Master Guide / Installation Guide

Master Guide – SAP NetWeaver Composition Environment 7.1 SP1

Planning and Performing SAP NetWeaver CE Installation and Update

Target Audience

- System administrators
- Technology consultants

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Document History

Version	Date	Description
1.00	7/20/2007	SP1

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1 Introduction

This document explains how to plan, install and update an SAP NetWeaver Composition Environment system.

For more information about SAP NetWeaver Composition Environment, see SAP Developer Network at ▶ http://sdn.sap.com ▶ *SAP NetWeaver* ▶ *Composition Environment* ◀.

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2 Planning the SAP NetWeaver CE Environment

2.1 Introduction

Overview

SAP NetWeaver Composition Environment is a platform for building and running applications based on Service-Oriented Architecture (SOA) principles. It offers a set of capabilities for integrating new and existing services (from SAP as well as proprietary services), into business-specific solutions. You can develop portable, standard-compliant applications based on the latest Java Enterprise Edition (Java EE) 5 technologies and integrate them in existing SAP and third-party solutions using a central enterprise service registry. SAP NetWeaver CE increases development productivity by providing model-driven composition tools for creating services and user interfaces and orchestrating them into collaborative user-centric workflows.

Enabling SOA

To enable SOA development, SAP NetWeaver CE provides the following key capabilities:

- **A lean and robust application server based on the latest Java EE 5 technology**
  With the Java EE 5 certified application server that SAP provides, you can develop Java EE applications based on the latest Java EE standard as well as migrate existing JEE applications. The application server offers full support of the latest Java EE 5 features, updates, and adjustments for simplifying the development of enterprise applications such as EJB 3.0, the new JSF 1.2, the new Java Persistency API 1.0, the updated Web services stack, among others. It provides an implementation of the Service Data Objects (SDO) 2.1 standard simplifying data programming for applications and frameworks, support for development of standard-based portlets, and a job scheduler implementation. With the Java Connector Architecture (JCA) 1.5 and full Java EE 5 Web Services support, it enables connectivity to SAP and non-SAP backends and services.
  In addition to being standard-based, the application server in SAP NetWeaver CE comprises features for ensuring its robustness, scalability, and supportability such as configurable session failover support, built-in load balancing support, fast and robust shared memory based on request handling, and robust monitoring and unique supportability of non-functional problems based on SAP's own Java VM features.
- **An integrated environment for Java application development**
  The SAP NetWeaver Developer Studio is SAP's Integrated Development Environment (IDE) for Java and is based on the open-source tools framework Eclipse 3.2. 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. In addition, the integration with the service registry in SAP NetWeaver CE enables you to browse and consume services in the applications you create.

■ **Model-driven tools for increased development productivity**

SAP NetWeaver CE provides a set of model-driven tools for creating user interfaces and composing services that simplify development and increase productivity significantly.

With Visual Composer you can model transactional and analytical user interfaces that can easily be integrated into the user interaction layer of a composite. The tool offers a graphical interface that is suitable for business users as well.

Using Web Dynpro in SAP NetWeaver CE, you can build complex user interfaces and data-driven applications while benefiting from graphical tools and code generation that speeds up the development process. Web Dynpro clearly separates business and display logic, and allows user interaction with back-end systems using enterprise services.

The Composite Application Framework (CAF) design time integrated into the SAP NetWeaver Developer Studio enables model-driven development of composite applications on top of existing enterprise services.

■ **Service orchestration into user-centric collaborative workflows by means of reusable building blocks**

The services and applications that you create are typically transactional and apply to certain use cases. You can add more flexibility and innovation to your solutions by integrating them into collaborative workflows that address enterprise-specific business processes. SAP NetWeaver CE provides Guided Procedures as a framework for designing and running user-centric lightweight processes. It enables you to create reusable workflow building blocks that can be integrated in multiple custom solutions.

■ **UDDI-based service registry for service provisioning and discovery**

To enable end-to-end SOA development, SAP NetWeaver CE offers a UDDI v3-based service registry where providers can publish service endpoints, definitions and associated metadata, and consumers can discover the appropriate services for their scenarios. The registry provides capabilities for classifying and browsing services using semantic-rich classification systems.

■ **User interaction by a lightweight portal**

All Java and composite applications that you develop on top of SAP NetWeaver CE can be integrated and made available in the lightweight portal provided with the stack. It offers a unified user experience and a single access point for end users.

Figure 1: Capabilities of the SAP NetWeaver CE
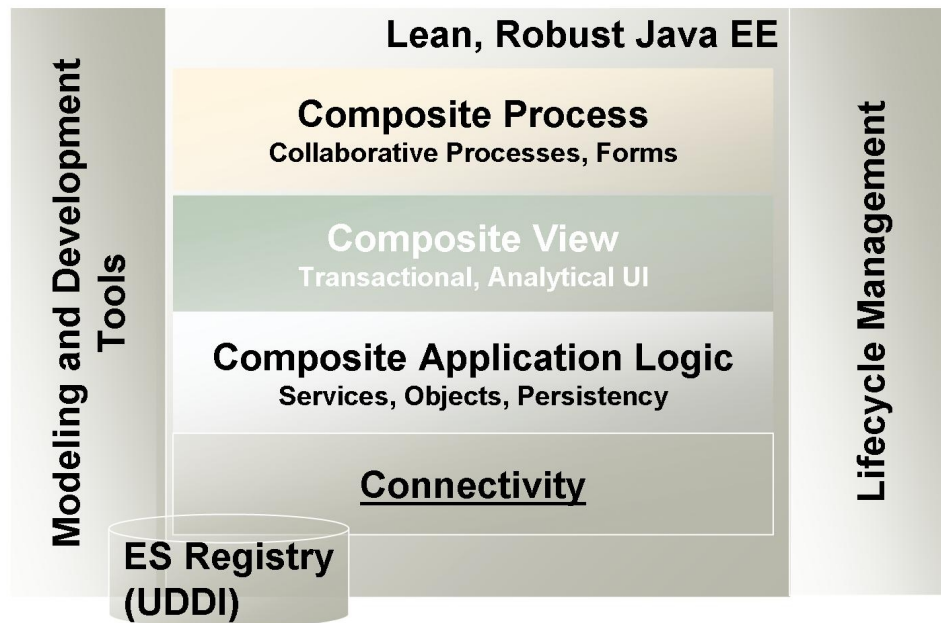
Interoperability with SAP Products

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.

If you have an SAP NetWeaver 7.0 environment set up, you can also leverage other capabilities offered with it. You can connect to an SAP NetWeaver Developer Infrastructure (NWDI) and utilize it for the lifecycle management of the applications you build on SAP NetWeaver CE.

2.2 System Landscape

2.2.1 Planning Your Landscape

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

1. You determine the IT scenarios of SAP NetWeaver CE that you want to implement.
2. You determine which installation options are required for these IT scenarios.
3. You determine your system landscape; that is, you decide how many systems you require and how you want to use each of these systems.

4. Considering the hardware requirements, you map the required SAP NetWeaver CE systems to hosts.
5. You implement your SAP NetWeaver CE system landscape.

2.2.2 Use Cases

You can set up your SAP NetWeaver CE differently according to the use case you wish to enable. For example, to implement a landscape for development, testing, or production purposes, you need to fulfill different requirements and the system landscape is specific to each of these cases.
The following graphic provides an overview of possible SAP NetWeaver CE system landscapes.

