Installation Guide

SAP® J2EE Engine for SAP Systems on Windows: MS SQL Server

SAP Systems based on SAP Web Application Server 6.30

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Typographic Conventions

Type Style	Represents
Example Text	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, titles of graphics and tables
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
`Example text`	Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, source code as well as names of installation, upgrade and database tools.
`Example text`	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.
`EXAMPLE TEXT`	Keys on the keyboard, for example, function keys (such as `F2`) or the `Enter` key.

Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Contents

SAP J2EE Engine Installation for SAP Systems on Windows: MS SQL Server

Purpose

This documentation explains how to install the SAP J2EE Engine for already existing SAP systems (based on SAP Web Application Server) on Windows when your database is MS SQL Server.

SAP Web Application Server (SAP Web AS) is the underlying technology of almost all solutions of mySAP Business Suite. For more information on the technology provided by SAP Web AS, see the *SAP Service Marketplace* at the Internet address:

`service.sap.com/netweaver`

Before you start your installation, make sure that you read the Installation Checklists [Page 16]. This section of the documentation provides you with a list of all actions that you must perform to install your SAP system successfully. The actions are listed chronologically in checklists, which you use to navigate through the installation.

Constraints

You must only use the SAP installation tools according to the instructions and for the purposes described in the SAP installation documentation. Improper use of the SAP installation tools can damage files and systems already installed.

You need consider the following constraints before you start your installation:

- This documentation **only** applies if you are installing an MS SQL Server database with a Windows operating system.
- SAP system installations should **only** be performed by SAP Technical Consultants, who are certified for your operating system, your database, and the SAP system that you are installing.

1 General Information

- For the installation of the J2EE Engine on Windows, only the English international version of Windows 2000 or Windows Server 2003 are supported.
- Before you start the SAP system installation, read Installation Checklists [Page 16].

1.2 Naming Conventions

In this documentation, the following naming conventions apply:

Variables

Variables	Description
<SAPSID>	SAP system ID in uppercase letters
<sapsid>	SAP system ID in lowercase letters
<DBSID>	Database ID in uppercase letters
<dbsid>	Database ID in lowercase letters
<host_name>	Name of the corresponding host
<SAPinst_INSTDIR>	Installation directory for the SAP installation tool SAPinst
<INSTDIR>	Installation directory for the SAP system
<CD-DIR>	Directory on which a CD is mounted
<OS>	Operating system name within a path

The following examples show how the variables are used:

- Log on as user <sapsid>adm and change to the directory \usr\sap\<SAPSID>.

  If your SAP system ID is C11, log on as user c11adm and change to the directory \usr\sap\C11.
- Change to the directory <CD-DIR>\Windows\<OS>.

  If the CD is mounted on \sapcd1 and your operating system is Windows NT, change to \sapcd1\Windows\NT.

2 Implementation Considerations

Purpose

You and your hardware partner generally plan the system configuration well in advance of the installation, using sizing information that reflects the system workload. You use factors such as the following to design a configuration that performs well:

- The required applications
- How intensively the applications are to be used
- The number of users

As the system configuration fundamentally influences the installation procedure, it is important to have a clear configuration plan before you start the installation.

Process Flow

1. You choose the basic system variant [Page 10] of SAP Web AS.
2. You choose the required installation components [Page 10].
3. You decide how to distribute the required installation components to the available hosts. This depends on your basic installation type:

   Beside component distributions shown in the sections listed below, also all other distributions in between these minimal and maximal component distributions are possible.

   - Distribution of Installation Components for an SAP Web AS ABAP+J2EE system [Page 12]
   - Distribution of Installation Components for an SAP Web AS J2EE system [Page 14]

2.1 Basic System Variants

There are the following basic system variants of SAP Web Application Server (and SAP systems based on SAP Web Application Server):

- **SAP systems based on an SAP Web AS ABAP+J2EE system**

  This system variant consists of the ABAP installaton of an SAP system and the SAP J2EE Engine. You can then operate **both** the ABAP Engine and the SAP J2EE Engine on the SAP system.

- **SAP Web AS J2EE system**

  This system variant consists of the SAP J2EE Engine and auxiliary services. There is **no** ABAP Engine.

2.2 Installation Components

Definition

A minimum SAP system consists of a central instance, a central services instance, and a database instance. You can then install optional dialog instances on different hosts after you have completed the installation of the central instance, the central services instance, **and** the database.

You can think of an SAP instance – central instance, central services instance, database instance, dialog instance, or gateway instance – as a group of processes that are started and stopped at the same time. Every instance has a two-digit identifier between 00 and 97 that must be unique on a computer.

Use

When you set up an SAP system, you need to install the main components that enable the system to operate:

- **Central Instance**

  The Software Deployment Manager (SDM) is part of the SAP J2EE Engine of the central instance. For more information, see section Additional Information about the SAP J2EE Engine [Page 93].

- **Central services instance**

  SAP Central Services (SCS) form the basis of communication and synchronization for the J2EE cluster. A central services instance consists of the message service and the enqueue service:

  - The *message service* keeps a list of the J2EE dispatchers and J2EE server processes of the J2EE cluster. It provides the infrastructure for data exchange (small datasets only) between the participating nodes. The message service also supplies information to the SAP Web Dispatcher about load balancing between multiple J2EE instances.
  - The *enqueue service* manages logical database locks, which are set by the executed application program in a J2EE server process. The enqueue service also synchronizes data across the J2EE cluster.

  For more information, see the following in the SAP Library [Page 31]:

  J2EE Technology in SAP Web Application Server → Architecture Manual → J2EE Cluster Architecture → Central Services

- **Database instance**

  As of SAP Web AS 6.30, the SAP J2EE Engine has its own database schema. Therefore, a database instance is also a mandatory installation component for the installation of an SAP Web AS J2EE system.

  For the installation of an SAP Web AS ABAP+J2EE system, both the ABAP and the J2EE schema are installed in the same database.

- **Dialog instances**, if required

  Dialog instances are SAP instances that include only the dispatcher, J2EE server processes, and – if you install SAP Web AS – the gateway and certain ABAP work

processes (dialog, batch, spool, or update). Dialog instances are installed on application servers.

The dialog instances of an SAP Web AS J2EE system are called **J2EE dialog instances**.

If information is valid for both dialog instances and J2EE dialog instances, *(J2EE) dialog instance* is written in this documentation.

- **Gateway instance**, if required

  It is possible to install an SAP instance of an SAP Web AS (ABAP) exclusively as a standalone gateway. This type of instance does not contain normal work process types (dialog, background, update, enqueue or spool). Only the gateway process (gwrd) is started. If there is an SNA connection to an R/2 System, gateway work processes (gwwp) are also started.

  As gateway instances are only part of an SAP Web AS (ABAP) installation, they are **not** described in this installation documentation.

- **Front ends**

  The installation of front ends for the SAP system is described separately in the documentation [Page 30] *SAP Front End Installation Guide*.

- **SAP NetWeaver Developer Workplace**

  The SAP NetWeaver Developer Workplace consists of a special SAP Web AS J2EE system in addition to the SAP NetWeaver Developer Studio, SAP's Java Integrated Development Environment (IDE). If required, you can install the Java IDE separately.

  The installation of the SAP NetWeaver Developer Workplace is **not** described in this installation documentation. For its installation, see the documentation [Page 30] *Installation Guide – SAP NetWeaver Developer Workplace*.

- **SAP NetWeaver Developer Studio**

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

  For more information, see the following in the SAP Library [Page 31]:

  J2EE Technology in SAP Web Application Server → Development Manual → Introduction to the SAP NetWeaver Developer Studio

  You can install the SAP NetWeaver Developer Studio in either of the following ways:

  - Separately

    For more information, see the documentation [Page 30] *Installation Guide – SAP NetWeaver Developer Studio.*

  - As part of the SAP NetWeaver Developer Workplace

    For more information, see the documentation [Page 30] *Installation Guide – SAP NetWeaver Developer Workplace*.

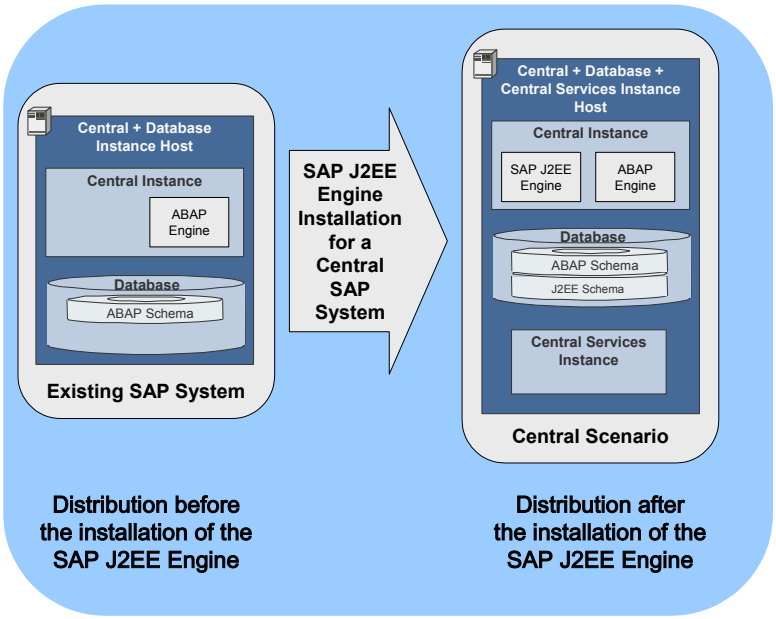
2.3 Distribution of Installation Components for an SAP Web AS ABAP+J2EE System

2.3 Distribution of Installation Components for an SAP Web AS ABAP+J2EE System

You decide if you want to distribute the SAP system instances on a single host or on multiple hosts:

