are not supported.

More Information: ▌ http://help.sap.com → *SAP NetWeaver CE* → *SAP NetWeaver Composition Environment 7.2* → *SAP NetWEaver Composition Environment Library* → *Administrator's Guide* → *Additional Administration Tasks* → *Running Content in a Remote Portal* ◄.

5 Description of Software Units

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

■ Systems that are configured for a specific purpose, as 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 from their local front-end PC 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 an overview of the software units:

Figure 6: Installable Software Units for SAP NetWeaver CE
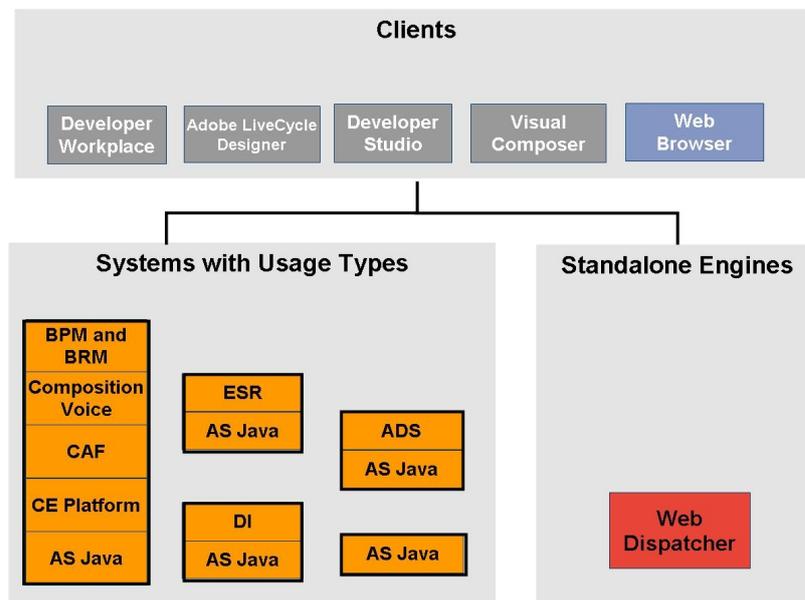
For this and other figures in this guide, the following legend applies:

Figure 7: Legend
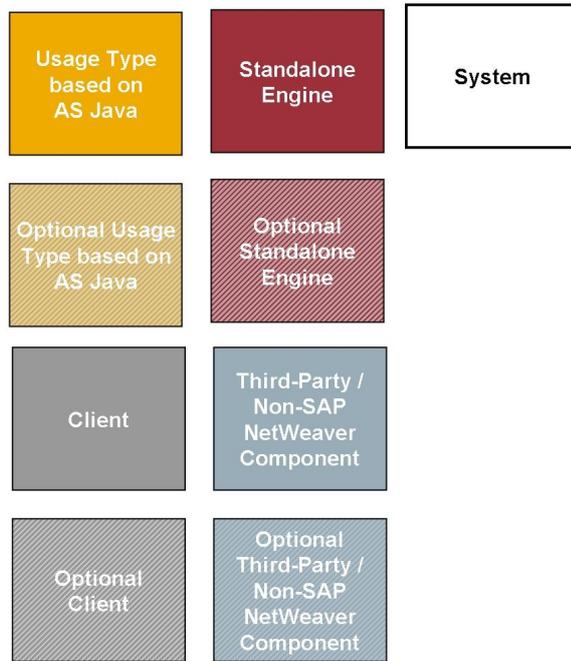
5.1 Systems with Usage Types

Application Server Java (AS Java)

AS Java is used to provide the Java foundation of SAP NetWeaver using the Java Engine, a Java EE-compliant application server for running enterprise applications. In addition to the pure Java EE standard technologies, the Java Engine implements complementary technologies, such as Web Dynpro or Web Services, that are targeted at supporting large-scale, real-business application development projects.

Dependencies

AS Java can be combined optionally with other Java-based usage types in one system.