Figure 2: An Overview of SAP NetWeaver CE System Landscape Options
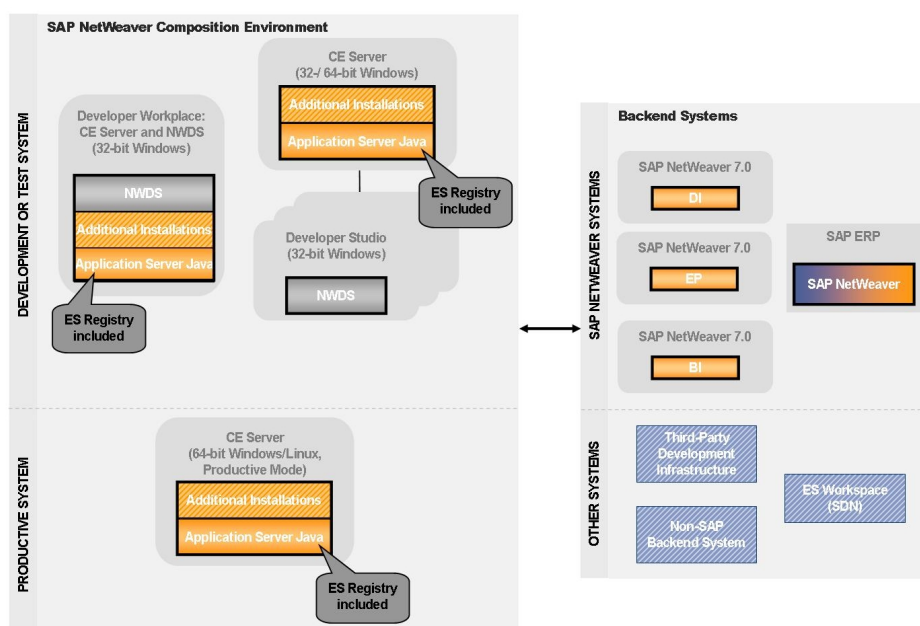
You can install the SAP NetWeaver CE system in the following modes:

- Development mode
- Productive mode

> 💡 Note
>
> For more information about the differences between development mode and productive mode, see ▶ http://help.sap.com/nwce ▶ *SAP NetWeaver Library* ▶ *Administrator's Guide* ▶ *SAP NetWeaver Security Guide* ▶ *SAP NetWeaver CE Security Guide* ▶ *Security Guides for CE Core Components* ▶ *SAP NetWeaver Application Server Java Security Guide* ▶ *Other Security Relevant Information* ▶ *Differences Between Development Mode and Productive Mode* ↵.

In the sections below you can find information about the landscape options that are available for each installation type.

Installing SAP NetWeaver CE in Development Mode

To implement a development system, you have the following options:

■ You set up a *developer workplace* on each host.
You can install the Application Server Java (AS Java) in development mode together with the SAP NetWeaver Developer Studio on a single workstation.
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 the installation of a single server instance (with multiple server nodes possible).
While you can install an AS Java in development mode on both Windows 32-bit and Windows 64-bit operating systems, the Developer Studio installation is available only for the 32-bit platform. Therefore, you can implement a developer workplace installation on Windows 32-bit operating systems only.
■ You install an *AS Java centrally* and *standalone Developer Studio* instances on each developer host.
This option offers better scalability and requires fewer hardware resources per developer host. In this landscape scenario you can set up an AS Java in development mode centrally (on a 64-bit Windows or Linux operating system) and connect to it from the other hosts in the landscape using the Developer Studio.

For each option, you can install one or more additional installation options (that is, Composition Platform, Adobe Document Services, or Voice) on top of the application server.
These options can also be used for setting up a testing environment.

Installing SAP NetWeaver CE in Productive Mode

Installing the AS Java in productive mode offers the following enhanced capabilities as compared to a development mode installation:

■ 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 additional SAP system users and shares are created during installation. 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
With AS Java running in productive mode, the number of unsuccessful user attempts to log on is limited to six. Afterwards the user is locked. In addition, password expiry is enabled.
■ Resource consumption

Since for productive mode focus is places on system runtime performance, the default memory settings for certain Java Virtual Machine (JVM) parameters such as permanent size and heap size, are higher than those for a system installed in development mode.

To implement a production SAP NetWeaver CE system, you install an AS Java server in productive mode on a 64-bit Windows operating system. This allows you to scale by clustering and to leverage the enhanced capabilities outlined above.

Using a Development Infrastructure

For team development and version control, you can use a development infrastructure together with your SAP NetWeaver CE systems. SAP NetWeaver CE supports the following scenarios:

■ You use an existing SAP NetWeaver Development Infrastructure (NWDI) installed as a part of SAP NetWeaver 7.0. Using NWDI ensures seamless integration with the SAP NetWeaver CE capabilities.
■ You use a non-SAP development environment and connect to it using the Developer Studio in SAP NetWeaver CE. You are flexible to choose a development and production infrastructure of your preference and to use the CE development capabilities to implement your projects.

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 enterprise SOA capabilities (in SAP ERP 6.0 systems based on SAP NetWeaver 7.0 Support Package Stack 9 or higher) or you can connect via 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 an SAP or non-SAP backend.
   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 Workspace that you can access via 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 an ES Registry that enables you to browse the registered service definitions.
■ You integrate your applications into an SAP NetWeaver Portal.
   Once you have created your applications in the SAP NetWeaver CE system, you can integrate them into the portal as content objects (iViews and pages). To enable backend connectivity to applications, such as composite views and processes, you can configure Remote Function Calls (RFCs) and Web services in the SAP NetWeaver Administrator (NWA). However, to set up backend connectivity to BI composite and SAP transaction iViews, use instead the portal system landscape or portal APIs.
   Optionally, you can integrate your remote composite applications into an existing SAP NetWeaver 7.0 portal by using the federated portal network (FPN) capabilities offered by SAP NetWeaver. FPN

allows one portal (the producer) to share its content with another portal (the consumer); the producer is the runtime execution base of the applications being shared. For example, you can perform remote role assignment of users from the SAP NetWeaver 7.0 portal to roles, which have composite applications integrated into them, on the SAP NetWeaver 7.1 portal.

■ You can use tools from the SAP NetWeaver Business Intelligence system in your Visual Composer applications.

The following table summarizes the requirements for the SAP NetWeaver back-end systems that you need to meet to use the above integration aspects.

Backend Integration Aspect	Minimal Backend SPS Level
NWDI Integration	SAP NetWeaver 7.0 SPS05
ABAP-Based Web Service Publication in the Services Registry	SAP NetWeaver 7.0 SPS09 (as ABAP-based Web services provider)
Remote Role Assignment in a Federated Portal Network	SAP NetWeaver 7.0 SPS11 (as a consumer)
Business Intelligence Integration	SAP NetWeaver 7.0 SPS11

2.3 IT Scenarios in SAP NetWeaver CE

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. IT scenarios supported by SAP NetWeaver CE demonstrate the capabilities of the technology platform and help customers, partners, and ISVs to install and operate SAP NetWeaver CE to build and run business applications. SAP NetWeaver CE focuses on the following IT scenarios:

■ *Developing Applications Using Java* [page 14]
■ *Creating Composite Applications* [page 15]
■ *Running an Enterprise Portal* [page 16]
■ *Enabling Enterprise Services* [page 17]
■ *Mobilizing Business Processes* [page 18]
■ *Enterprise Reporting, Query, and Analysis* [page 19]
■ *SAP NetWeaver Operations* [page 20]
■ *Software Lifecycle Management* [page 21]

2.3.1 Developing Applications Using Java

Overview

SAP NetWeaver CE provides a versatile and highly efficient development environment for Java business applications. This IT scenario provides the process-oriented view of the typical activities that you can perform to craft your custom applications in a short time frame and at a low cost using the technology that best fits your overall IT strategy.

Benefits

Using this IT scenario you can utilize SAP NetWeaver CE to increase the productivity of your overall application development. It necessitates the model-driven, pattern-based approach as a basis for achieving maximum efficiency and flexibility of application code and user experience. This is the main concept underlying the new Web Dynpro technology - SAP's approach to the development of professional Web-based user interfaces.