- SAP J2EE Engine for a **central** SAP system installation

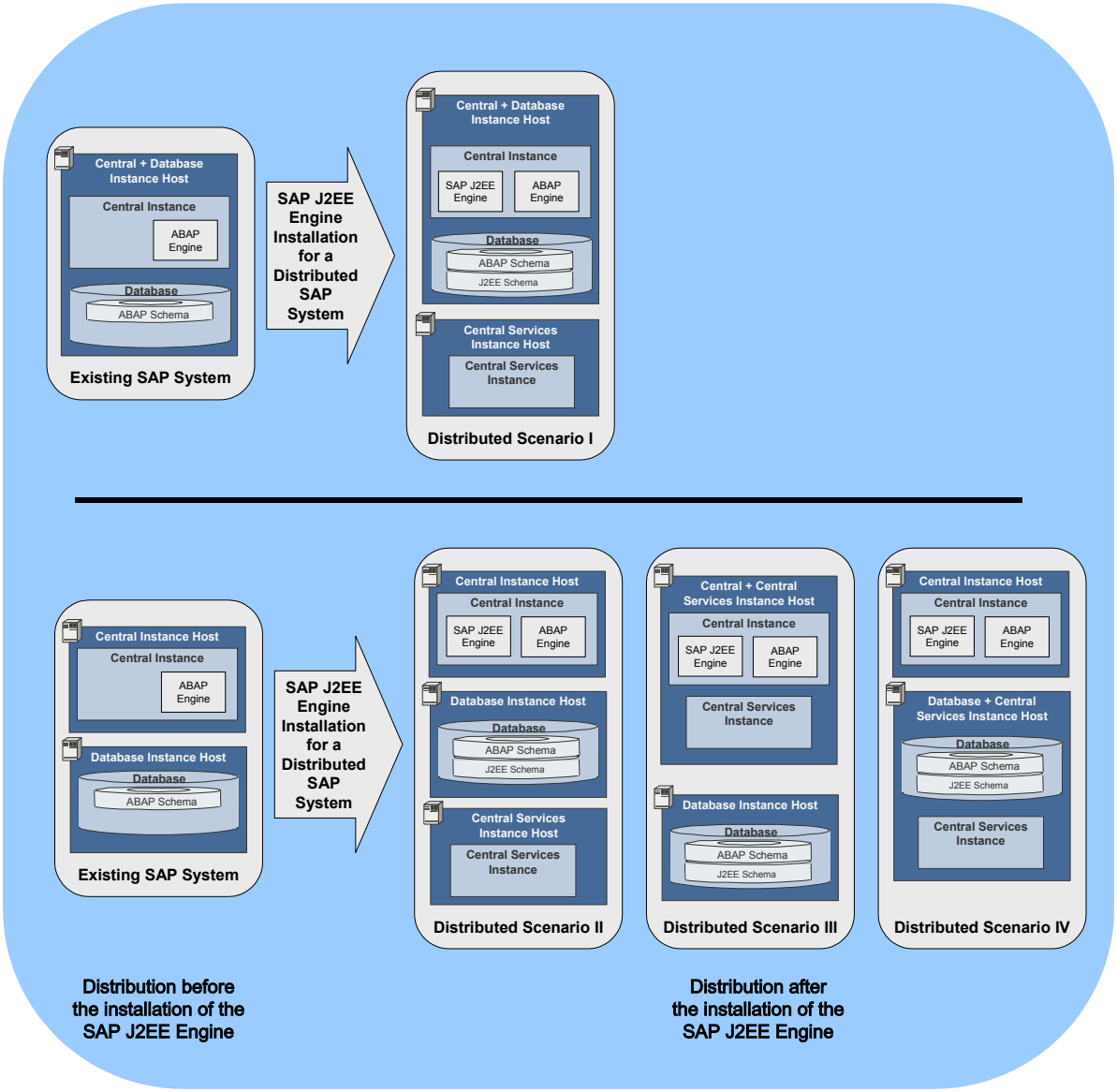
  The central instance and the database instance of your SAP system are installed on a **single host** and you want to install the central services instance on this host as well.



- SAP J2EE Engine for a **distributed** SAP system installation

  Central instance, central services instance and database instance of your SAP system are installed on **multiple hosts**.

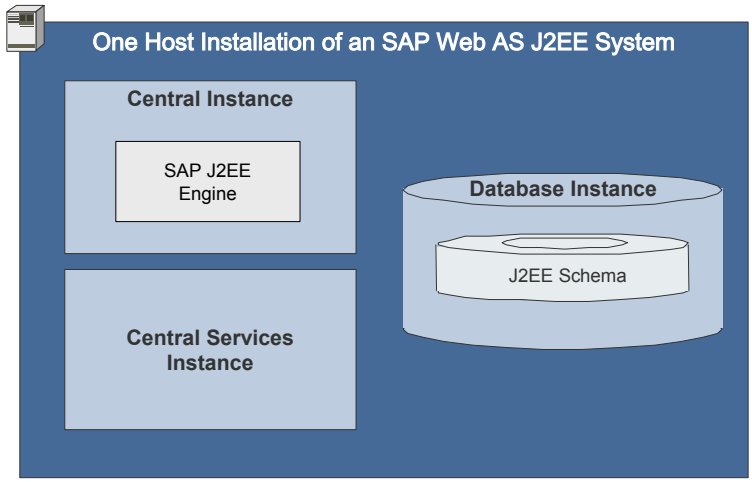
2.3 Distribution of Installation Components for an SAP Web AS ABAP+J2EE System



2.4 Distribution of Installation Components for an SAP Web AS J2EE System

All mandatory **installation components [Page 10] for the SAP Web AS J2EE system installed on a** single host**.**

There is no distributed installation for the SAP Web AS 6.30 J2EE system.



3 Installation Checklists

Purpose

You use the tables in the following sections as checklists to navigate through the installation when you install your SAP system.

Prerequisites

You have decided how to implement your SAP system [Page 10].

Process Flow

1. You choose and print out the relevant installation checklist(s) for one of the following system variants:
   - **SAP Web AS J2EE system**

     If you want to install the system variant SAP Web AS J2EE system, you have to perform the installation option *SAP Web AS – J2EE only.*

Installation Option	Installation Checklist
Installation of SAP Web AS – J2EE only as a **central system**: Central instance, central services instance and database instance of the SAP Web AS J2EE system are installed on one host	SAP Web AS – J2EE only (Central System) [Page 17]
Installation of J2EE Dialog Instance(s) for the SAP Web AS J2EE system	J2EE Instance for SAP Web AS – J2EE only [Page 19]

   - **SAP Web AS ABAP+J2EE system**

     If you want to install the system variant SAP Web AS ABAP+J2EE system, you have to perform the installation option *SAP Web AS – J2EE Add-In* that adds an SAP J2EE Engine to an existing SAP Web AS 6.20 (ABAP) SP 25 or higher.

     The installation of SAP Web AS 6.20 (ABAP) is **not** included in this installation option. As a result, **SAP Web AS 6.20 (ABAP) SP25 or higher** is a prerequisite for this installation.

Installation Option	Installation Checklist
Installation of SAP Web AS – J2EE Add-In as a **central system**: Central instance, central services and database instance of the SAP Web AS ABAP+J2EE system are installed on **one** host	SAP Web AS – J2EE Add-In as Central System [Page 20]
Installation of SAP Web AS – J2EE Add-In as a **distributed system**: Central instance, central services and database instance of the SAP Web AS ABAP+J2EE system are installed on **multiple** hosts	SAP Web AS – J2EE Add-In as Distributed System [Page 23]

Installation Option	Installation Checklist
Installation of dialog instance(s) for the SAP Web AS ABAP+J2EE system	Dialog Instance for SAP Web AS – J2EE Add-In [Page 26]

You might need to refer to the sections listed under Additional Information [Page 28] when installing your SAP system.

2. You follow the installation sequence exactly as shown in the checklists:
   a. If a step is required for your installation, you follow the link for that step to the corresponding section.
   b. You perform the procedure described there.
   c. After successfully completing the installation step, you mark the corresponding entry in the printed table with ✓to log the progress of your installation.
   d. You proceed with the next step listed in the checklist.

3.1 Installation Checklists for the SAP Web AS J2EE System

3.1.1 Installation Checklist for SAP Web AS – J2EE only (Central System)

Purpose

You use the following checklist when you want to install **SAP Web AS – J2EE only** on a **single host**.

There is no distributed installation for the SAP Web AS 6.30 J2EE system.

Prerequisites

You have planned the system configuration as described in Implementation Considerations [Page 10].

Process Flow

Installation Planning

✓	Action
	You obtain the required documentation [Page 29].
	You decide if you want to install install multiple components in one database (MCOD) [Page 32]. Be aware that you **cannot** install a Unicode SAP system with a non-Unicode SAP system in one database (MCOD).
	You decide on the optimal system configuration [Page 36].

	You check the hardware and software requirements [Page 43].  The installation host must meet the added requirements of all installation components

Installation Preparation

✔	Action
	You check the Windows file system [Page 54].
	You check the Windows domain structure [Page 54], if required.
	You reduce the size of the file cache [Page 55].
	You grant user rights for the installation [Page 55].
	You choose the SAP system IDs [Page 59], if required.
	You prepare the required CDs for the installation [Page 60].

Installation Process

✔	Action
	You install the MS SQL Server database server software [Page 63].  This action is **not** required if you install a system into an existing database (MCOD).
	You run SAPinst [Page 66] and select *J2EE only: SAP Web AS 6.30 for MS SQL Server (Central System)* to install the central instance, the database instance, and the central services on one host.  Make sure you start SAPinst from a newly created installation directory.  If you install a system into an existing database (MCOD), see section Installation of Multiple Components in One Database) [Page 32] for more information.  Do not patch the SAP J2EE Engine or SDM during the deployment. Only apply patches after the whole installation procedure of the SAP J2EE Engine has been finished successfully.
	You check the input for the installation [Page 69].

Post-Installation Activities

✔	Action
	Log off and log on again from your installation host.
	As the SAP system is running after the installation, you check that you can stop and start the SAP system [Page 82].

	You install the SAP license [Page 84].
	You install the SAP online documentation [Page 85].
	If you have copied installation CDs to your hard disk for an unattached installation, you can delete these files when the installation has successfully completed.
	To distribute requests between multiple SAP Web AS instances you require a load balancing mechanism. For more information, see the *SAP Service Marketplace* at the Internet address **service.sap.com/ti**. One possibility is to use the SAP Web Dispatcher that gets delivered with the SAP system software. For more information about its use and its configuration, see the following in the SAP Library [Page 31]: *J2EE Technology in SAP Web AS* → *Administration Manual* → *Server Infrastructure* → *Load Balancing Between Many J2EE Instances*.
	You check the SAP J2EE Engine documentation [Page 85].  Especially make sure that you check the mandatory post-installation procedures listed in the *Administration Manual* under *Installation Information* → *Post-Installation Procedures*.
	You perform a full installation backup [Page 86].
	You change passwords of created users [Page 87].

3.1.3 Installation Checklist for a J2EE Dialog Instance for SAP Web AS - J2EE only

Purpose

You only use the following checklist when you want to install a **J2EE dialog instance** for an **SAP Web AS J2EE system**.

Do **not** install J2EE dialog instances for an SAP Web AS ABAP+J2EE system.

Process Flow

Installation Planning

✔	Action
	You obtain the required documentation [Page 29].
	You check the hardware and software requirements [Page 43].

Installation Preparations

✔	Action
	You prepare the installation CDs [Page 60].

Installation Process

✓	Action
	You run SAPinst [Page 66] and select *J2EE only: SAP Web AS 6.30 J2EE Dialog Instance for MS SQL Server* to install the J2EE dialog instance.  Make sure you start SAPinst from a newly created installation directory.

Post-Installation Activities

✓	Action
	You start and stop the SAP system [Page 82].
	If you have copied installation CDs to your hard disk for an unattached installation, you can delete these files when the installation has successfully completed.
	You check the SAP J2EE Engine Documentation [Page 85].  Especially make sure that you check the mandatory post-installation procedures listed in the *Administration Manual* under *Installation Information* → *Post-Installation Procedures*.
	You perform a full installation backup [Page 86].
	You change passwords of created users [Page 87].