Functional Units

Application Server Java comprises the following functional units:

Functional Unit	Description
Java Data Archiving	Java Data Archiving provides APIs to allow Java applications to connect to the XML Data Archiving Service for data archiving solutions. Java archiving is required for Java applications with a large volume of retention-relevant data.

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

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

Dependencies
Adobe document services depends on Application Server Java.

Functional Units
Adobe document services comprises the identically named functional unit.

Business Process Management and Business Rules Management

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

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

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

Dependencies

Business Process Management and Business Rule Management requires AS Java, Composition Environment Platform and Composition Applications in the same system.

Functional Units

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

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

Composite Application Framework

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

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

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

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

This environment that is based on a service-oriented architecture (SOA) enables developers to build applications that leverage the whole SAP NetWeaver technology platform without the need to use low-level APIs. That way, developers can focus on implementing the business logic of a composite application. As part of SAP NetWeaver CE 7.2, the Service Composer, a graphical modeling tool, provides service simplification and composition. This greatly eliminates the need to write code for simplification and data mapping.

Dependencies

Composite Application Framework requires Application Server Java in the same system.

Functional Units

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

Composition Environment Platform

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

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

Dependencies

Composition Environment Platform requires Application Server Java and Composite Application Framework in the same system.

Functional Units

Composition Environment Platform comprises the following functional units:

Functional Unit	Description
Composition Environment Platform	Composition Environment Platform is the foundation for building and running composite applications.
ECM integration core	Enterprise Content Management (ECM) Integration Core facilitates the provision and consumption of Enterprise Content Management services using standardized interfaces. Thus, it enables business applications to consume core ECM services provided by SAP as well as extended ECM services provided by partners and 3rd party vendors leveraging their ECM product offering. Besides the core runtime components this functional unit contains the service provider interface (SPI) for exposing ECM services as well as the application programming interface (API) for making use of these services.
ECM Integration Services	ECM Integration Services offer additional services on top of ECM Integration Core functional. These supplementary services like the server for World Wide Web Distributed Authoring and Versioning (WebDAV) can be leveraged by applications on top of the already exposed ECM services of the connected service providers.
Visual Composer	Visual Composer is a model-driven development tool used to create UI screens and Portal content using a drag-and-drop graphical environment, without the need to write code. Using Visual Composer you can create standalone applications such as form views and dashboards or UI screens, for example Web Dynpro screens. Visual Composer also provides Portal Content Modeling capabilities for generating Roles, Pages, iVews and other content for the SAP NetWeaver Portal.
EP Core	Provides basic SAP NetWeaver Portal capabilities
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.

Composition Voice

With Composite Voice you can design, develop and run interactive voice response (IVR) applications which can be accessed using telephones. Voice recognition and keypad input from telephone is used as input and recorded messages or computer generated speech (text to speech (TTS)) is used as output. Composite Voice provides system access to users with telephones at anytime from anywhere. Business transactions become easy to use with paperless transactions. It limits the dependency to

mobile devices, computers and internet access and helps businesses to reach users large scale while saving costs.

Dependencies

Composition Voice requires Application Server Java, Composition Environment Platform and Composition Applications in the same system.

Functional Units

Composition Voice comprises the following functional units:

Functional Unit	Description
Composite Voice Design Time	Design time for Composite Voice
Composite Voice Runtime	Runtime for Composite Voice

Development Infrastructure

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.

The following Java development scenarios define to what extent SAP NetWeaver Development Infrastructure (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. Optionally, it can be combined with other usage types in one system.
  You can run the development infrastructure on an AS Java separate from the rest of your runtime systems in the system landscape for a better scalability.
  If you use a development infrastructure, you have to install the Developer Studio feature *SAP NetWeaver Developer Studio Development Infrastructure Client*.
- Instead of installing a SAP NetWeaver CE 7.2 system with usage type DI, you also have the following options:
  - If you already use an existing SAP NetWeaver Development Infrastructure (NWDI) installed as a part of SAP NetWeaver 7.0 (at least Support Package stack 13), you can seamlessly integrate it with the SAP NetWeaver CE capabilities.