Reducing the total cost of ownership is another important aspect that you can influence by implementing SAP NetWeaver CE in the context of this IT scenario. Organizations that have developed their landscapes based on the standard Java Platform, Enterprise Edition (Java EE) technologies can easily port their applications and integrate them with the other SAP technologies to add value to the end users by improved usability and consistency.

Scenario Variants

This IT scenario consists of the following two scenario variants:

- Developing a Java EE compliant application
  Focus is placed on developing open standards-based Java EE applications in the SAP NetWeaver Developer Studio and running them on the Java EE 5-certified SAP NetWeaver Application Server.
- Developing a user interface with Web Dynpro for Java
  Focus is placed on developing professional user interfaces using SAP's highly productive, model-driven Web Dynpro technology.

Required Installation Options

To implement this scenario, you need to install SAP NetWeaver CE with the following installation options:

- Required: SAP NetWeaver Composition Environment development system installation using the installation option *Java Application Server Installation*
- Optional: additional installation option *Adobe Document Services* (if you wish to use SAP interactive forms by Adobe with Web Dynpro)

For more information about the landscape options, see *System Landscape* [page 9].

2.3.2 Creating Composite Applications

Overview

What businesses need today is the possibility to combine data and services from legacy system into flexible processes that are end user-oriented, and enable efficient collaboration across large and dynamic enterprises. For that purpose, SAP has introduced the composite application concept. Composites are applications that make use of data and functions provided as services by back-end systems and other underlying applications, and combine these into user-centric processes and pages, supported by their own business logic and specific user interfaces.

This IT scenario provides developers and business process experts with guidelines for fast and efficient implementation of composite applications. It explains the components and the steps involved in creating composites.

Capabilities

To enable fast and easy composite application development, SAP has provided a set of capabilities for model-driven user interface development, service composition, and process orchestration. They comprise the design-time tools, methodologies and runtime environment required for building and executing composites. By using these capabilities, you can:

- Create services that can use data from legacy or third-party systems with the Composite Application Framework (CAF)
- Implement service orchestration with Guided Procedures (GP) as collaborative business processes
- Model user interfaces and integrate them into composites using Visual Composer

Benefits

Among the key benefits that SAP composition capabilities provide are:

- Short time to value by easy and fast implementation, without programming knowledge necessarily being required
- Simple interface technology without compatibility issues using industry standards such as Web service technologies
- Improved return on investments (ROI) by a fast learning curve

Scenario Variants

This scenario consists of the following scenario variants:

- Modeling Composite Views
  This variant focuses on modeling user interfaces with Visual Composer, which you can also integrate into a composite application.
- Modeling Composite Processes
  This variant shows the tools and steps required for the implementation of a composite process flow. Furthermore, it highlights the capabilities that Guided Procedures design time provides.
- Developing Composite Applications

This variant covers the process of creating a composite application end to end. It explains the development, configuration and adaptation of composites.

Required Installation Options

To implement this scenario, you need to install SAP NetWeaver CE with the following installation options:

■ Required: SAP NetWeaver Composition Environment development system installation using the installation option *Composition Platform Installation*
■ Required: additional installation option *Composition Tools*
■ Optional: additional installation option *Adobe Document Services* (in case you want to use composite forms with Guided Procedures)

For more information about the development landscape options, see *System Landscape* [page 9].

2.3.3 Running an Enterprise Portal

Overview

A portal typically provides all members of a company's value chain—employees, customers, partners, and suppliers—with a single access point to the applications, services, and information they need to perform their daily work and to increase overall user productivity. These resources include SAP applications, third-party applications, databases, data warehouses, desktop documents, Web content, and services. The portal makes it possible to search internal and external sources, and to access both structured and unstructured information from any geographical location throughout the organization.

Benefits

The portal installed with SAP NetWeaver Composition Environment (SAP NetWeaver CE) is a basic portal platform without additional capabilities, such as knowledge management, collaboration, and Universal Worklist. This lean portal environment offers improved performance and reduced memory consumption.

The CE portal can function purely as a development or test environment for running composite applications, or it can function in a production environment by exposing its content to a remote portal.

For information about the end-to-end process of creating composite applications, see *Creating Composite Applications* [page 15].

Scenario Variants

This IT scenario consists of single scenario variant for the SAP NetWeaver Composition Environment: Integrating Composite Applications into the Portal.

This variant focuses on configuring the SAP NetWeaver CE portal as the runtime environment for composite applications, through the use of its advanced administration tools.

Optionally, you can use the federated portal network capabilities to share content and applications running in the SAP NetWeaver CE portal and integrate them into an existing remote portal running on SAP NetWeaver 7.0 (formerly NW 2004s).

> **Example**
>
> A central corporate portal running on SAP NetWeaver 7.0 can operate as a central access point for all end users, and include local content, such as knowledge management, collaboration, and various business packages. The SAP NetWeaver CE portal serves as a production runtime platform for new composite applications. Through federation, these composite applications are exposed to the central portal. Customers benefit by taking advantage of the advanced composition capabilities offered in SAP NetWeaver CE, while keeping their corporate portal in a stable and less frequently updated environment, ensuring a consistent end-user experience.

Required Installation Options

To implement this scenario, you need to install SAP NetWeaver CE with the following installation options:

- Required: basic SAP NetWeaver Composition Environment production or development system (including an Application Server Java)
- Required: additional installation option *Composition Tools* (including the portal)

For more information about the development landscape options, see *System Landscape* [page 9].

2.3.4 Enabling Enterprise Services

Overview

This IT scenario shows how you can develop services on the basis of Web service standards, and how you can apply these services. The complexity of heterogeneous system landscapes based on different platforms, computer languages, and proprietary APIs makes the integration of processes and applications a difficult task. Using enterprise services you can integrate applications without the need for complicated, expensive development projects. The following concepts are fundamental to the development of these services:

- A service is a routine that can be called and executed. It hides the implementation and the actual accessing of data. Unlike proprietary APIs, services have a standardized interface. To make an existing function of a system available to the outside world, you can encapsulate the function as a service.
- Services are based on the W3C standard WSDL (Web Service Description Language). WSDL is independent of a specific computer language. Consumers of a service use this description to call

the service. You can either create a WSDL description for existing functions or create services directly in WSDL.

■ When you develop and model cross-system processes, it is essential that the description of a service is available centrally in a Services Registry that is based on a UDDI server (Universal Description, Discovery, and Integration).

■ Providing and consuming services in applications according to the service concept is the key to the flexibility of an enterprise service-oriented architecture. This IT scenario differentiates between the service provider that implements and provides services, and the consumer who calls these services.

Scenario Variants

The IT scenario consists of the following scenario variant for the Composition Environment:

■ Consuming Enterprise Services
This scenario variant focuses on the consumption of enterprise services in Java EE and Web Dynpro for Java applications.

Required Installation Options

To implement this scenario, a basic SAP NetWeaver Composition Environment installation (including an Application Server Java) is required.

For more information about the development landscape options, see *System Landscape* [page 9].

2.3.5 Mobilizing Business Processes

Overview

This IT scenario helps you mobilize your existing and new business processes. Users of client devices can be included in automatic business processes with the backend. This makes manual and paper-based processes redundant. You can use various tools and utilities to administer the IT scenario. These allow you to manage users, to configure mobile devices, to monitor synchronization, and to monitor your mobile landscape.

Scenario Variants

This scenario consists of the following scenario variants:

■ Developing Voice-Enabled Applications
You use this scenario variant to develop applications in SAP NetWeaver Voice that allow customers and employees to interactively access SAP or non-SAP solutions from a telephone. Internet connectivity or special mobile devices are not required. SAP NetWeaver Voice is a development and runtime environment for creating and deploying these voice applications.

Required Installation Options

To implement this scenario, you need to install SAP NetWeaver CE with the following installation options:

■ Required: basic SAP NetWeaver Composition Environment installation (including an Application Server Java)

■ Required: additional installation option *Composition Tools*

■ Required: additional installation option *Voice*

For more information about the development landscape options, see *System Landscape* [page 9].