3.2 Installation Checklists for the SAP Web AS ABAP+J2EE System

3.2.1 Installation Checklist for SAP Web AS - J2EE Add-In (Central System)

You use the following checklist when you want to install **SAP Web AS – J2EE Add-In** on a **single host**.

You must perform this installation on the central instance host of an already existing SAP Web AS 6.20 SP25.

Prerequisites

- You have planned the system configuration as described in Implementation Considerations [Page 10].

Process Flow

Installation Planning

✓	Action
	An SAP system (ABAP) based on SAP Web AS 6.20 SP 25 or higher is a prerequisite for this installation. You can either use an existing SAP system based on

	SAP Web AS 6.20 or install a new SAP system based on SAP Web AS 6.20 according to the documentation *Installation Guide – <SAP Component> on Windows: MS SQL Server* available in SAP Service Marketplace at: `service.sap.com/instguides` → *<SAP Component>* → *<Release>*  If your existing SAP Web AS 6.20 includes an SAP J2EE Engine 6.20, the installation option SAP Web AS – J2EE Add-In will delete this SAP J2EE Engine 6.20 before installing the SAP J2EE Engine 6.30. If you want to migrate an application created in the SAP J2EE Engine 6.20, make sure that you read the information in the Migration Manual in the SAP J2EE Engine documentation [Page 85] before the installation. You check that the SAP system based on SAP Web AS 6.20 fulfills the following prerequisites: • Support package [Page 31] 25 or higher is installed • The latest SAP Web AS 6.20 kernel is installed
	If you installed a new SAP Web AS 6.20, make sure that you have performed the client copy [Page 31] to create a production client in your SAP system. This production client will be used for the communication user SAPJSF.
	You obtain the required documentation [Page 29].
	You decide on the optimal configuration for your SAP system [Page 36].
	You check the hardware and software requirements [Page 43].  The installation host must meet the added requirements of all installation components.

Installation Preparations

✔	Action
	Maintain your company address in your SAP system using transaction SU01. A maintained company address is mandatory for creating SAP system users.
	You prepare the installation CDs [Page 60].

Installation Process

✔	Action
	You check, if you have installed an MS SQL server database with the new collation. If you run your MS SQL Server database with the old collation, you have the following options: • You perform a homogeneous system copy to convert your database to the new collation. For more information, see the documentation *SAP Web AS Application Server 6.30 Homogeneous and Heterogeneous System copy* which you can find in the SAP Service Marketplace [Page 30]. • You install the MS SQL Server database [Page 63] with the new collation [Page 65]. In this case, we recommend to install a named instance [Page 35].

	You run SAPinst [Page 66] and select *J2EE Add-In: <Unicode> Finalize SAP Web AS 6.30 for MS SQL Server (Central System)* to install the J2EE engine, the database schema and the central services instance on the central instance host of the existing SAP system.  Make sure you start SAPinst from a newly created installation directory.  Do **not** patch the SAP J2EE Engine or SDM during the deployment. Only apply patches after the whole installation procedure of the SAP J2EE Engine has been finished successfully.
	You check the input for the installation [Page 69].

Post-Installation Activities

✓	Action
	Log off and on again from your installation host.
	As the SAP system is running after the installation, you check that you can stop and restart the SAP system [Page 82].
	You log on to the SAP system [Page 83].
	If you have copied installation CDs to your hard disk for an unattached installation, you can delete these files when the installation has successfully completed.
	After the installation, the SAP J2EE Engine is activated. If you do not want to use the SAP J2EE Engine, you can deactivate it. For more information, see "Deactivation of the SAP J2EE Engine" in Additional Information about the SAP J2EE Engine [Page 93].
	To distribute requests between multiple SAP Web AS instances you require a load-balancing mechanism. For more information, see the *SAP Service Marketplace* at the Internet address **`service.sap.com/ti`**. One possibility is to use the SAP Web Dispatcher delivered with the SAP system software. For more information, see the following in the SAP Library [Page 31]: *Client/Server Technology → Architecture of the SAP Web Application Server →SAP Web Dispatcher*.
	You check the SAP J2EE Engine documentation [Page 85].  Especially make sure that you check the mandatory post-installation procedures listed in the *Administration Manual* under *Installation Information → Post-Installation Procedures*.
	You perform a full installation backup [Page 86].
	You change passwords of created users [Page 87].

Additional Steps

✓	Action
	You can install one or more dialog instances [Page 26] if required.

3.2.2 Installation Checklist for SAP Web AS – J2EE Add-In (Distributed System)

Purpose

You use the following checklist when you want to install **SAP Web AS – J2EE Add-In** on **multiple hosts**.

There is no installation service required to prepare the SAP Web AS central instance for SAP Web AS – J2EE Add-In.

Prerequisites

- You have planned the system configuration as described in Implementation Considerations [Page 10].

Process Flow

1. You perform the following steps to install the **Central Services instance** on the **central services instance host**:

   If you perform the following steps on the database instance host of the SAP Web AS - J2EE Add-In installation, ignore all steps shaded grey.

   Central Services Checklist

   a. Installation Planning

✓	Action
	An SAP system (ABAP) based on SAP Web AS 6.20 SP 25 or higher is a prerequisite for this installation. You can either use an existing SAP system based on SAP Web AS 6.20 or install a new SAP system based on SAP Web AS 6.20 according to the documentation *Installation Guide – <SAP Component> on Windows: MS SQL Server* available in SAP Service Marketplace at the Internet address `service.sap.com/instguides` → *<SAP Component>* → *<Releas>* If your existing SAP Web AS 6.20 includes an SAP J2EE Engine 6.20, the installation option SAP Web AS – J2EE Add-In will delete this SAP J2EE Engine 6.20 before installing the SAP J2EE Engine 6.30. If you want to migrate an application created in the SAP J2EE Engine 6.20, make sure that you read the information in the Migration Manual in the SAP J2EE Engine documentation [Page 85] before the installation. You check that the SAP system based on SAP Web AS 6.20 fulfills the following prerequisites: • Support package [Page 31] 25 or higher is installed. • The latest SAP Web AS 6.20 kernel is installed.

	You obtain the required documentation [Page 29].
	If you installed a new SAP system based on SAP Web AS 6.20, make sure that you have performed the client copy [Page 31] to create a production client in your SAP system. This production client will be used for the communication user SAPJSF.
	You check the hardware and software requirements [Page 43].

b. Installation Preparations

✓	**Action**
	Maintain your company address in your SAP system using transaction SU01. A maintained company address is mandatory for creating SAP system users.
	You prepare the installation CDs [Page 60].

c. Installation Process

✓	**Action**
	You run SAPinst [Page 66] and select *J2EE Add-In: <Unicode> SAP Web AS 6.30 Central Services for MS SQL Server (Distributed System)*to install the central services:  Make sure you start SAPinst from a newly created installation directory.

d. Post-Installation Steps

✓	**Action**
	If you have copied installation CDs to your hard disk for an unattached installation, you can delete these files when the installation has successfully completed.

2. You perform the following steps to finalize the **central instance** installation on the **central instance host** of the already existing SAP Web AS 6.20:

With this option you install the J2EE Engine and the database schema into the database.

If you perform the following steps on the central services instance host of the SAP Web AS - J2EE Add-In installation, ignore all steps shaded grey.

Finalize the Central Instance Installation

a. Installation Planning

✓	Action
	You check, if you have installed an MS SQL server database with the new collation. If you run your MS SQL Server database with the old collation, you have the following options: • You perform a homogeneous system copy to convert your database to the new collation. For more information, see the documentation *SAP Web AS Application Server 6.30 Homogeneous and Heterogeneous System copy* which you can find in the SAP Service Marketplace [Page 30]. • You install the MS SQL Server database [Page 63] with the new collation [Page 65]. In this case, we recommend to install a named instance [Page 35].
	You obtain the required documentation [Page 29].
	You check the hardware and software requirements [Page 43].

b. Installation Preparations

✓	Action
	You prepare the installation CDs [Page 60].

c. Installation Process

✓	Action
	You run SAPinst [Page 66] and select *J2EE Add-In: <Unicode>Finalize Central Instance SAP Web AS 6.30 for MS SQL Server (Distributed System)* to finalize the central instance installation. Make sure you start SAPinst from a newly created installation directory.
	You check the input for the installation [Page 69].

d. Post-Installation Activities

✓	Action
	Log off and on again from your central instance host.
	As the SAP system is running after the installation, you check that you can stop and restart the SAP system [Page 82]
	You log on to the SAP system [Page 83]
	If you have copied installation CDs to your hard disk for an unattached installation, you can delete these files when the installation has successfully completed.

	To distribute requests between multiple SAP Web AS instances you require a load-balancing mechanism. For more information, see the *SAP Service Marketplace* at the Internet address **`service.sap.com/ti`**. One possibility is to use the SAP Web Dispatcher delivered with the SAP system software. For more information, see the following in the SAP Library [Page 31]: *Client/Server Technology → Architecture of the SAP Web Application Server → SAP Web Dispatcher*.
	After the installation, the SAP J2EE Engine is activated. If you do not want to use the SAP J2EE Engine, you can deactivate it. For more information, see "Deactivation of the SAP J2EE Engine" in Additional Information about the SAP J2EE Engine [Page 93].
	You check the SAP J2EE Engine documentation [Page 85]. Especially make sure that you check the mandatory post-installation procedures listed in the *Administration Manual* under *Installation Information → Post-Installation Procedures*.
	You perform a full installation backup [Page 86].
	You change passwords of created users [Page 87].

e. Additional Steps

✓	**Action**
	After the installation, you can install one or more dialog instances [Page 26] if required.

3.2.3 Installation Checklist for a Dialog Instance for SAP Web AS – J2EE Add-In

Purpose

You use the following checklist when you want to install the J2EE part of a **dialog instance** for an **SAP Web AS ABAP+J2EE system**.

Prerequisites

There is an already existing dialog instance (ABAP). If not, you have to install it as described in the documentation *Installation Guide – <SAP Component> on Windows: MS SQL Server*, section *Installation Checklist for a Dialog Instance*.

Make sure that the SAP J2EE Engine installation for the corresponding SAP system is finished and that the SAP system is up and running.

Process Flow

Installation Planning

✔	Action
	You obtain the required documentation [Page 29].
	You check the hardware and software requirements [Page 43].

Installation Preparation

✔	Action
	If you install the dialog instance on a separate host, you grant user rights for the installation [Page 55].
	You prepare the installation CDs [Page 60].

Installation Process

✔	Action
	You run SAPinst [Page 66] and select *J2EE Add-In: <Unicode> Finalize Dialog Instance SAP Web AS 6.30 for MS SQL Server* to finalize the dialog instance installation.  Make sure you start SAPinst from a newly created installation directory.
	You check the input for the installation [Page 69].