- Use a non-SAP development environment and connect to it using the Developer Studio in SAP NetWeaver CE. You have flexibility in your choice of a development and production infrastructure and use the CE development capabilities to implement your projects.

Functional Units

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

Enterprise Services Repository

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

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

Dependencies

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

Functional Units

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

Release Restrictions for Systems with Multiple Usage Types

- For the deployment of additional Java usage types to existing Java systems, we offer a procedure based on Java Support Package Manager (JSPM). However, manual configuration steps are required and 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 *Installation Guide - SAP NetWeaver Composition Environment 7.2 on <Platform>: <Database>*
- 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 it 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 support you in separating or merging systems with usage types:

Figure 8:
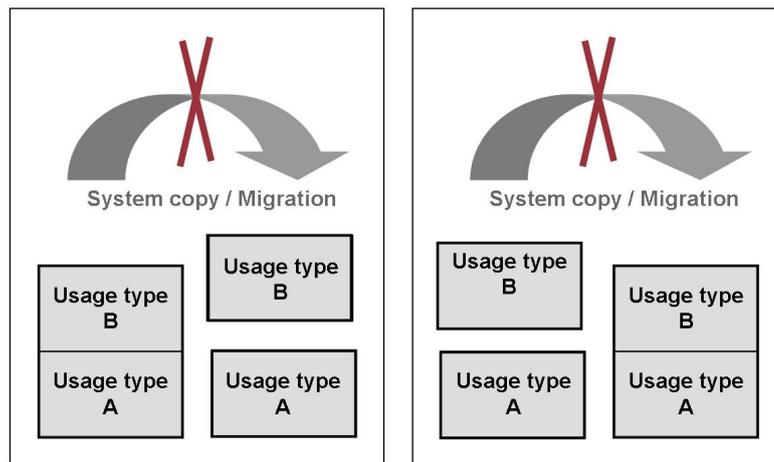
5.2 Standalone Engines

Web Dispatcher

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

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

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

Since Web Dispatcher is optional for every SAP system, it is not contained in the system landscape and the implementation sequence of the use case in this documentation.

For more information, see the *SAP Library* [page 11] at ▶ *Function Oriented View → Application Server Infrastructure → SAP Web Dispatcher* ↵.

5.3 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.

With SAP NetWeaver Composition Environment, you can use the front-end clients and tools described in the following:

SAP NetWeaver Developer Studio

The SAP NetWeaver Developer Studio is SAP's Integrated Development Environment (IDE) for Java and is based on the open-source tools framework Eclipse 3.3. With the SAP NetWeaver Developer Studio, you can develop Java EE 5 applications from scratch using the built-in support for new technologies such as EJB 3.0 and JSF 1.2.

For more information about the installation of SAP NetWeaver Developer Studio, see the *Installation Guide − SAP NetWeaver Composition Environment 7.2 − Developer Edition* available at
▶ http://service.sap.com/installnwce72 → *2 − Installing the Developer Workplace (32-Bit)*. ◀.

SAP Enterprise Services Explorer Tool for Microsoft .NET

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

To download the tool, access documentation and other resources, see
▶ https://www.sdn.sap.com/irj/sdn/dotnet → *Back-End Connectivity* ◀.

The installation guide is available at ▶ http://service.sap.com/installnwce72 → *4 - Installation - Other* ◀.

For the most up-to-date information about ES Explorer for .NET, see SAP note 1259258.

6 Shared Services

You normally run shared services on central systems in your system landscape. Areas which can be implemented as shared services are described in the following.

For examples for the overall system landscape for shared services, see the *Master Guide − SAP Solution Manager*, section *Reference System Landscapes*.

6.1 End-to-End Solution Operations

Operating business applications during their complete life-cycle is a challenge. Therefore, SAP has started 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.

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

6.2 Support Infrastructure

The support infrastructure provides SAP Support with safe access to your productive landscape for root cause analysis. SAP Solution Manager and End−to−End Root Cause Analysis in SAP Solution Manager form the support infrastructure required to run SAP NetWeaver.