2.3.6 Enterprise Reporting, Query, and Analysis

Overview

This IT scenario variant shows how business experts can use the Visual Composer available in SAP NetWeaver Composition Environment to provide business intelligence data and capabilities directly in operational processes and to provide user-specific BI data directly in a given business context. This approach enhances the BI capabilities of SAP NetWeaver by providing a flexible modeling infrastructure that makes it possible to embed BI directly into applications for strategic and operational decision making.

The BI Kit within Visual Composer allows you to incorporate BI data and BI capabilities in composite applications that users can access in the portal. The BI Kit allows access to any type of relational and multidimensional data via BI Consumer Services. In future, it will also be possible to build federated queries based on multiple data sources.

If a complete SAP NetWeaver BI system is available, tools from the Business Explorer Suite, or BEx reports and BEx Web applications can be built into Visual Composer models.

Benefits

The scenario offers companies the following benefits:

■ High end-user acceptance resulting from state-of-the-art user interfaces
  ● Makes it possible to display clear information directly in the business context of applications
  ● Supports integration of Business Explorer tools and reports (if a complete SAP NetWeaver BI system is available)

■ Model-driven application design
  ● Enables business process experts, IT, and software developers to create composite applications that incorporate all analytical, transactional, and collaborative steps
  ● Supports the integration of any type of data (SAP NetWeaver BI, non-SAP, relational and multidimensional data) into composite applications

Scenario Variants

This scenario consists of the following scenario variant for Composition Environment:

■ Embedding Business Intelligence into Applications
  You use this scenario variant to model composite applications with Visual Composer that use BI queries as data services.

Required Installation Options

To implement this scenario, you need to install SAP NetWeaver CE with the following installation options:

- Required: basic SAP NetWeaver Composition Environment installation (including an Application Server Java)
- Required: additional installation option *Composition Tools*
- Optional: a full SAP NetWeaver 7.0 BI installation

For more information about the development landscape options, see *System Landscape* [page 9].

2.3.7 SAP NetWeaver Operations

Overview

The IT scenario SAP NetWeaver Operations deals with tools and methods for operating a SAP NetWeaver Composition Environment securely and effectively. This includes the following activities:

- Starting and stopping CE instances, Java services, and applications
- Configuring all relevant CE and Java Virtual Machine (JVM) parameters
- Monitoring the performance and status of the SAP NetWeaver Composition Environment using log file and performance monitoring
- Ensuring data security by backing up the database

The following tools are available to you for these purposes:

- SAP Management Console
  SAP Management Console (SAP MC) is a browser-based, cross-platform user interface with which you can start, stop, and monitor the status of systems and their instances.
- SAP NetWeaver Administrator
  SAP NetWeaver Administrator (NWA) is the central browser-based tool for administering and monitoring your running CE system. Use the local NWA to do this. You can use the local NWA to administer and monitor a single system immediately after installation without additional configuration steps.
- Config Tool
  You can use the Config Tool to configure a CE instance that is not running. You can change the properties of all services, Java Managers, applications, and the JVM.

Scenario Variants

The IT scenario consists of the following scenario variant for the Composition Environment:

- Administering and Monitoring SAP NetWeaver Composition Environment
  This scenario variant implements the tools for local administration and monitoring of the SAP NetWeaver Composition Environment.

Required Installation Options

This scenario applies to the entire SAP NetWeaver CE system, irrelevant of the installation option combination that you implement. It is complementary to the other IT scenarios defined for the Composition Environment.

2.3.8 Software Lifecycle Management

Overview

Software Life-Cycle Management (SLM) by SAP comprises the management of SAP products and applications 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, or enabling the creation and propagation of changes in the landscape. Organizations can also maintain their software by importing Support Packages and corrections.

Scenario Variants

The IT scenario consists of the following scenario variant for the Composition Environment:

■ Software Life-Cycle Management for Composite Applications
  This scenario variant addresses the requirements for setting up and maintaining a composition environment.

Required Installation Options

This scenario applies to the entire SAP NetWeaver CE system, irrelevant of the installation option combination that you implement. It is complementary to the other IT scenarios defined for the Composition Environment.

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3 Installation of SAP NetWeaver Composition Environment

This section explains how to install SAP NetWeaver Composition Environment 7.1.

SAP Notes for the Installation

Make sure you have read the latest version of **SAP Note** 953763 before you start the installation. This SAP Note contains the most recent information on the installation, as well as corrections to the installation documentation. 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`.

3.1 Preparations

Before you start the installation, you have to prepare your computer for SAP NetWeaver Composition Environment.

1. *Check hardware and software requirements* [page 23].
2. *Prepare the installation DVD* [page 27].

3.1.1 Checking Hardware and Software Requirements

Before starting the installation, make sure you meet the hardware and software requirements for your operating system (OS) and the SAP NetWeaver CE system.
Consider the following information:

▪ For supported operating system releases, see the Product Availability Matrix on SAP Service Marketplace at `http://service.sap.com/pam`.
▪ Contact your OS vendor for the latest OS patches.
▪ The AS Java and the SAP NetWeaver Developer Studio can be installed on the same system in case of a 32-bit architecture. They can be installed on distributed systems, for example if the AS Java should run on a 64-bit architecture.

If you want to install a SAP NetWeaver CE **production system** on **Windows**, the host must meet the following requirements:

Requirement Type	Requirement
Hardware	▪ 150 GB free disk space ▪ Min. 2 CPUs with 3 GHz each ▪ 4 GB RAM (minimum) ▪ 64-bit architecture ⚠ Caution IA64 is not supported! ▪ Paging file size: For productive systems: 2x RAM To check the paging file size: 1. Right-click *My Computer* and choose *Properties*. 2. Choose *Advanced Performance Settings*. 3. If required, in section *Virtual Memory*, choose *Change*.
Software	**Supported Operating System:** Microsoft Windows 2003 Server SP1 (or higher) **Supported Databases:** ▪ Max DB 7.6 💡 Note The MaxDB database software will be installed with the SAP NetWeaver CE system automatically. ▪ MS SQL Server 2005 SP1 (or higher) 💡 Note If you want to use the MS SQL Server database, you have to install it **before** installing SAP NetWeaver CE.

If you want to install a SAP NetWeaver CE **production system** on **Linux**, the host must meet the following requirements:

Requirement Type	Requirement
Hardware	▪ 150 GB free disk space ▪ Min. 2 CPUs with 3 GHz each ▪ 4 GB RAM (minimum) ▪ 64-bit architecture ⚠ Caution IA64 is not supported! ▪ Swap space: 2x RAM

Requirement Type	Requirement
	To check the allocated swap space, enter the command `swapon -s`. If required, configure swap space as follows: On Red Hat Linux: Check the documentation provided by Red Hat. On SUSE LINUX, enter one of the following commands: ● `yast` ● `yast2`
Software	**Supported Operating Systems:** ■ SuSE SLES 9 SP3 ■ SuSE SLES 10 💡 Note Before starting the installation on SLES 10, see **SAP Note** 958253. ■ Red Hat Enterprise Linux 4 QU4 ■ Red Hat Enterprise Linux 5 ■ Red Flag Advanced Server (AS/DC) 5 **Supported Database:** Max DB 7.6 💡 Note The MaxDB software will be installed with the SAP NetWeaver CE system automatically.

If you want to install a SAP NetWeaver CE **development system** (**Windows only**), the host must meet the following requirements:

Requirement Type	Requirement

Hardware	💡 Note
	 Development systems can be installed on 32-bit and 64-bit platforms (Windows only).
	
	 ⚠ Caution
	 IA64 is not supported!
	
	 ■ 10 GB free disk space
	 ■ Min. 1 CPU with 3 GHz
	 ■ 2 GB RAM (minimum)
	 ■ Paging file size: 2x RAM
	   To check the paging file size:
	   1. Right-click *My Computer* and choose *Properties*.