Post-Installation Activities

✔	Action
	You start and stop the SAP system [Page 82].
	You log on to the SAP system [Page 83].
	If you have copied installation CDs to your hard disk for an unattended installation, you can delete these files when the installation has successfully completed.
	Make sure that the SAP system (including its SAP J2EE Engines) is up and running before dialog instances (with their SAP J2EE Engines) are started or restarted.
	You check the SAP J2EE Engine documentation [Page 85].  Especially make sure that you check the mandatory post-installation procedures listed in the *Administration Manual* under *Installation Information* → *Post-Installation Procedures*.
	You perform a full installation backup [Page 86].
	After the installation, the SAP J2EE Engine is activated. If you do not want to use the SAP J2EE Engine, you can deactivate it. See section Additional Information about the SAP J2EE Engine [Page 93] → *Deactivation of the SAP J2EE Engine*.
	You change passwords of created users [Page 87].

3.3 Additional Information

You might need to refer to the optional sections below when installing your SAP system.

✔	Action
	Performing a Remote Installation with SAPinst [Page 89]
	Continuing an Interrupted Installation with SAPinst [Page 91]
	Additional Information about the SAP J2EE Engine [Page 93]
	Deletion of an SAP System Installation [Page 97]

4 Installation Planning

Make sure that you read the Installation Checklists [Page 16] before you start the installation planning.

4.1 Required Documentation

The following sections describe the documentation you require for the installation.

- SAP Installation Notes
- SAPinst Troubleshooting Guide
- Information in the SAP Service Marketplace
- Accessing the SAP Library

4.1.1 SAP Installation Notes

You **must** read the following SAP Notes **before** you start the installation. They contain the most recent information regarding 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 in the *SAP Service Marketplace* at the Internet address:

`service.sap.com/notes`

Note Number	Title
658167	INST:SAP J2EE Engine f. SAP Systems based on Web AS 6.30/WIN
584524	INST: SAP Web AS 6.30 on Windows - General
611361	Hostnames of SAP servers
584539	INST: SAP Web AS 6.30 on Windows - MS SQL Server
79991	Multi Language Support / Unicode
45619	R/3 with several languages or typefaces
42305	RSCPINST (NLS installation tool)

4.1.2 SAPinst Troubleshooting Guide

The *SAPinst Troubleshooting Guide* provides up-to-date information about how to avoid installation failure and what to do if a failure occurs.

For more information, see the *SAP Service Marketplace* at the Internet address:

`service.sap.com/sapinstfeedback`

We recommend that you read this documentation before starting the installation.

4.1.3 Information in the SAP Service Marketplace

Information on the following areas is available in the *SAP Service Marketplace*.

Documents that are also delivered on the installation CDs are marked with "[<type> CD]". For example, "[Documentation CD]".

Description	Internet Address	Title
SAP Notes	**service.sap.com/notes**	–
Released platforms	**service.sap.com/platforms**	–
Installation of SAP NetWeaver Developer Workplace	**service.sap.com/instguides** → *SAP Web Application Server* → *Release 6.30*	*Installation Guide – SAP NetWeaver Developer Workplace*.
Installation of SAP NetWeaver Developer Studio	**service.sap.com/instguides** → *SAP Web Application Server* → *Release 6.30*	*Installation Guide – SAP NetWeaver Developer Studio*
Unicode SAP systems and their availability	**service.sap.com/unicode** See also **SAP Note 79991**.	–
Technical infrastructure – configuration scenarios and related aspects such as security, load balancing, availability, and caching	**service.sap.com/ti**	–
Network infrastructure	**service.sap.com/network**	–
System sizing	**service.sap.com/sizing**	*Quick Sizer* tool
Front-end installation	**service.sap.com/instguides**	*Front End Installation Guide* [Presentation CD]
High availability	**service.sap.com/ha**	–
Homogeneous system copy	**service.sap.com/instguides** → *SAP Web Application Server* → *<release>*	*Homogeneous and Heterogeneous System Copy for SAP Systems based on SAP Web Application Server 6.20*
Heterogeneous system copy	**service.sap.com/osdbmigration**	*Homogeneous and Heterogeneous System Copy for SAP Systems based on SAP Web Application Server 6.20*
Security	**service.sap.com/security**	–

4.1.4 Accessing the SAP Library

For more information on the SAP Web Application Server, access the SAP Library from any of the following:

- An **SAP system** if you have installed the online documentation:
  a. Choose *Help* → *SAP Library*.
     The browser starts.
  b. In the browser, choose *SAP NetWeaver Components* → *SAP Web Application Server*.
- The **SAP Help Portal** at the Internet address:
  `help.sap.com`
  a. Choose *SAP Web Application Server* → *SAP Web Application Server 6.30*.
  b. Select the required language.
  c. Choose *SAP NetWeaver Components* → *SAP Web Application Server*.
- The **help files on the online documentation CDs**
  If you want to view the help files in HTML-Help format from the online documentation CDs, you need a PC running Microsoft Windows to install the HTMLHelp Viewer.

4.2 Importing Support Packages

Use

You use this procedure to import Support Packages for your SAP system.

Procedure

1. To import a Support Package, download the Support Packages from the *SAP Service Marketplace* at the Internet address:
   `service.sap.com/patches`
2. Apply Support Packages to your SAP system with the help of the Support Package Manager (formerly called SAP Patch Manager, transaction SPAM).

For more information on availability of Support Packages, see the *SAP Service Marketplace* at the Internet address:

`service.sap.com/ocs-schedules`

The SAP Note Assistant lets you load, implement, and organize individual SAP Notes efficiently. It also recognizes dependencies between SAP Notes, Support Packages, and modifications.
For more information, see the *SAP Service Marketplace* at the Internet address:
`service.sap.com/noteassistant`

4.3 Performing the Client Copy

Use

You use this procedure to perform the client copy, which consists of the following steps:

- Maintain the client with transaction SCC4
- Copy the client with local transaction SCCL
- Copy the log files with transaction SCC3

Procedure

For more detailed information on how to perform the client copy, see the separate documentation in the SAP Library [Page 31]:

Change and Transport System → Client Copy and Transport

4.4 Database Installation for Multiple Components

Each SAP system in your mySAP environment needs its own database back end. With MS SQL Server you have the following options to distribute your systems across the available hardware resources. They differ with respect to hardware requirements, database administration, flexibility, and scalability.

- Exclusive database server

  In this system landscape, each database server (with or without a central instance) hosts exactly one SAP database. From an installation planning perspective, this is the simplest solution. It is the most scalable setup, but it requires the most hardware. This option is typically chosen for medium-sized and large production and development systems.

- Named SQL Server instances

  With the use of named instances, you can install multiple, independent SQL Server instances on a single database server. These instances share CPU, memory and disk resources, but from an administration point of view are completely independent from each other. This option, like the following two, requires careful hardware sizing to avoid performance bottlenecks and scalability problems.

- Multiple databases in a default SQL Server instance

  SQL Server lets you operate multiple user databases in a single SQL Server instance. Contrary to named instances, the databases share the temporary system database tempdb, the SQL Server Windows process, and the SQL Server memory pool. Therefore, this setup is less scalable than named instances, but at the same time requires less system resources. It can be a flexible solution for small and medium-sized systems.

- Multiple Components in One Database (MCOD)

  Multiple database back ends are stored in the same database, each in its own database schema. For the database administrator, the database containing these multiple components looks very much like a single entity. While this approach is not as flexible as the other options, its simplicity makes it an attractive solution for small mySAP environments.

In the following two chapters we discuss MCOD and named instances in more detail. The section on named instances briefly describes multiple databases in a single instance.

4.4.1 Installation of Multiple Components in One Database

Use

You can install **multiple** SAP systems in a **single** database. This is called Multiple Components on One Database (MCOD).

MCOD is scheduled to be available with all mySAP.com components. We are releasing this technology on all the major databases for the SAP system, in line with our commitment to deliver platform-independent solutions.

Using this technology is as easy as installing a separate component. No extra effort is required because the MCOD installation is fully integrated into the standard installation procedure. MCOD is not an additional installation service. Instead, it is an option of the database instance installation.

Prerequisites

- For more information on MCOD and its availability on different platforms, see the SAP Service Marketplace at the Internet address:

  `service.sap.com/mcod`

- Improved sizing required.

  In general, you calculate the CPU usage for an MCOD database by adding up the CPU usage for each individual SAP system. The same applies to memory resources and disk space.

  You can size multiple components on one database by sizing each individual component using the SAP Quick Sizer and then adding the requirements together. For more information on the SAP Quick Sizer, see the SAP Service Marketplace at the Internet address:

  `service.sap.com/quicksizer`

Features

- Reduced effort for database backup and restore.
- Consistent system landscape for backup, system copy, administration, and recovery.
- Increased security and reduced database failure for multiple SAP systems due to monitoring and administration of only one database.
- In an MCOD landscape you can upgrade a single component independently from the other components running in the same database, assuming that the upgraded component runs on the same database version. However, if you need to restore a backup, be aware that all other components are also affected.
- Special MCOD considerations and differences from the standard procedure are listed where relevant in the installation documentation.

Constraints

- We strongly recommend that you test MCOD in a test or development system. We recommend that you run MCOD systems in the same context and do **not** mix test, development, and production in the same MCOD environment. In the event of database failure, all SAP systems running on the single database are affected.

- Copying a single component from an MCOD landscape to another database at database level is not possible.
- De-installing a single component from an MCOD landscape requires some additional steps. You can use SAPNet -- R/3 Frontend to request help with these tasks.
- You **cannot** install multiple components on one database in a cluster.

Activities

With MCOD we distinguish two scenarios:

- The installation of an SAP system in a new database
- The installation of an additional SAP system in an existing database

All differences in the installation procedure for MCOD are marked in the corresponding sections of this documentation.

Installing the First SAP System into a New Database

1. Perform the central instance installation as usual.

   You install the central instance with SAP system ID `C11`.
2. Start the database instance installation.
3. When you are prompted for *Database Installation Type*, choose *Install (first) SAPsystem into a new database*

   You install the database instance `C11`. On some platforms, you can choose a database instance ID that is different from the SAP system ID, for example `D11`.
4. Finish the installation.

Installing an additional SAP System into an Existing Database

1. Perform the central instance installation as usual.

   You install the central instance with SAP system ID `C12`.
2. Start the database instance installation.
3. When you are prompted for *Database Instance Type*, choose *Install (additional) SAP system into an existing database*.
4. When SAPinst prompts you for the *Name of the database instance*, enter **exactly** the database instance `<DBSID>` of the existing database.

   When SAPinst prompts for the database instance name, enter `C11`.
5. Finish the installation.

Due to the MCOD installation, some installation steps are not required and therefore do not appear. These steps are marked in section "Input for the Installation”.

4.4.2 Default or Named MS SQL Server Instances

When you install MS SQL Server 2000, you can install two different types of instances:

- Default
- Named

When you plan your system configuration, you must decide which instance type you want to install. The following clarifies the difference between the two.