SAP Solution Manager is the strategic application management and operations solution provided by SAP to enable the collaboration between you and SAP. End-to-End Root Cause Analysis 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. End-to-End Root Cause Analysis is fully integrated into SAP Solution Manager.

In addition, the following third-party tools are included in SAP Solution Manager:

■ CA Wily 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 *Master Guide for SAP Solution Manager*.

6.3 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).

SAP Solution Manager Work Centers

Almost all administration and monitoring tasks are covered by SAP Solution Manager work centers. This includes central administration and monitoring, IT reporting, and history and forecast analysis using CCMS , the alert monitor, and SAP NetWeaver BW. You can perform these tasks centrally from a single SAP Solution Manager system. For more information about the individual features and landscape aspects, see the *Master Guide for SAP Solution Manager*, scenario *System Monitoring*.

SAP Management Console and SAP Microsoft Management Console

You can make use of SAP Management Console (SAP MC) and SAP Microsoft Management Console (SAP MMC) to monitor and perform basic administration tasks on SAP systems.

SAP Solution Manager Work Centers are focussed on monitoring and managing large, static landscapes. In contrast, SAP MC and SAP MMC focus on small landscapes or systems that change frequently. In addition, SAP MC and SAP MMC are able to display a large amount of detailed data and are therefore suitable for experts.

SAP MMC runs on Windows and SAP MC is platform-independent. Among others, these tools provide the following features:

■ Monitor and control (start, stop, or restart) SAP systems (ABAP and Java) and its instances with a single tool

■ Display SAP log and trace files, start profiles, instance parameters, the system environment, SAP environment, and so on

■ Display and control Java and ABAP processes

■ Monitor system alerts

6.4 Collection of Landscape Data

Amongst other applications and services, the support infrastructure and the SAP NetWeaver administration tools rely on system landscape data.

Therefore, the System Landscape Directory (SLD) is mandatory. It automatically gathers landscape data which is then replicated to SAP Solution Manager.

The System Landscape Directory of SAP NetWeaver serves as a central information repository for your system landscape. A system landscape consists of hardware and software components that depend on each other with regard to installation, software updates, and demands on interfaces.

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 and SAP NetWeaver Process Integration.

■ 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 definition of products, their software components, and name reservation for development objects used in SAP NetWeaver usage type DI.

■ The SAP NetWeaver Process Integration uses the SLD to create and store information about business systems, which are based on technical system information.

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

The System Landscape Directory's topology can be set up according to the requirements in your landscape for SLD data. The options offer different levels of availability at the expense of low administration and operation effort. As a result, there is not one generic rule on how to set up the SLD in your system landscape. However SAP provides several recommendations according to different types of system landscapes.

For more information, see the *Planning Guide – System Landscape Directory* available in SAP Developers Network at http://sdn.sap.com/irj/sdn/nw-sld.

6.5 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, thereby contributing to TCO reduction.

After logging on to the portal where authentication takes place, all systems in the landscape – no matter if they are based on AS ABAP, AS Java, or both – can be accessed.

For more information, see the SAP Library at ▶ *Administrator's Guide → Security Guide → User Administration and Authentication* ◀.

6.6 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 so that you can 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 that 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 do not have a central user administration yet, you can, for example, realize it in the SAP Solution Manager system.

For more information, see the *SAP Library* [page 11] at ▶ *Administrator's Guide → Administration of SAP NetWeaver CE → Security and User Administration* ◀.

6.7 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. 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.

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. Adobe Document Services are based on AS Java.

In certain circumstances, you require a license for interactive forms. For more information, read SAP Note 750784.

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

Consider the following system landscape aspects for Adobe Document Services:

■ You can use ADS as a local installation or as a shared service on a central SAP NetWeaver AS Java. For example, you can set up ADS in your central application portal. For high-volume printing of Adobe forms, deploy ADS in a dedicated system. For more information about distribution options, see ▶ https://www.sdn.sap.com/irj/sdn/landscapedesign → *Distribution Models* ◀

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

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

■ Adobe document services currently do not run on all platforms supported by SAP NetWeaver. For more information, see SAP Note 925741.