Requirement Type	Requirement
	2. Choose *Advanced Performance Settings*. 3. If required, in section *Virtual Memory*, choose *Change*.

Software	**Supported Operating Systems:**
	■ Microsoft Windows XP Professional SP2 (or higher) (**32-bit**)
	■ Microsoft Windows 2003 Server SP1 (or higher) (**64-bit**)
	Supported Databases:
	■ MaxDB 7.6
	
	    Note
	The MaxDB software will be installed with the SAP NetWeaver CE system.
	
	■ MS SQL Server 2005 SP1 (or higher)
	
	    Note
	If you want to use the MS SQL Server database, you have to install it **before** installing SAP NetWeaver CE.

If you want to install a **SAP NetWeaver Developer Studio (IDE) standalone**, the host must meet the following requirements:

Requirement Type	Requirement
Hardware	Note SAP NetWeaver Developer Studio standalone can be installed on a 32-bit platform only. ■ 1 GB free disk space ■ Min. 1 CPU with 3 GHz ■ 2 GB RAM (minimum) ■ Paging file size: 2x RAM To check paging file size: 1. Right-click *My Computer* and choose *Properties*. 2. Choose *Advanced Performance Settings*. 3. If required, in section *Virtual Memory*, choose *Change*.
Software	**Supported Operating Systems:** ■ Microsoft Windows XP Professional SP2 (or higher) (32-bit) **JDK version:**

Requirement Type	Requirement
	SUN JDK 1.5.0_11 (or higher) You can download this version from the SUN website.

💡 Note

If you want to *install additional scenarios (optional)* [page 30], you need the same hardware and software requirements as stated above plus an additional 2 GB RAM.

3.1.2 Preparing the Installation DVD

Make sure you have the installation DVD for SAP NetWeaver Composition Environment 7.1 available.

Downloading the DVD from SAP Service Marketplace

You can also download the installation DVD from SAP Service Marketplace at:

▌ http://service.sap.com/swdc ▶ *Download* ▶ *Installations and Upgrades* ▶ *Entry by Application Group* ▶ *SAP NetWeaver* ▶ *SAP NETWEAVER* ▶ *SAP NetWeaver Composition Environment 7.1* ↵.

If you download the installation DVD, note that the DVD may be split into several files. In this case, you have to reassemble the required files after the download.

3.1.3 Exporting the DISPLAY Variable (Linux only)

Linux only:

Before starting the installer, make sure that your DISPLAY environment variable is set to `<host_name>:0.0`, where `<host_name>` is the host on which the installer GUI will be displayed. Execute one of the following commands to set the DISPLAY variable:

- When using a csh:
  `setenv DISPLAY <host_name>:0.0`
- When using a sh:
  `DISPLAY=<host_name>:0.0`

`export DISPLAY`

3.1.4 Preparations for the MS SQL Database

Before installing your SAP NetWeaver CE system on Windows and MS SQL, make sure that your MS SQL database meets the following requirements.

Procedure

Before starting the installation check the following:

- The default collation of your database server is `SQL_Latin1_General_CP850_BIN2`
    1. Start the SQL Development Studio.
    2. Connect to your server.
    3. Right-click the server and select *Properties* from the context menu.
    4. Check the server collation on the general page.
    5. If the server collation differs from `SQL_Latin1_General_CP850_BIN2`, you have to reinstall it or use a different MS SQL Server Instance.
- SQL logins are enabled.
    1. Start the SQL Development Studio.
    2. Connect to your server.
    3. Right-click the server and select *Properties* from the context menu.
    4. Switch to the security page.
       Under *Server Authentication*, make sure that the entry *SQL Server and Windows Authentication mode* is selected.

       > **Note**
       >
       > If only *Windows Authentication mode* is selected, change it to *SQL Server and Windows Authentication mode* and restart the server for the changes to take effect.

- TCP protocol is enabled and your server is able to communicate on the TCP port.
    1. Start the SQL Server Configuration Manager under ▯▷ *Start* ▷ *All Programs* ▷ *MS SQL Server 2005* ▷ *Configuration Tools* ↵.
    2. Go to *SQL Server 2005 Network Configuration* in the left pane and select your instance.
    3. In the right pane, make sure that Protocol TCP/IP is set to enabled.
       If this is not the case, refer to the MS SQL Server Books online to configure the TCP/IP connection properly.

3.2 Installation

This section provides information about the steps that you have to perform to install your SAP NetWeaver CE system.

You can install

- *SAP NetWeaver CE application system* [page 29]
- *SAP NetWeaver Developer Studio standalone* [page 29]
- *Additional scenarios* [page 30]
- *Additional Application Server Instances* [page 31]

> **Note**
>
> Make sure that you have completed the planning and preparation activities **before** you start the installation.

3.2.1 Installing an SAP NetWeaver CE Application System

This section provides information about the steps that you have to perform to install SAP NetWeaver Composition Environment.

Procedure

1. On the installation DVD, navigate to either one of the following subdirectories, depending on your operating system:
   - `linuxx86_64`
   - `ntamd64`
   - `ntintel`

   Start the setup file from that folder.
2. Select the scenario you want to install:
   - *Java Application Server Installation*
   - *Composition Platform Installation*
3. Follow the on-screen instructions.
4. Choose whether you want to run the installation in *Typical* mode or in *Custom* mode.
   If you select *Typical*, the installation wizard provides automatic default settings and you only have to respond to a small selection of prompts. The rest is set by default. If you select *Custom*, you have to respond to all prompts.
5. Follow the screens and enter the required parameters.

   > **Note**
   >
   > If other SAP systems already exist on your host, you have to use the installation directory set by the installation tool and cannot change to another directory.

Only valid for: Windows

3.2.2 Installing SAP NetWeaver Developer Studio Standalone

SAP NetWeaver Developer Studio is based on Eclipse. According to the philosophy of Eclipse, the many individual tools of the SAP NetWeaver Developer Studio are grouped into perspectives each one of which is dedicated to a different aspect of the development process. SAP NetWeaver Developer

Studio includes the standard Eclipse perspectives (for example, *Java* and *Debug*) and uses the Eclipse Java editor. The SAP NetWeaver development documentation assumes that you are familiar with Eclipse and how to develop Java applications with it.

For more information, see the SAP Library at: ▌▶ http://help.sap.com/nwce ▶ *SAP NetWeaver Library* ▶ *SAP NetWeaver Developers' Guide* ◄.

⬆ Recommendation

When you installed SAP NetWeaver Developer Studio, we recommend that you always start it using the shortcuts that were created on your desktop or in the *Start* menu.

Prerequisites

Check the *hardware and software requirements* [page 23] necessary for the installation of SAP NetWeaver Developer Studio.

Procedure

1. On the installation DVD, navigate to the subdirectory `DevStudio` and run the installation file `IDEsetup.exe`.
2. Follow the screens.

⚠ Caution

Do not update the underlying Eclipse features with the Eclipse Update Manager, as this can lead to undesired results.

End of: Windows

3.2.3 Installing Additional Scenarios (Optional)

You can also install the following scenarios:

■ Composition Tools
■ Adobe Document Services
■ Composite Voice

Prerequisites

Make sure you fulfill the *hardware and software requirements* [page 23].

> 💡 Note
>
> Before installing additional scenarios, you need to stop all application servers manually.

Only valid for: MaxDB

MaxDB: Make sure that the AS Java and its corresponding database is running.

End of: MaxDB

You can stop and start the system using the shortcuts under ▐▶ *Start* ▶ *All Programs* ▶ *SAP NetWeaver Composition Environment 7.1* ▶ *Application Server Jxx<SAPSID>* ◀┘.

Procedure

> 💡 Note
>
> Before installing additional scenarios and in the case that you made changes to the default template settings, see **SAP Note** 953763.