Default Instance

A **default** instance is the most common form of an MS SQL Server 2000 installation in an SAP environment. Typically, one MS SQL Server instance is installed together with a single SAP database. In this configuration, all MS SQL Server components and functionality are exclusively available for the SAP database.

In a less frequently implemented configuration, a single MS SQL Server instance is installed together with more than one SAP database on the same computer. In this type of configuration, the MS SQL Server components such as executables, system databases and utilities **exist only once** and have to be shared by all SAP databases. As all the databases on the computer have to be managed with a single copy of the MS SQL Server, certain administrative tasks on one database cannot be performed in isolation without affecting the other databases.

A default instance is recommended, if you plan to install only one SAP database instance on a computer.

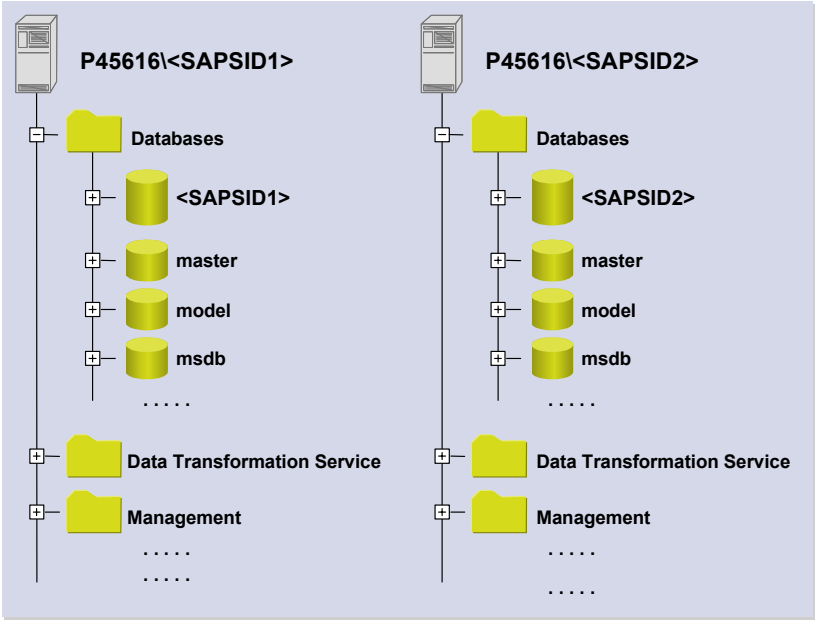
Named Instance

A **named** instance installation allows the installation of multiple, separate MS SQL Server instances with corresponding SAP databases on the same computer. Multiple named instances can coexist on the same computer and function in isolation of each other. During the installation, each one is given a name that is the same as the SAP system name, thus enabling a unique assignment of instances to SAP databases.

The advantage of named instances is that you can set up several SAP databases on the same machine and administer each one separately with its own copy of the MS SQL Server. The main components of the MS SQL Server are available exclusively for each database and can be used only by that database. Only a few resources such as client utilities have to be shared by all the databases because they are only installed once.

A named instance is recommended, if you plan to install more than one SAP database instance on the same machine.

The following graphic illustrates a computer where two MS SQL Server named instances have been installed for two SAP databases, `<SAPSID1>` and `<SAPSID2>`.



4.5 System Configuration

- You and your hardware partner generally plan the system configuration before the installation.
- You and your hardware partner work out a high-performance configuration based on sizing information that reflects the system workload, such as:
  - The set of applications to be deployed
  - How intensively the applications are to be used
  - The number of users
- You decide whether you want to perform a domain or local installation

  The installation types differ as follows:
  - Local installation

    You need to be `Local Administrator` of the machine involved. In a local installation, all Windows account and user information is stored locally on one host and is not visible to any other hosts in the system.

    If the SAP system is to run on a **single** machine, you can perform a local installation.

    Performing a local installation for a distributed system leads to authorization problems that have to be resolved.
  - Domain installation

    You need to be `Domain Administrator` of the domain involved, and all machines in the system must belong to the same domain. In a domain installation, the user information is stored centrally on the domain controller and is accessible to all hosts in the system.

If the system is to be distributed across **more than one** machine, we strongly recommend a domain installation.

If for any reason, you are not granted domain administration rights, you can perform the installation as a domain user who is a member of the local administrator group. However, the domain administrator has to prepare the system appropriately for you. For more information, see Performing a Domain Installation Without Being a Domain Administrator [Page 56].

See also:

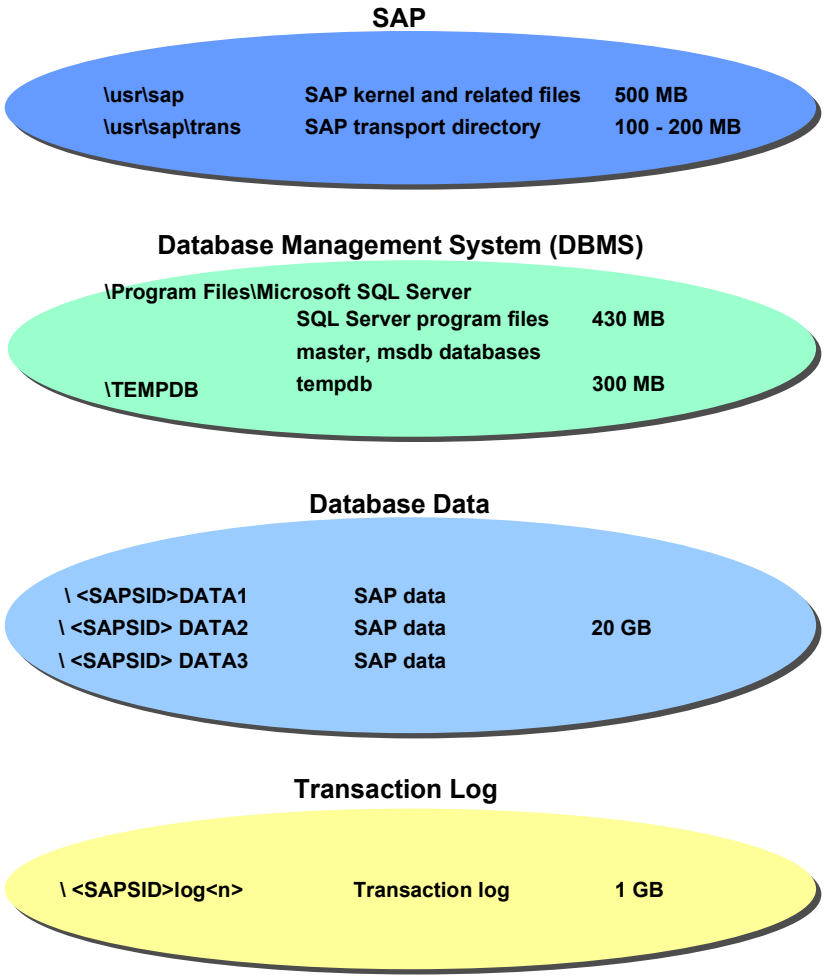
Granting User Rights for the Installation [Page 55]

4.5.1 Distribution of Components to Disks

When you install the SAP system with an MS SQL Server database, the main directories required for the system are automatically created. The following graphic gives you an overview of the main SAP system components and directories, their purpose, and the amount of free space they initially require. A good distribution of these to disks ensures that:

- Enough free space is available for system growth
- The data is secure
- Performance is good

System Components and Directories



Database Components

When you install an SAP system with MS SQL Sever, the central components of the database are the SQL Server **program files**, **tempdb files**, **SAP data files** and **transaction log files**. The log files record all the changes made to the database to enable restore and recovery. The `tempdb` holds all temporary tables and stored procedures. The data files contain the data for the SAP system.

- SAP Data Files

  The data files are created by default in the directories `\<SAPSID>DATA<N>`. The first data file is called `<SAPSID>DATA1.mdf` and subsequent files`<SAPSID>DATA<N>.ndf`, where `<N>` denotes the number of the file. You can change the default value of these directories. The minimum space required for all files is 20 GB.

  For security reasons, locate the data files on a separate disk system. They should not be included in the same disk system as the log files or other SQL server program and database files. To ensure data redundancy, SAP recommends the use of RAID 5.

- Transaction Log File

The transaction log for the database is created by default in the directory `\<SAPSID>LOG1`. The log file is called `<SAPSID>LOG1.ldf` and requires a minimum of 1 GB space. You can change the default directory of the transaction log directory.

The transaction log file records all the changes made to the database and, if required, enables modifications to be redone or undone. It plays a crucial role when the database has to be restored due to database damage or media failure. For this reason it should be stored very securely. SAP recommends the use of RAID 1 which implements hardware-based mirroring.

- Program Files

  The files other than the SAP data and transaction log files are created in the subdirectories of `\Program Files\Microsoft SQL Server`. These include the SQL Server program files and the `master`, `msdb` and `tempdb` database files. Locate these on a separate, third, disk system and not on the same disks as the transaction log files or SAP data files. SAP recommends the use of RAID 1.

  For performance reasons, it is advisable to place the `tempdb` files on a fast disk system. This is particularly recommended because the `tempdb` is frequently accessed during SQL Server operation and could otherwise affect performance.

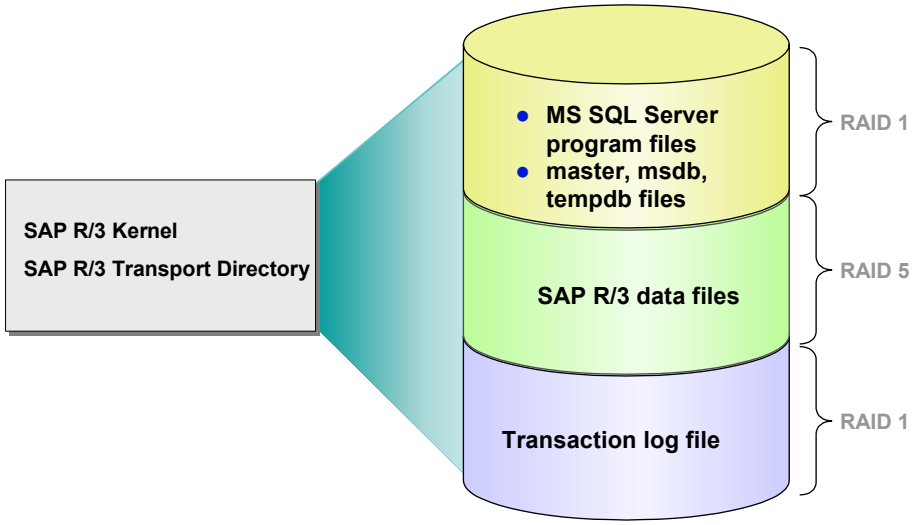
  After the initial installation of the database software, the `tempdb` is located in a subdirectory of `\Program Files\Microsoft SQL Server`. However later, when SAPinst builds and loads the database, it is transferred to a new `\TEMPDB` directory and extended to a size of 300 MB.