■ For the installation of Adobe LiveCycle Designer, see SAP Note 1359778.

■ For information about sizing, see the *Sizing Guide for Adobe document services* on SAP Service Marketplace at ▶ http://service.sap.com/sizing → *Sizing Guidelines* → *Solutions & Platform* ◀.

For more information about the prerequisites for the development of SAP Interactive Forms by Adobe, see the information on SAP Developer Network at ▶ http://sdn.sap.com/irj/sdn/adobe → *Installation and Configuration* ◀.

7 Implementation

7.1 Updating an Existing Installation

If you have an installation of SAP NetWeaver CE of one of the following releases that already exists, you can update your SAP NetWeaver CE system instead of reinstalling it:

Source Release	Update to Target Release
SAP NetWeaver Composition Environment 7.1	SAP NetWeaver Composition Environment 7.2
SAP NetWeaver Composition Environment 7.1 including Enhancement Package 1	SAP NetWeaver Composition Environment 7.2

After you have updated your system to SAP NetWeaver CE 7.2 it is recommended to bring your SAP NetWeaver CE system to the latest Support Package Stack.

Recommendations for the Update

With previous releases you could install component *NWDS Update Site* that was used to mirror the SAP update site and to speed up the local installation of SAP NetWeaver Developer Studio features. However, this component can only be installed on a 32-bit AS Java of the Developer Workplace. As of SAP NetWeaver Composition Environment 7.2, SAP recommends that you use the Update Site Mirroring wizard of the SAP NetWeaver Developer Studio instead to overcome this restriction. With the wizard you can create a mirror of an update site on a local machine. So instead of using the NWDS update site on an AS Java, you can now use any HTTP server and even a file share as local update server.

Procedure

Task	Documentation
How to update SAP NetWeaver CE 7.1 or SAP NetWeaver CE 7.1 including Enhancement Package 1 to SAP NetWeaver CE 7.2	*Update Guide — SAP NetWeaver Composition Environment 7.2* available at ▷ http://service.sap.com/instguidesnwce72 → *Update* ↵
How to update SAP NetWeaver CE 7.2 SP01 to a higher Support Package Stack.	*Support Package Stack Guide — SAP NetWeaver Composition Environment 7.2* available at ▷ http://service.sap.com/maintenancenwce72 ↵
How to update the SAP NetWeaver Developer Studio of a previous release to the one delivered with SAP NetWeaver CE 7.2.	*Installation and Update Guide — SAP NetWeaver Developer Studio 7.2* available at ▷ http://service.sap.com/installnwce72 → *2 - Installing the Developer Workplace (32-Bit)* ↵

💡 Note

Information on SAP NetWeaver CE Support Packages is available at

▶ http://service.sap.com/sp-stacks → -> *SP Stack Information* ◀ (select SAP NetWeaver CE 7.2).

7.2 Installation

Prerequisites

Make sure that you have performed the preparatory steps:

- You have planned your system landscape (how you want to distribute required usage types and standalone engines of SAP NetWeaver to SAP systems).
  More information: *Planning Your Installation* [page 19]
- With the help of your hardware partner, you have mapped your systems and standalone engines to correctly-sized hosts.
  More information:

Documentation	
Content	**Relevance**
Product Availability Matrix (PAM) available at ▶ http://service.sap.com/pam ◀	
Information about supported platforms (operating systems, databases, browsers) for all SAP NetWeaver CE components	Relevant for Developer Workplace installation and for the Installation of SAP NetWeaver CE Development, Test, and Production Systems
Sizing Guide available at ▶ http://service.sap.com/sizing ◀	
Information about required network bandwidth, physical memory, CPU power, and I/O capacity for a SAP NetWeaver CE system.	Relevant for Installation of SAP NetWeaver CE Development, Test, and Production Systems
Technical Infrastructure Guide available at https://cw.sdn.sap.com/cw/community/docupedia/tig	
Information about how you can distribute the building blocks of SAP systems based on SAP NetWeaver application server 7.0 and higher on physical hosts, to provide stability, performance and scalability for productive systems.	Relevant for Installation of SAP NetWeaver CE Development, Test, and Production Systems

- You have planned and installed shared services.