1. Run the installation file `install.exe` from the subdirectory `CompositionTools` on the installation DVD.
2. On the screen *Select Scenario Content*, select the additional scenario you want to install.
3. Choose *Next*.
4. On the next screen, select the SAP system ID and enter the administrator password. Choose *Next*.
5. On the screen *Checking Running Engine Processes*, make sure that all processes are started.
6. Choose *Install*.

3.2.4 Installing Additional Application Server Instances (Optional)

You can scale your system both by installing additional application server instances and by adding more server nodes to each instance.

Procedure

1. On the installation DVD, navigate to subdirectory `AdditionalApplicationServer`.
2. On **Windows**: Double-click `appserver.exe`.
   On **Linux**: run file `appserver.sh`.

> 🔆 Note
>
> On **Linux**:
>
> The SAP mount directory is a shared file system (NFS). On the SAP global host, export the directory `/sapmnt/<SAP system ID>`. The SAP global host is the host where the SAP Central Services (SCS) runs. On this host, mount the directory `/sapmnt/<SAP system ID>`from the SAP global host on `/sapmnt/<SAP system ID>`.

3. Follow the on-screen instructions.

3.3 Post-Installation Activities

This section describes the steps that you have to perform after the installation has finished successfully.

3.3.1 Enabling Adobe Document Services

If you have installed SAP NetWeaver Composition Environment with the Adobe Document Services add-on in development mode on a *Windows* platform, you must complete the following post-installation steps to enable the add-on. In case you have installed an AS Java cluster, apply the procedure to the central host, as well as to all hosts where additional application server instances are running.

Procedure

1. Using the SAP Management Console, stop the AS Java system.
    For more information about starting and stopping SAP systems, see ▶ http://help.sap.com/nwce ▶
    Administrator's Guide ▶ *Administration of SAP NetWeaver CE* ▶ *General System Administration* ▶ *AS Java
    (Application Server Java)* ↵.
2. From the Start menu, open ▶ *Control Panel* ▶ *Administrative Tools* ▶ *Computer Management* ▶ *Services and
    Applications* ▶ *Services* ↵.
3. Select *SAP<SID>_<Instance_Number>* (for example, *SAPCE1_00*) and open *Properties* from the
    context menu.
4. On the *Log On* tab page, enable the *Local System account* indicator.
5. Repeat the above steps for the second *SAP<SID>_<Instance_Number>* service that you see in the list.
6. Start the AS Java system.

3.3.2 Enabling Services Registry

You must apply additional configuration steps to enable Services Registry after you have installed a
SAP NetWeaver Composition Environment system containing the following components:

■ Java Application Server and Composition Platform
■ Java Application Server and Adobe Document Services

To enable Services Registry, you must apply the following configuration templates to your system:

■ `CE_Complete_Stack_production_full`
   Apply this template if you have installed SAP NetWeaver CE in *productive mode*.
■ `CE_Complete_Stack_development_full`
   Apply this template if you have installed SAP NetWeaver CE in *development mode*.

For more information about applying configuration templates, see ▶ `http://help.sap.com/nwce` ▶
Administrator's Guide ▶ *Configuration of SAP NetWeaver CE* ▶ *Initial System Configuration* ▶ *AS Java Configuration* ▶
Activating a Configuration Template ↵.

3.3.3 Changing the Password for the Internet Communication Manager (ICM)

You can monitor and manage the Internet Communication Manager (ICM) from the command line
program.
After the installation of your SAP NetWeaver CE system has successfully finished, you need to change
the ICM password manually.

Procedure

To set the ICMON password manually, proceed as follows:

1. Log on at operating system level to the computer where the ICM is running.
2. Start the program `icmon` with **`icmon -a profile=<instance_profile>`** to maintain the
   authentication file (default: `authfile.txt`).
3. Choose **a** to add a user.
4. Choose **c** to change the password of the existing user.
5. Choose **s** to save your settings.

3.3.4 Configuring the SAP NetWeaver CE System

After installing your SAP NetWeaver CE system, you need to perform some configuration steps.
For configuration documentation, see the SAP Library at ▶ `http://help.sap.com/nwce` ▶
Administrator's Guide ▶ *Configuration for SAP NetWeaver CE* ↵.

3.4 Next Steps

Once you have installed SAP NetWeaver Composition Environment, you can refer to the following documentation to proceed with your tasks:

- If you are a **system administrator**, refer to ▌ http://help.sap.com/nwce ▶ *Administrator's Guide* ◀. It contains information about how to configure and administer your system.
- If you are a **developer**, refer to ▌ http://help.sap.com/nwce ▶ *Developer's Guide* ◀. It provides guidelines for developing applications using SAP NetWeaver CE.

> 🔳 Note
>
> The SAP NetWeaver CE documentation is also available offline as a part of your installation. To access it, choose ▌ *Start* ▶ *All Programs* ▶ *SAP NetWeaver Composition Environment* ▶ *Application Server <instance_ID> (<SID>)* ▶ *Documentation* ◀.

For information about SAP NetWeaver CE documentation corrections, see **SAP Note** 1048442.

3.5 Additional Information

The following section provides additional information about the installation of SAP NetWeaver Composition Environment.

3.5.1 Transporting Self-developed Software Component Archives (SCA) into the System

Prerequisites

You have developed your own Software Component Archives (SCA) and want to transport them into your SAP NetWeaver CE system.

Procedure

To transport your SCAs to the SAP NetWeaver CE system, proceed as follows:

1. Run the update tool as described in *Updating the SAP NetWeaver CE system* [page 39].

   > 🔳 Note
   >
   > If the tool displays descriptions such as "*Applying Support Packages*", you can ignore them.

2. In the dialog screens, specify the directory where your SCAs are located.
3. Follow the on-screen instructions.

3.5.2 Uninstalling SAP NetWeaver Composition Environment

You have to uninstall all components of the SAP NetWeaver Composition Environment separately, that is SAP NetWeaver CE and SAP NetWeaver Developer Studio.

Procedure

1. To uninstall your SAP NetWeaver CE system, choose ▶ *Start* ▶ *Programs* ▶ *SAP NetWeaver Composition Environment* ▶ *Application Server Jxx (<SAPSID>)* ▶ *Uninstall* ↵.
2. To uninstall SAP NetWeaver Developer Studio, choose ▶ *Start* ▶ *Programs* ▶ *SAP NetWeaver Composition Environment* ▶ *SAP NetWeaver Developer Studio* ▶ *Uninstall* ↵.

> 💡 Note
>
> Before uninstalling SAP NetWeaver Developer Studio, consider the following:
> - All additionally installed features and plug-ins that were installed to the same folder as Developer Studio, for example, by using the Eclipse Update Manager, will also be removed.
> - At uninstall time, there may be other directories and files in the installation directory, notably `<install_dir>/eclipse/workspace/`, `<install_dir>/eclipse/links/`, and `<install_dir>/eclipse/configuration/`, that contain important data. The files and folder as well as the existing workspaces will be retained when the product is uninstalled.

> 💡 Note
>
> As all SAP system use the SAP Management Console, there is no uninstallation option for the SAP Management Console with SAP NetWeaver CE 7.1. If you are sure that you do not need the SAP Management Console any more, you can remove it using ▶ *Start* ▶ *Control Panel* ▶ *Add / Remove programs* ↵.

3.5.3 Troubleshooting – Repairing an Inconsistent MaxDB Installation

Prerequisites

During the pre-installation phase, the Microsoft Windows registry is checked for already installed MaxDB software.
If the registry key is found but there is no software on the hard drive, you receive the following message:
`The existing MaxDB software is not consistent.  Check the file system and registry.`
The most common reason for this inconsistency is the manual deletion of the software from the file system without using the specified tools.