4.5.2  Standard Configuration

The following graphic illustrates how the main directories that are created during the installation can be distributed to RAID arrays. The distribution is suitable for an average-sized production system. Keep in mind that this is only an example and that no single solution is fitting for all environments.

The SAP kernel files and the transport directory can be assigned to any of the arrays depicted, but must both be located on the same array. The transport directory does not necessarily have to reside on the central instance host.

Distribution of Components to RAID Arrays



Distribution of Directories to Arrays

Array 1	`\Program files\Microsoft SQL Server` `\TEMPDB`

Array 2	`\<SAPSID>DATA1`
	`\<SAPSID>DATA2`
	`\<SAPSID>DATA3`

Array 3	`\<SAPSID>log1`

Optimizing Performance

If you wish to optimize performance, isolate the `tempdb` on a separate, fast disk. This improves performance significantly because the `tempdb` is continually accessed during MS SQL Server operation.

A further option for improving performance is to place the Windows paging file on a separate, fast disk.

4.5.3 SAP Directories

Definition

The following SAP directory is created during the J2EE Add-In installation:

- `\usr\sap\<sapsid>\<instance_abap>\j2ee`

  This directory is global, that is, it is accessed by all of the hosts in the SAP system. Therefore, it has a name that follow the Universal Naming Convention (UNC).

We distinguish between a global, local, and database host:

- Global host

  Machine on which the central instance is running

- Local host

  Current machine on which an SAP instance is running

- DB host

  Machine on which the database server is running

Use

\usr\sap

The SAP software is stored in the `\usr\sap` directory:

- On global hosts, the `\usr\sap` directory contains global and local (instance-specific) data.
- On local hosts, `\usr\sap` contains only instance-specific data and copies of the SAP executables. The executables on the local host are replicated from those on the global host each time the local instance is started.

The installation program creates the `\usr\sap` directory on the global host and shares it with the names `sapmnt` and `saploc`. The same directory on the local host is shared as `saploc`.

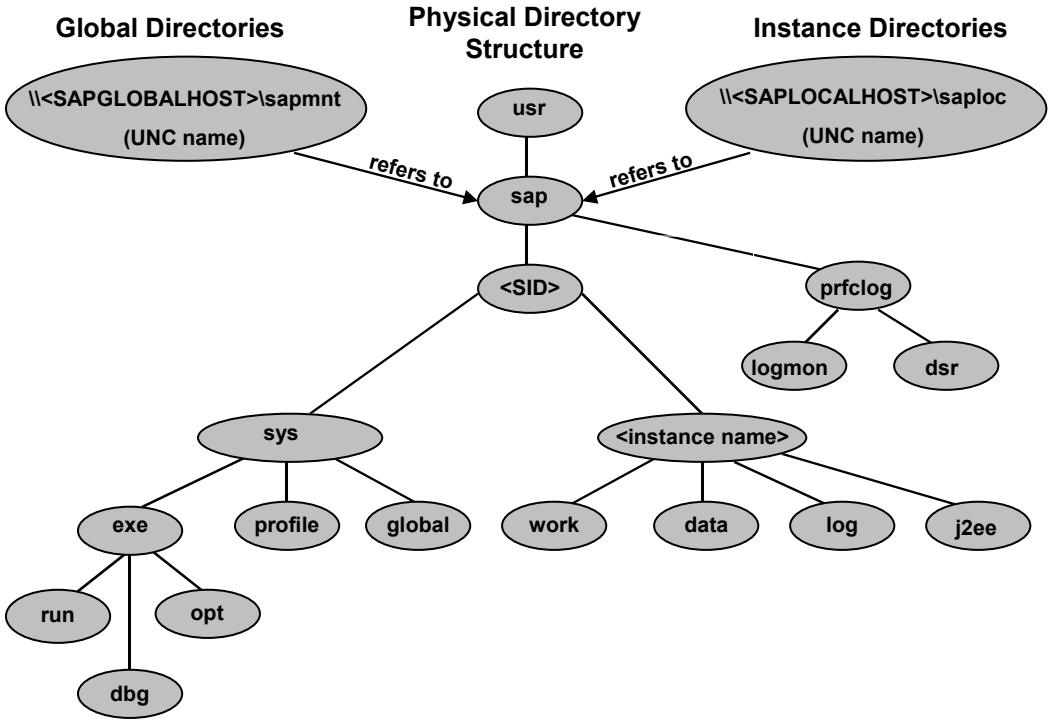
Since SAP traces for the instance are created in `\usr\sap`, make sure there is sufficient space available in this directory. Changes in SAP profiles can also affect the disk space.
If you create the subdirectory .....`\SYS` (global data) locally on application or front-end servers, you have to distribute the software for the SAP system manually when upgrading to a new SAP release. SAP does **not** support this.

Structure

The following graphics show how the physical directory `\usr\sap` is shared on the global host and in a distributed installation. In both cases, UNC names are used as follows:

- `\\<SAPGLOBALHOST>\sapmnt` to access global directories
- `\\<SAPLOCALHOST>\saploc` to access local instance-specific data

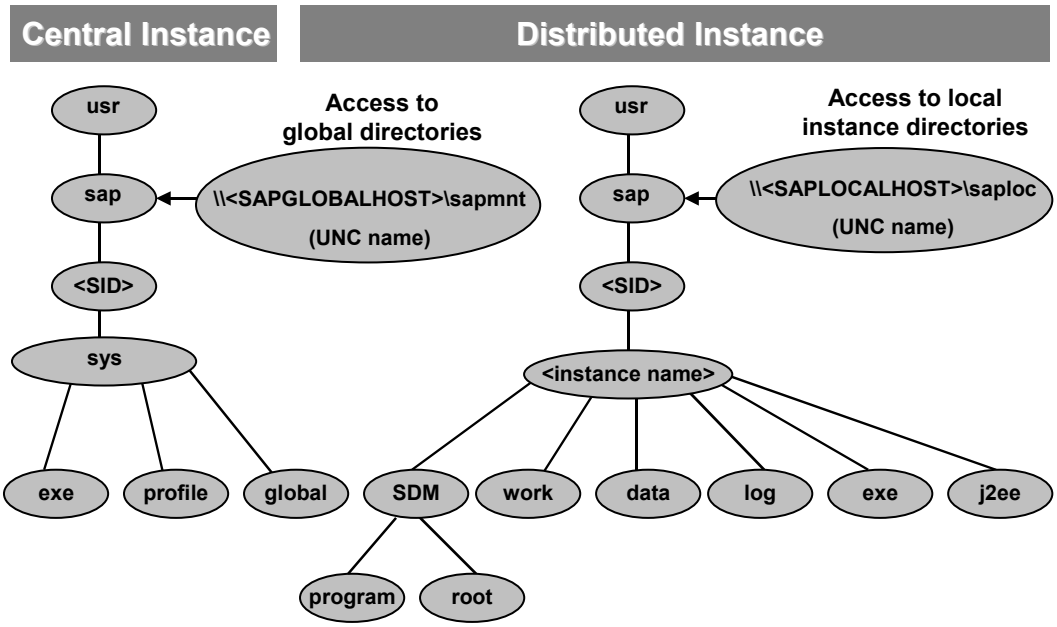
Directory Structure on the Global Host



The above graphic shows the directory structure on the global host. The global data is stored in the global directories on the global host and physically exists only once for each SAP system.

Other computers access the data using the UNC name, `\\<SAPGLOBALHOST>\sapmnt`, where `SAPGLOBALHOST` is replaced by the SAP system with the name of the global host. The global host accesses its own instance-specific data using the UNC name `\\<SAPLOCALHOST>\saploc`. On the global host, the parameters `SAPGLOBALHOST` and `SAPLOCALHOST` have the **same** value.

Directory Structure of a Distributed Installation



The above graphic shows how the central instance, which runs on the global host, interacts with a distributed instance running on another computer. On a distributed instance host, the parameters `SAPGLOBALHOST` and `SAPLOCALHOST` have **different** values. Distributed instances use `SAPGLOBALHOST` to access global data on a separate host, that is, the global host with the central instance.

4.6 Hardware and Software Requirements

Purpose

You check the hardware and software requirements using the requirement checklists in the following sections. They give the **minimum** requirements for small SAP system installations and do **not** include customer data. Depending on the amount of data involved, the requirements might change. For a more precise sizing definition that reflects your particular system load:

- Use the *SAP Quick Sizer* tool that is available in the *SAP Service Marketplace*. You enter information on your planned system and the tool calculates the requirements. For more information, see the SAP Service Marketplace at the Internet address:

  `service.sap.com/sizing`

- Contact a hardware vendor. The vendor can analyze the load and calculate suitable hardware sizing for you.
- Contact the person in charge of installation, or your Competence Center, or your Microsoft representative.

Prerequisites

- Use Windows 2000 or Windows Server 2003 as the operating system

  With Windows 2000 or Windows Server 2003, you **must** use the **English (International)** version of the operating system, but you can use a different language for the graphical user interface (GUI). For more information, see **SAP Note 362379**.
  You specify the operating system language when you install the operating system

- For remote support, the remote connection specified in the contract agreement must be available before installation. The Internet address setup at SAP and registration are dealt with during the installation.
- You are only allowed to install an SAP system on certified hardware. AddOn Technology Center for SAP (AddOn TCS) certifies hardware platforms for SAP on specified releases of Microsoft Windows 2000 or Windows Server 2003. You can then run the SAP system on the respective platform for all the combinations of the SAP system and databases released by SAP for the specified Windows release. You can find more information about certified platforms at the Internet address:

  `saponwin.com`

- For more information on the released operating systems, see **SAP Note 407328**.

Process Flow

1. For a **central system** and **standalone database** system, see the following checklists:
   - Central instance [Page 44]
   - Database instance [Page 47]
   - SAP Central Services instance
   - Dialog instance [Page 51], if you want to install additional (J2EE) dialog instances

   If you install multiple SAP system instances on one host, you need to add up the requirements.
2. You check the network requirements. For more information, see the documentation *Network Integration of SAP Servers* in the *SAP Service Marketplace* at the Internet address:

   `service.sap.com/network` → *Network Integration Guides*

   For more information on SAP software in PC networks, see **SAP Note 5324**.

   If you do not fully meet the relevant requirements, you might experience problems when working with the SAP system.

4.6.1 Requirements Checklist for the Central Instance

The central instance host must meet the following requirements:

Requirement Type	Requirement
Hardware	• Suitable backup system • Minimum disk space o J2EE Engine database: 850 MB o **for a central system** installation (J2EE Engine, central instance and database instance, central services instance are installed on one host): *non-Unicode*: 12 GB (not including virtual memory) on at least 3 physically separate disks *Unicode:* 20 GB (not including virtual memory) on at least 3 physically separate disks o 650 MB of temporary disk space for every required required installation CD [Page 60] that you have to copy to a local hard disk To check disk space: a. Choose *Start* → Programs → *Administrative Tools* → *Computer Management* → *Disk Management*. b. Right-click the local drive and choose *Properties*. • Minimum RAM: o Central instance of a SAP Web AS J2EE system: ▪ 512 MB o Central instance of a SAP Web AS ABAP+J2EE system: ▪ Non-Unicode SAP system: 768 MB ▪ Unicode SAP system: 1.2 GB o SAP J2EE Engine: Between 64 MB and 4096 MB, depending on the load of your SAP system.