Installing the Developer Workplace

Task	Documentation
Install a developer workplace including a 32-bit Application Server Java and the SAP NetWeaver Developer Studio on your developer PC.	*Installation Guide – SAP NetWeaver Composition Environment 7.2 – Developer Edition* available at ▶ http://service.sap.com/installnwce72 → *2 – Installing the Developer Workplace (32-Bit)* ↵

Next Steps

1. Proceed with the configuration of your SAP NetWeaver CE system.
   More information: *Configuration of SAP NetWeaver System Landscapes* [page 46]
2. Familiarize yourself with SAP NetWeaver CE using the guidelines on how to develop applications with SAP NetWeaver CE.
   More information: *Developer's Guide* available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2* → *Development* → *Developer's Guide in SAP Library* ↵

Installing SAP NetWeaver CE Development, Test, and Production Systems

Task	Documentation
Install and configure a 64-bit Application Server Java. There are dedicated versions for each operating system/database combination available.	*Installation Guides – SAP NetWeaver Composition Environment 7.2 – Productive Editions* available at ▶ http://service.sap.com/installnwce72 → *3 – Installing the CE Server (64-Bit)* ↵.
We recommend that you perform a system copy to create test, demo, or training systems.	▶ http://service.sap.com/installnwce72 → *3 – Installing the CE Server (64-Bit)* → *System Copy Guide* ↵

Next Steps

1. Organize the installation of the Integrated Development Environment of SAP NetWeaver CE for your developers in your system landscape.
   More information: See section *Installing the Developer Workplace* in this chapter.
2. Proceed with the configuration of your SAP NetWeaver CE system for your CE servers.
   More information: *Configuration of SAP NetWeaver System Landscapes* [page 46]
3. Familiarize yourself with SAP NetWeaver CE administration.
   More information: Administrator's Guide available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2* → *System Administration* ↵.

Additional Installation Options

Installable Software Unit	Documentation
Web Dispatcher (Standalone Engine)	*Installation Guide – Web Dispatcher on <Operating System>*

Clients	Documentation
Adobe LiveCycle Designer	SAP Note 1359778
SAP NetWeaver Developer Studio	*Installation and Update Guide – SAP NetWeaver Developer Studio 7.2* available at ▶ http://service.sap.com/installnwce72 → *2 - Installing the Developer Workplace (32-Bit)* ↵
SAP Enterprise Services Explorer Tool for Microsoft .NET	*Installation and Configuration - SAP ES Explorer for MS .NET*

7.3 Configuration of Systems

Before you can start working with your SAP NetWeaver installation, you have to adapt it to your needs. The following list provides an overview of the configuration information available and in which order you have to proceed:

1. After the installation of your SAP NetWeaver system or standalone engine, you see the post-installation section of the installation guide and perform the basic technical configuration described there.

2. You enable the functional units that you need for realizing a specific SAP NetWeaver capability by selecting them in the functional unit configuration tool. You can access the functional unit configuration tool from the configuration wizard.
   If there are automated configuration tasks for the selected functional units, the tool executes these configurations tasks. Dependencies between functional units are considered automatically by the configuration tool. That is, if you select a functional unit that depends on an other functional unit, this functional unit is automatically selected.
   More information: ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2* → *Installation and Configuration* → *Configuration of SAP NetWeaver CE* ↵

3. You use your SAP Solution Manager system to display a complete list of all configuration tasks. It contains configuration steps for those functional units that cannot be configured automatically, as well as optional and additional configuration tasks. In addition, any cross-system configuration tasks, for example for the configuration of a specific use case, are accessible here.
   To access the configuration tasks, you create a project and a project structure in SAP Solution Manager and either refer to capability ▶ *SAP NetWeaver CE → Business Process Management → Business Process Composition* ↵ or the end-to-end use case ▶ *SAP Technology → End-To-End Use Cases → Building Composite Applications* ↵ as a scenario for your project. In the configuration phase, you select configuration structures with pre-delivered SAP content for your project. You can find the following different types of configuration tasks in SAP Solution Manager:
   - Mandatory configuration tasks: All configuration tasks that are mandatory for the standalone engine or usage type.