Procedure

To repair this inconsistency, proceed as follows:

1. Choose ▌ *Start* ▶ *Control Panel* ▶ *Administrative Tools* ▶ *Services* ↵.
2. Make sure the services SAPDBWWW, SAPDB: *, and XServer are stopped.
3. Choose ▌ *Start* ▶ *Run* ↵ and run the command **regedit**.
4. Go to ▌ *My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\SAP\SAP DBTech* ▶ *Key IndepPrograms* ↵.
   The key contains a path to a folder.
   a) Check if this folder exists on the file system.
   b) Note down the value of *Key IndepPrograms* for later usage (see step 7).
      If the path does not exist in the file system, delete the key SAP DBTech.
5. Delete the following keys:
   ▪ My Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SAP DBTech-*
   ▪ My Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SAPDBWWW
   ▪ My Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\XServer
6. Choose ▌ *Start* ▶ *Control Panel* ▶ *System* ▶ *Advanced* ▶ *Environment Variables* ▶ *System Variables* ▶ *Path* ↵.
7. Delete the following paths from the variable:
   ▪ <IndepPrograms>/bin
   ▪ <IndepPrograms>/pgm
8. Reboot your computer.

3.5.4 Restarting the MaxDB Server Manually

Only valid for: Windows

If, after a reboot, the database server is not running automatically, you need to restart the MaxDB server manually.

End of: Windows

Production Systems

To restart the MaxDB server manually, proceed as follows:

1. Open a command prompt and enter the following command: **net start sapdbwww**
   OR
   Choose ▌ *Start* ▶ *All Programs* ▶ *Administrative Tools* ▶ *Services* ↵. Doubleclick on *SAP DB WWW* and choose *Start*.
2. Open the SAP Management Console and choose ▌ *SAP Systems* ▶ *<SAPSID>* ▶ *<machine name>* ↵.
3. Enter the master password and choose *Logon*.
4. Choose *Online*. When the database server is online, you can restart the engine.

Development Systems

To restart the MaxDB server manually, choose ▌ *Start* ▶ *All Programs* ▶ *SAP NetWeaver Composition Environment CE* ▶ *Application Server <SAPSID>* ▶ *Start Application Server* ↵.

3.5.5 Restarting the MS SQL Server Manually

If, after a reboot, the database server is not running automatically, you need to restart the MS SQL
server manually.

Procedure

1. Choose ▶ *Start* ▶ *All Programs* ▶ *Administrative Tools* ▶ *Services* ↵.
2. Look for the service named *SQL Server <name>*, where <name> is MSSQLSERVER for the default
   instance or <instance name> for a named instance.
3. If the service status is not started, right-click the service and choose *Start* in the context menu.
4. To insure the service is started automatically after each system restart, right-click it and choose
   Properties. Select *Automatic* as the startup type.

3.5.6 Configuration Templates

Configuration templates contain the predefined instance configuration for specific scenarios. They
are automatically applied according to the installation option you have selected. The templates
are designed to optimize system performance by applying certain configuration to the Java Virtual
Machine and the application server, as well as by applying startup filters to AS Java services and
applications to start only those relevant for the selected installation options.
The following table provides information about the available templates with SAP NetWeaver
Composition Environment. In the template name, replace the `<system_mode>` parameter by
`development` (for the templates relevant to systems installed in *development* mode) or `production` (for
the templates relevant to systems installed in *productive* mode).

Configuration Template	Selected Installation Options
`CE_Java_EE_<system_mode>_full`	Java Application Server Installation
`CE_Composition_Environment_<system_mode>_full`	Java Application Server Installation + Composition Platform Installation
`CE_Adobe_Document_Service_<system_mode>_full`	Java Application Server Installation + Adobe Document Services Add-on Installation
`CE_Composite_Voice_<system_mode>_full`	Java Application Server Installation + Voice Add-on Installation
`CE_Complete_Stack_<system_mode>_full`	Java Application Server Installation + Composition Platform Installation + Adobe Document Services Add-on Installation + Voice Add-on Installation

If your selection cannot be mapped to one of the combinations in the above table, the template
`CE_Complete_Stack_<system_mode>_full` is applied. It starts all applications and services needed
to run the complete stack.

You can manually apply a different configuration template if you want to switch to another installation
option. For example, by changing from template `CE_Complete_Stack_<system_mode>_full` to
`CE_Java_EE_<system_mode>_full`, you achieve shorter startup times and less memory consumption,
but also less functionality since not all applications and services are running.

For more information about applying configuration templates, see ▶ http://help.sap.com/nwce ▶
Administrator's Guide ▶ *Configuration of SAP NetWeaver CE* ▶ *Initial System Configuration* ▶ *AS Java Configuration* ▶
Activating a Configuration Template ◀.

Note

Make sure that you do not apply a development template to a productive system or vice versa.

4 Update of SAP NetWeaver Composition Environment

This section describes the update process if you want to update your SAP NetWeaver CE system from SP00 to SP01.

4.1 Updating SAP NetWeaver Composition Environment

If you want to apply the latest support packages and patches to your SAP NetWeaver CE system or update your applications, use the update management service of SAP NetWeaver CE.

Procedure

1. Open the following URL in a browser:
   `http://<java_hostname>:<java_port>`

   > 💡 Note
   > If your Java instance is **00**, your <java_port> is **500**00.

   Log on as a user with system administration rights.
2. On the SAP NetWeaver Application Server entry page, choose ▶ *System Information* ▶ *System <SAPSID>* ↵.
   Note down the components that are installed in your engine.
3. Download the update files from ▶ http://service.sap.com/swdc ▶ *Download* ▶ *Support Packages and Patches* ▶ *Entry by Application Group* ▶ *SAP NetWeaver* ▶ *SAP NETWEAVER* ▶ *SAP NETWEAVER 7.1* ↵.
4. Exchange the engine template.

   > 💡 Note
   > Before changing the current template, note down the name of the currently active template, as you will need it at the end of this procedure to reactivate the original template again.

   a) Navigate to the `configtool` subdirectory of your installation directory, for example
      `C:\usr\sap\CE1\J01\j2ee\configtool`
   b) Run the file `configtool.bat`.
   c) Highlight the template and choose ▶ *File* ▶ *Change System Template* ↵.
   d) Switch from the current template to the `instance_development` template.

e) Save your settings and restart the server.

To do this, open SAP Management Console, select the node and choose the restart option.

> ⚠️ Caution
>
> If you are running a cluster system, you need to check that all instances are running the correct template before proceeding to update the main instance.

5. Stop the SAP Management Console.

Only valid for: Windows

6. From the download folder from SAP Service Marketplace, run the update tool `update<ID>.exe` to apply patches and updates to your SAP NetWeaver CE system.

End of: Windows

Only valid for: Linux

From the download folder from SAP Service Marketplace, run the update tool `update<ID>.sh` to apply patches and updates to your SAP NetWeaver CE system.

End of: Linux

After running the update tool wait until the engine is fully started.

7. To complete the update process, change back the system template to the original one.

> ⚠️ Caution
>
> If you are running a cluster system, make sure that you change back to the original template **on all dialog instances**.

8. Restart the system.

4.2 Updating SAP NetWeaver Developer Studio

To update your SAP NetWeaver Developer Studio, use the SAP NetWeaver Developer Studio support package installer. The update procedure deletes all features that you have additionally installed in the SAP NetWeaver Developer Studio installation directory. Your existing configuration and workspaces will be preserved.

If you do not have SAP NetWeaver Developer Studio installed, this procedure will install it.

Prerequisites

Make sure your SAP NetWeaver Developer Studio is stopped.