Requirement Type	Requirement
	 Do **not** enter a value larger than the maximum Java heap size of your platform. For more information, see the documentation for your Java Development Kit (JDK). To check RAM, in the Windows Explorer choose *Help* → *About Windows*. • Paging File Size (also known as virtual memory): 1 GB plus 3 times RAM. Maximum required is 10 GB. To check paging file size: a. Right-click *My Computer* and choose *Properties.* b. Choose *Advanced* → *Performance Options.* c. If required, in section *Virtual Memory*, choose *Change.*
Software	○ MS SQL Server 2000 Enterprise Edition (server software) ○ Service Pack 3 for MS SQL Server  For more information on the current Service Pack for MS SQL Server, read **SAP Notes 62988** and **529150**. ○ The new collation for MS SQL Server [Page 65] • English international version of one of the following: ○ Windows Server 2003 Enterprise Edition (32 bit) ○ Windows Server 2003 Datacenter Edition (32 bit) ○ Windows 2000 Advanced Server ○ Windows 2000 Data Center Server  Note the following: For any version of Windows 2000, you need service pack 3. For more information on the latest service pack supported by SAP,

Requirement Type	Requirement
	see **SAP Note 30478**. To check your Windows version: a. Choose *Start* → *Programs* → *Accessories* → *Command Prompt* b. Enter the command `winver` • Suitable Windows Resource Kit is strongly recommended
Other	• Make sure that the host name fulfills the requirements listed in **SAP Note 611361**. For example, the host name must not be longer than 13 characters. • If you want to install a printer on a decentralized host for the SAP system, make sure that the printer can be accessed under Windows. • Check that the requirements of network, dialog instance, and operating system are met.

4.6.2 Requirements Checklist for the Database Instance

The database instance host must meet the following requirements:

Requirement Type	Requirement
Hardware	• Suitable backup system • Minimum disk space ○ *non-Unicode:* 9 GB (not including virtual memory) on at least 3 physically separate disks ○ *Unicode:* 14 GB (not including virtual memory) on at least 3 physically separate disks ○ 650 MB of temporary disk space for every required installation CD [Page 60] that you have to copy to a local hard disk. To check disk space: a. Choose *Start* → *Programs* → *Administrative Tools* →

	Computer Management → *Disk Management*. b. Right-click the local drive and choose *Properties.* • Minimum RAM: ○ *non-Unicode* SAP system: 512 MB ○ *Unicode* SAP system: 1 GB To check RAM, in the Windows Explorer choose *Help* → *About Windows* • Paging file size (also known as virtual memory) of 1.5 times RAM (recommended by Microsoft) To check: a. Right-click *My Computer* and choose *Properties*. b. Choose *Advanced* → *Performance Options*. c. If required, in section *Virtual Memory*, choose *Change.*
Software	• MS SQL Server 2000 Enterprise Edition: Server Software • Service Pack 3 for MS SQL Server  For more information on the current Service Pack, read **SAP Note 62988** and **529150**. • The new collation for MS SQL Server [Page 65] • English international version of one of the following: ○ Windows Server 2003 Enterprise Edition (32 bit) ○ Windows Server 2003 Datacenter Edition (32 bit) ○ Windows 2000 Advanced Server ○ Windows 2000 Data Center Server  For any version of Windows 2000, you need service pack

	3. For more information on the latest service pack supported by SAP, see **SAP Note 30478**. To check your Windows version: a. Choose *Start* → *Programs* → *Accessories* → *Command Prompt*. b. Enter the command `winver` • Suitable Windows Resource Kit is strongly recommended.
Other	• Make sure that the host name fulfills the requirements listed in **SAP Note 611361**. For example, the host name must not be longer than 13 characters. • If you want to install a printer on a decentralized host for the SAP system, make sure that the printer can be accessed under Windows. • Check that the network, dialog instance, and operating system requirements are met

4.6.3 Requirements Checklist for SAP Central Services Instance

The SAP Central Services instance host must meet the following requirements:

Requirement Type	Requirement
Hardware	• Suitable backup system • Minimum disk space ○ Central services instance: 2 GB (not including virtual memory) ○ 650 MB of temporary disk space for every required installation CD [Page 60] that you have to copy to a local hard disk). To check disk space: a. Choose *Start* → *Programs* → *Administrative Tools* → *Computer Management* → *Disk Management*. b. Right-click the local drive and choose *Properties*. • Minimum RAM: ○ Non-Unicode SAP system: 512 MB ○ Unicode SAP system: 1 GB ○ SAP J2EE Engine: between 64 MB and 512 MB, depending on the load of your SAP system. Do **not** enter a value larger than the maximum Java heap size of your platform. For more information, see the documentation for your Java Development Kit (JDK). c. To check RAM, in the Windows Explorer choose *Help* → *About Windows*.
Software	• English international version of one of the following: ○ Windows Server 2003 Enterprise Edition (32 bit) ○ Windows Server 2003 Datacenter Edition (32 bit)

	○ Windows 2000 Advanced Server ○ Windows 2000 Data Center Server  Note the following: For any version of Windows 2000, you need service pack 3. For more information on the latest service pack supported by SAP, see **SAP Note 30478**. To check the Windows version: a. Choose Start → Programs → Accessories → Command Prompt. b. Enter the command `winver` • Suitable Windows Resource Kit is strongly recommended
Other	• Make sure that the host name fulfills the requirements listed in **SAP Note 611361**. For example, the host name must not be longer than 13 characters. • If you want to install a printer on a decentralized host for the SAP system, make sure that the printer can be accessed under Windows. • Check that the network, dialog instance, and operating system requirements are met.

4.6.4  Requirements Checklist for a (J2EE) Dialog Instance

The (J2EE) dialog instance host must meet the following requirements:

Requirement Type	Requirement
Hardware	• Minimum disk space ○ Dialog instance: 4 GB (not including virtual memory) ○ 650 MB of temporary disk space for every required installation CD [Page 60] that you have to copy to a local hard disk). To check disk space:

	a. Choose *Start* → *Programs* → *Administrative Tools* → *Computer Management* → *Disk Management*. b. Right-click the local drive and choose *Properties.* • Minimum RAM: ○ Dialog instance for an SAP Web AS J2EE system: ▪ 256 MB ○ Dialog instance for an SAP Web AS ABAP+J2EE system: ▪ *Non-Unicode* SAP system: 512 MB ▪ *Unicode* SAP system: 1 GB ○ SAP J2EE Engine: between 64 MB and 512 MB, depending on the load of your SAP system.  Make sure you do not enter a value larger than the maximum Java heap size of your platform. For more information, see the documentation for your Java Development Kit (JDK). To check RAM, in the Windows Explorer choose *Help* → *About Windows*. • Paging File Size (also known as virtual memory): 1 GB plus 3 times RAM. Maximum required is 10 GB. To check paging file size: a. Right-click *My Computer* and choose *Properties.* b. Choose *Advanced* → *Performance Options.* c. If required, in section *Virtual Memory*, choose *Change.*
Software	• MS SQL Server 2000 Enterprise Edition: Client Tools Only software • Service Pack 3 for MS SQL Server  For more information on the

	current Service Pack for MS SQL Server, read **SAP Notes 62988** and **529150**. • English international version of one of the following: ○ Windows Server 2003 Enterprise Edition (32 bit) ○ Windows Server 2003 Datacenter Edition (32 bit) ○ Windows 2000 Advanced Server ○ Windows 2000 Data Center Server  Note the following: For any version of Windows 2000, you need service pack 3. For more information on the latest service pack supported by SAP, see **SAP Note 30478**. To check the Windows version: a. Choose *Start* → *Programs* → *Accessories* → *Command Prompt.* b. Enter the command **`winver`** • Suitable Windows Resource Kit is strongly recommended
Other	• Make sure that the host name fulfills the requirements listed in **SAP Note 611361**. For example, the host name must not be longer than 13 characters. • If you want to install a printer on a decentralized host for the SAP system, make sure that the printer can be accessed under Windows. • Check that the network, dialog instance, and operating system requirements are met.

5 Installation Preparations

Make sure that you read the Installation Checklists [Page 16] before you start the installation preparations.

5.1 Checking for the Windows File System

Use

You need to check that you are using the Windows File System (NTFS) on hosts where you want to install the SAP system and database. NTFS supports full Windows security and long file names.

You **must** use NTFS for an SAP system installation.
Do **not** install the SAP directories on an FAT partition.

Procedure

1. Open the *Windows Explorer*.
2. Select the root directory.
3. Choose *File* → *Properties* → *General*.

   The system displays the type of file system in use.
4. Check that the file system is NTFS.

5.2 Checking the Windows Domain Structure

Use

In Windows, you can implement either of the following domain models for the SAP system:

- Extra domain

  In this model, the SAP system is embedded in its own domain, which is specially defined for SAP. A second domain exists for the user accounts.

  In Windows, the SAP domain and user domain must be incorporated in a domain tree. In this tree, the user accounts must form the root domain and the SAP domain must be a child domain of this.
- Single domain

  In this model, the SAP system and the user accounts are included in a single domain.

Prerequisites

- You are performing a domain installation.
- You are familiar with checking Windows domain structures. For more information, see the Windows documentation.

For performance and security reasons, make sure that you do **not** run an SAP instance (including the database instance) on the host where the domain controller is running.

Procedure

For a domain installation, we recommend that you check that **all** SAP system and database hosts are members of a **single** Windows domain. We recommend this for all SAP system setups.

You do **not** need this step for a local installation.

5.3 Reducing the Size of the File Cache

Use

You use this procedure to reduce the size of the file cache.

Procedure

1. Choose *Start* → *Settings* → *Control Panel* → *Network and Dial-up Connections.*
2. In the *Network and Dial-up connections* dialog box, double-click *Local Area Connections.*
3. In the *Local Area Connection Status* dialog box, choose *Properties.*
4. In the *Local Area Connection Properties* dialog box, double-click File and Printer Sharing for Microsoft Networks.

   If you cannot select *File and Printer Sharing for Microsoft Networks*, this option has not yet been installed. To install it, you need the *Windows Server* CDs.
5. Select *Maximize data throughput for network applications*.
6. To confirm your entries, choose *OK*.

5.4 Granting User Rights for the Installation

Use

You need to make sure that you have the required rights and privileges that authorize you to install the SAPinst tool and the SAP system.

If you attempt the installation without the required authorization, the system aborts.

If necessary, you have to ask the system administrator to grant you the necessary authorization **before** you start the installation.