■ Optional configuration tasks: Configuration tasks for areas where you need to decide if you want to use these functions (for example, high availability or security settings).

■ Additional functional units – configuration tasks: Configuration tasks for functional units that are used in specific use cases only.

A marked checkbox in front of the configuration tasks indicates those configuration tasks that are relevant for the use case or capability you have chosen.

To be able to use SAP Solution Manager for the configuration tasks, you have to import the latest SAP Solution Manager Implementation Content (Add-On ST-ICO) that is available for your SAP Solution Manager release. 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* ◀.

A Appendix

A.1 References

SAP Documentation Types for SAP NetWeaver CE

Figure 9: Overview
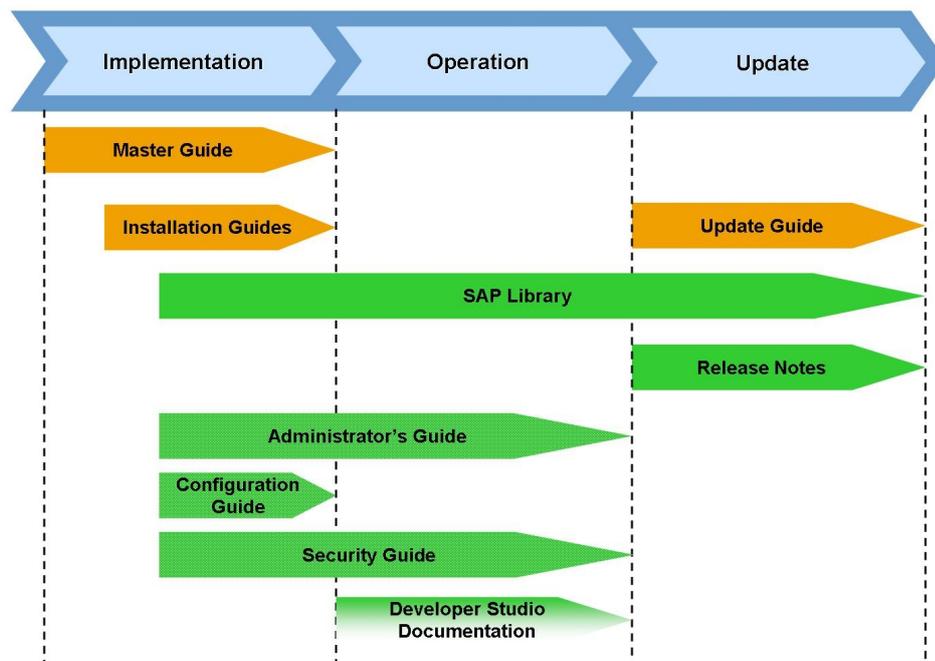
Planning, Installing, and Updating SAP NetWeaver CE

Documentation	Target Groups and Contents
Master Guide − SAP NetWeaver Composition Environment 7.2 available at ▷ http://service.sap.com/installnwce72 → *1 − Planning* ↵	■ System administrators ■ Technology consultants The Master Guide is the starting point for implementing an SAP solution.
Installation Guide − SAP NetWeaver Composition Environment 7.2 − Developer Edition available at ▷ http://service.sap.com/installnwce72 → *2 − Installing the Developer Workplace (32-Bit)* ↵	■ Developers ■ Technology consultants How to install a developer workplace including a 32-bit Application Server Java and the SAP NetWeaver Developer Studio on your developer PC.