Procedure

1. Download the SAP NetWeaver Developer Studio update files from
   ▮ http://service.sap.com/swdc ▶ *Download Support Packages and Patches* ▶ *Entry by Application Group* ▶
   SAP NetWeaver ▶ *SAP NETWEAVER* ▶ *SAP NETWEAVER CE 7.1* ↵

2. From the download folder, run the `IDEsetup.exe` file.
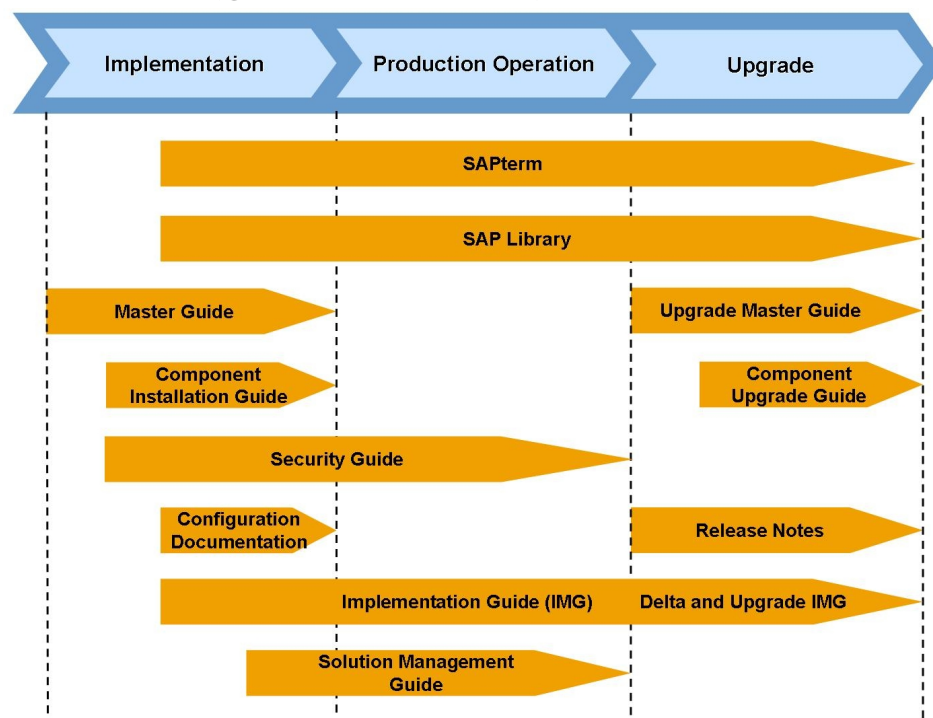
3. Follow the screens.

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A Reference

A.1 The Main SAP Documentation Types

The following is an overview of the **most important** documentation types that you need in the various phases in the life cycle of SAP software.

Figure 3: Documentation Types in the Software Life Cycle

Cross-Phase Documentation

SAPterm is SAP's terminology database. It contains SAP-specific vocabulary in over 30 labout anguages, as well as many glossary entries in English and German.

- Target group:
  - Relevant for all target groups
- Current version:
  - On SAP Help Portal at ▐▶ http://help.sap.com ▶ *Additional Information* ▶ *Glossary* ◀▌ (direct access) or *Terminology* (as terminology CD)
  - In the SAP system in transaction STERM

SAP Library is a collection of documentation for SAP software covering functions and processes.

- Target group:
  - Consultants
  - System administrators
  - Project teams for implementations or upgrades
- Current version:
  - On SAP Help Portal at `http://help.sap.com` (also available as documentation DVD)

The **security guide** describes the settings for a medium security level and offers suggestions for raising security levels. A collective security guide is available for SAP NetWeaver. This document contains general guidelines and suggestions. SAP applications have a security guide of their own.

- Target group:
  - System administrators
  - Technology consultants
  - Solution consultants
- Current version:
  - On SAP Service Marketplace at `http://service.sap.com/securityguide`

Implementation

The **master guide** is the starting point for implementing an SAP solution. It lists the required installable units for each business or IT scenario. It provides scenario-specific descriptions of preparation, execution, and follow-up of an implementation. It also provides references to other documents, such as installation guides, the technical infrastructure guide and SAP Notes.

- Target group:
  - Technology consultants
  - Project teams for implementations
- Current version:
  - On SAP Service Marketplace at `http://service.sap.com/instguides`

The **installation guide** describes the technical implementation of an installable unit, taking into account the combinations of operating systems and databases. It does not describe any business-related configuration.

- Target group:
  - Technology consultants
  - Project teams for implementations
- Current version:
  - On SAP Service Marketplace at `http://service.sap.com/instguides`

Configuration Documentation in SAP Solution Manager—SAP Solution Manager is a life-cycle platform. One of its main functions is the configuration of business and IT scenarios. It contains IMG activities, transactions, and so on, as well as documentation.

- Target group:
  - Technology consultants
  - Solution consultants
  - Project teams for implementations
- Current version:
  - In SAP Solution Manager

The **Implementation Guide (IMG)** is a tool for configuring a single SAP system. The IMG activities and their documentation are structured from a functional perspective. (In order to configure a whole system landscape from a process-oriented perspective, SAP Solution Manager, which refers to the relevant IMG activities in the individual SAP systems, is used.)

- Target group:
  - Solution consultants
  - Project teams for implementations or upgrades
- Current version:
  - In the SAP menu of the SAP system under ▯▷ *Tools* ▶ *Customizing* ▶ *IMG* ◁

Production Operation

The **technical operations manual** is the starting point for operating a system that runs on SAP NetWeaver, and precedes the solution operations guide. The manual refers users to the tools and documentation that are needed to carry out various tasks, such as monitoring, backup/restore, master data maintenance, transports, and tests.

- Target group:
  - System administrators
- Current version:
  - On SAP Service Marketplace at http://service.sap.com/instguides

The **solution operations guide** is used for operating an SAP application once all tasks in the technical operations manual have been completed. It refers users to the tools and documentation that are needed to carry out the various operations-related tasks.

- Target group:
  - System administrators
  - Technology consultants
  - Solution consultants
- Current version:
  - On SAP Service Marketplace at http://service.sap.com/instguides

Upgrade

The **upgrade master guide** is the starting point for upgrading the business and IT scenarios of an SAP solution. It provides scenario-specific descriptions of preparation, execution, and follow-up of an upgrade. It also refers to other documents, such as the upgrade guides and SAP Notes.

- Target group:
  - Technology consultants
  - Project teams for upgrades
- Current version:
  - On SAP Service Marketplace at http://service.sap.com/instguides

The **upgrade guide** describes the technical upgrade of an installable unit, taking into account the combinations of operating systems and databases. It does not describe any business-related configuration.

- Target group:
  - Technology consultants
  - Project teams for upgrades
- Current version:
  - On SAP Service Marketplace at http://service.sap.com/instguides

Release notes are documents that contain short descriptions of new features or changes in SAP NetWeaver or an SAP application since the previous release. Release notes about ABAP developments enable the SAP system to generate delta and upgrade IMGs.

- Target group:
  - Consultants
  - Project teams for upgrades
- Current version:
  - On SAP Service Marketplace at http://service.sap.com/releasenotes
  - In the SAP menu of the SAP system under ⏵ *Help* ▶ *Release Notes* ⏴ (only ABAP developments)

Typographic Conventions

Example	Description
< >	Angle brackets indicate that you replace these words or characters with appropriate entries to make entries in the system, for example, "Enter your **<User Name>**".
▌▶ ▶ ↵	Arrows separating the parts of a navigation path, for example, menu options
Example	Emphasized words or expressions
Example	Words or characters that you enter in the system exactly as they appear in the documentation
Example	Textual cross-references to an internet address, for example, http://www.sap.com
/example	Quicklinks added to the internet address of a homepage to enable quick access to specific content on the Web
123456	Hyperlink to an SAP Note, for example, SAP Note 123456
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

This document was created using stylesheet 2006-12-31 (V5.1) and XSLT processor SAXON 6.5.2 from Michael Kay (http://saxon.sf.net/), XSLT version 1.

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 expressively 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: https://service.sap.com/instguides