Documentation	Target Groups and Contents
Installation Guides — SAP NetWeaver Composition Environment 7.2 — Productive Editions available at ▶ http://service.sap.com/installnwce72 → *3 — Installing the CE Server (64-Bit)* ↵.	■ System administrators ■ Technology consultants How to install and configure a 64-bit Application Server Java. There are dedicated versions for each OS/DB combination available.
▶ http://service.sap.com/installnwce72 → *3 — Installing the CE Server (64-Bit)* → *System Copy Guide* ↵	■ System administrators ■ Technology consultants How to copy an SAP NetWeaver CE system, for example, to set up a system landscape consisting of development system, test system, and production system.
Installation Guide — Web Dispatcher on <Operating System> available at ▶ http://service.sap.com/installnwce72 → *4 — Installation — Other* ↵	■ System administrators ■ Technology consultants Installation of the Web Dispatcher — for each OS family, a dedicated guide version is available.
SAP Note 1359778	■ System administrators ■ Technology consultants Installation instructions for the Adobe LifeCycle Designer.
Installation and Configuration - SAP ES Explorer for MS .NET available at ▶ http://service.sap.com/installnwce72 → *4 — Installation — Other* ↵	■ System administrators ■ Technology consultants Installation instructions for the Enterprise Services Explorer.
Master Guide — SAP Solution Manager available at ▶ http://service.sap.com/instguides → *SAP Components* → *SAP Solution Manager* → *<Release>* ↵	■ System administrators ■ Technology consultants Central starting point for the technical implementation of SAP Solution Manager
Planning Guide — System Landscape Directory available at ▶ http://sdn.sap.com/irj/sdn/nw-sld* ↵	■ System administrators ■ Technology consultants Starting point for the planning of your landscape strategy for the system landscape directory of SAP NetWeaver
Update Guide — SAP NetWeaver Composition Environment 7.2 available at ▶ http://service.sap.com/instguidesnwce72 → *Update* ↵	■ System administrators ■ Technology consultants Information about updating an existing SAP NetWeaver CE installation to SAP NetWeaver CE 7.2.

Documentation	Target Groups and Contents
Support Package Stack Guide — SAP NetWeaver Composition Environment 7.2 available at ▶ http://service.sap.com/maintenancenwce72 ◀	■ System administrators ■ Technology consultants Information about updating SAP NetWeaver CE 7.2 to a higher Support Package Stack.
Installation and Update Guide — SAP NetWeaver Developer Studio 7.2 available at ▶ http://service.sap.com/installnwce72 → *2 - Installing the Developer Workplace (32-Bit)* ◀	■ System administrators ■ Technology consultants Information about updating the SAP NetWeaver Developer Studio of a previous release to the one delivered with SAP NetWeaver CE 7.2.

SAP Library Documentation

Documentation	Target Groups and Contents
Release notes available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2 → What's New — Release Notes* ◀	■ Technology Consultants ■ Developers ■ Administrators Release notes are documents that contain short descriptions of new features or changes in an SAP component since the previous release.
Configuration guide available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2 → Installation and Configuartion → Configuration of SAP NetWeaver CE* ◀	■ Technology consultants ■ Administrators How to configure SAP NetWeaver CE after installation.
Administrator's Guide available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2 → System Administration → Administration of SAPNetWeaver CE* ◀	■ Administrators Guidelines and detailed information for administration of SAP NetWeaver CE.
Developer's Guide available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2 → Development → Developer's Guide in SAP Library* ◀	■ Developers Guidelines and detailed information on how to develop applications with SAP NetWeaver CE.
Security Guide available at ▶ http://help.sap.com/nwce72/ → *SAP NetWeaver Composition Environment 7.2 → System Administration → Security Guide* ◀	■ Technology consultants ■ Administrators ■ Developers Make your SAP NetWeaver CE implementation as secure as possible using these guidelines.
SAP NetWeaver Developer Studio Documentation available ▶ *Help → Help Contents* ◀ in the SAP NetWeaver Developer Studio.	■ Developers Developer's guide tailored to the installed top-level features of the SAP NetWeaver Developer Studio.