Prerequisites

- The authorization required depends on whether you intend to perform a domain or local installation. For more information, see the sections *Installation Planning* and *System Configuration*.
- A domain installation requires a domain controller to store user and account information centrally for the whole system.

For performance and security reasons, make sure that you do **not** run an SAP instance (including the database instance) on the host where the domain controller is running.
Never perform a local installation on a domain controller.

Procedure

Local Installation

1. Check that you have `Local Administration` rights for the central instance host.

   In a local installation, all Windows account and user information is stored locally on one host and is not visible to any other hosts in the system.

2. If required, obtain these rights by asking the system administrator to enter you as a member of the `Local Admins` group.

Domain Installation

1. Check that you have `Domain Administration` rights.

   In a domain installation, the user information is stored centrally on the domain controller and is accessible to all hosts in the system.

2. If required, obtain these rights by asking the system administrator to enter you as a member of the `Domain Admins` group.

If you are **not** granted domain administration rights, you can perform the installation as a domain user who is a member of the local administrator group. However, the domain administrator has to prepare the system appropriately for you.
For more information, see Performing a Domain Installation without being a Domain Administrator [Page 56].

5.4.1 Performing a Domain Installation Without Being a Domain Administrator

Use

If you are **not** granted domain administrator rights, you can perform the installation as a domain user who is a member of the local administrator group. In this case, the domain administrator must prepare the system for you appropriately, as described in this section.

You normally perform a domain installation of the SAP system as a user with domain administration rights, as described in Granting User Rights for the Installation [Page 55].

The domain administrator has to:

1. Create the new global group `SAP_<SAPSID>_GlobalAdmin`.
2. Create the two new SAP system users `<sapsid>adm` and `SAPService<SAPSID>` (this user is not created for Informix installations).
3. Add the users `<sapsid>adm` and `SAPService<SAPSID>` to the newly created group `SAP_<SAPSID>_GlobalAdmin`.

Prerequisites

You must perform this procedure as a domain administrator.

Procedure

Creating the New Global Group SAP_<SAPSID>_GlobalAdmin

1. Log on as domain administrator.
2. To start the *Active Directory Users and Computers Console*, choose:

   Start → *Programs* → *Administrative Tools* → *Active Directory Users and Computers*

   If you cannot find *Active Directory Users and Computers*, start it as follows:

   a. Choose *Start* → *Run* and enter **mmc**.
   b. Choose *Console* → *Add/Remove Snap-in...* → *Add*.
   c. Select *Active Directory Users and Computers*.
   d. Choose *Add*.
   e. Choose *Close* → *OK*.
3. Right-click *Users* in *Tree*, and choose:

   New → *Group*
4. Enter the following:

   Group name: **`SAP_<SAPSID>_GlobalAdmin`**

   Enter the `SAP_<SAPSID>_GlobalAdmin` group exactly as specified in the correct uppercase and lowercase.
5. Select the following:
   a. *Group scope*: Global
   b. *Group type*: Security
6. Choose *OK*.

Creating the New SAP System Users <sapsid>adm and SAPService<SAPSID>

1. In *Active Directory Users and Computers Console*, right-click *Users* in *Tree* and choose:

   New → *User*
2. Enter the following:

Enter the <sapsid>adm and SAPService<SAPSID> user exactly as specified in the correct uppercase and lowercase.

Field	Input for <sapsid>adm	Input for SAPService<SAPSID>
First name:	None	None
Initials:	None	None
Last name:	None	None
Full name:	<sapsid>adm	SAPService<SAPSID>
User logon name:	<sapsid>adm	SAPService<SAPSID>
User logon name (before Windows 2000):	<sapsid>adm	SAPService<SAPSID>

3. Choose *Next* and enter the following:

   Password: **<password>**

   Confirm password: **<password>**

4. Select *Password never expires*

Make sure that no other options are selected.

5. Choose *Next* → *Finish.*

Adding the <sapsid>adm User to the SAP_<SAPSID>_GlobalAdmin Group

1. In the *Users* folder, double-click the newly created user account in the list on the right.
2. Choose *Member* → *Add*.
3. Select the new *SAP_<SAPSID>_GlobalAdmin* group and choose *Add* to add it to the list.

By default, the user is also a member of the Domain Users group.

4. Choose *OK* twice.

Adding the SAPService<SAPSID> User to the SAP_<SAPSID>_GlobalAdmin Group

1. In the *Users* folder, double-click the newly created user account *SAPService<SAPSID>* in the list on the right.
2. Choose Member → Add.
3. Select the new *SAP_<SAPSID>_GlobalAdmin* group.
4. Choose *Add* to add it to the list.
5. Choose *OK*.

The SAPService<SAPSID> user must **not** be a member of the domain users group.
To remove this group from the *Member of* list:

a. Select the *SAP_<SAPSID>_GlobalAdmin* group.
b. Choose *Set Primary Group*.
c. Select the domain users group.
d. Choose *Remove* to delete it from the *Member of* list.

6. Choose *OK* to close *SAPService<SAPSID> Properties*.
7. Close the *Active Directory Users and Computers Management Console*.

5.5 Choosing the SAP System ID and Host Name

Use

You need to choose an SAP system ID that identifies the whole system. This ID has to be entered for the variable <SAPSID> when you install the central instance. You also need to check the host name for compatibility.

You **cannot** change the SAP system ID after the installation.

Procedure

1. Make sure that you system IDs :
   a. Are unique throughout your organization
   b. Consist of exactly three alphanumeric characters
   c. Contain only uppercase letters
   d. Have a letter for the first character
   e. Do not include any of the following, which are reserved IDs:

```
ADD ALL AND ANY ASC COM DBA END EPS FOR GID IBM INT KEY LOG
MON NIX NOT OFF OMS RAW ROW SAP SET SGA SHG SID SQL SYS TMP
UID USR VAR
```

Choose your SAP system ID carefully. Renaming is complicated and requires you to re-install the SAP system.

If you intend to install a dialog instance on the database host, make sure that the DBSID is different from the dialog name, otherwise the installation will not continue.
The dialog instance name is made up as follows: letter **D** (system setting) and **instance number** (user setting), for example D01.

2. Make sure that the host name of your system does not:
   a. Contain any special character such as a hyphen or an underscore

b. Exceed 13 characters in length

Otherwise, unpredictable problems might arise using the SAP system, especially when using the *Change and Transport System*.

5.8 Preparing the Installation CDs

Use

You use this procedure to prepare the installation CDs.

We recommend that you make all required CDs available **in parallel**.
The *Export CDs* and *RDBMS CDs* (if relevant) **must** be available in parallel.

The following table shows the required CDs:

Installation Option	Installation Procedure	Required CDs
SAP Web AS – J2EE only	Install SAP Web AS – J2EE only (Central System)	*SAP Installation Master CD*
		SAP J2EE Engine CD
		SAP IGS CD
		SAP J2EE Engine CD
		SAP IGS CD
	Install a J2EE dialog instance for SAP Web AS – J2EE only	*SAP Installation Master CD*
		SAP J2EE Engine CD
		SAP IGS CD
SAP Web AS – J2EE Add-In	Install SAP Web AS – J2EE Add-In (Central System)	*SAP Installation Master CD*
		Kernel CD
		SAP J2EE Engine CD
	SAP Web AS – J2EE Add-In (Distributed System): Prepare the central instance	*SAP Installation Master CD*
		Kernel CD
		SAP J2EE Engine CD
	SAP Web AS – J2EE Add-In (Distributed System): Install the central services instance	*SAP Installation Master CD*
		Kernel CD
		SAP J2EE Engine CD
	SAP Web AS – J2EE Add-In (Distributed System): Finalize the central instance	*SAP Installation Master CD*
		Kernel CD
		SAP J2EE Engine CD
	Install a dialog instance for SAP Web AS – J2EE Add-In	*SAP Installation Master CD*
		Kernel CD
		SAP J2EE Engine CD

- For the installation of a Unicode SAP system, the Unicode *SAP Kernel CD* is required. For the installation of a non-Unicode SAP system, the non-Unicode *SAP Kernel CD* is required.
- The required CDs differ if you are installing in an existing system using Multiple Components in One Database (MCOD).
- If you want to uninstall your SAP system, see section *Deletion of an SAP System Installation*.

Procedure

Use one of the following methods to make CDs available in parallel:

- Before the installation:
  - Have sufficient CD drives
  - Copy CDs manually to local hard disks
- During the installation:

  Use the SAPinst CD Browser dialog [Page 61], that is, you can check the entered location and then copy the entire CD to the path you entered in column *Copy Package to*.

5.8.1  Using the CD Browser Dialog

Use

During the installation procedure SAPinst **first checks** and **finally verifies** the availability and location of the required installation CDs. SAPinst does this by displaying a *CD Browser* dialog, which prompts you for the file `LABEL.ASC`, which contains information about the software package to be installed.

Procedure

SAPinst displays the *CD Browser* dialog in the following situations:

- SAPinst wants to check the availability of the software package in advance.

  In this case, you see *Check Location* displayed in the *CD Browser* window.

  Choose one of the following actions:

Situation	Action	Result
You are not yet sure where to set up the software package.	Do not enter any *Package Location* and do not select *Check Location*.	SAPinst skips the check and you can continue the installation procedure. However, SAPinst asks later for the missing `LABEL.ASC` (see final bullet point below).
You know where the software package will be but have not yet set it up.	Enter the path in *Package Location* but do not select *Check Location*.	SAPinst skips checking the label location, but your entered package locations are used later for the installation. SAPinst only asks again for a missing `LABEL.ASC` if the package location is incorrect (see final bullet point below).
You have	Enter the path in *Package*	SAPinst checks the label location

5.8 Preparing the Installation CDs

Situation	Action	Result
already set up the software package at a specific location.	*Location* and select *Check Location.*	and displays an error message if the location is incorrect. If all locations are correct, SAPinst does not ask again for the `LABEL.ASC` files.

- SAPinst cannot find the correct `LABEL.ASC` but needs the location of the software to process the installation now.

  You can recognize this situation because *Check Location* in the *CD Browser* window is empty. You must now enter the path to the correct `LABEL.ASC`. Otherwise, the installation cannot continue.

  When SAPinst prompts for a folder `<FOLDER_NAME>` on a CD, make sure that you enter the path to the corresponding directory on this CD (**`<CD>/<FOLDER_NAME>`**).

  In addition, you can copy the installation package by entering a location in the column *Copy Package to*.

6 Installation Process

Make sure that you read the Installation Checklists [Page 16] before starting the installation process.

6.1 Installing the Database Software

Use

The MS SQL Server software has to be installed on each host in the system where you intend to set up an SAP instance. To prepare a host for the installation of a central, dialog or database instance, you have to install the database software. Depending on the type of host involved, you either have to install the software for the database **client** or **server**:

- The software for the **server** must be installed on the host where the database runs. It provides all the functions required to run a relational database management system. To install the **server** software you run a batch file.
- The software for the **client** must be installed on all hosts without the database. It enables the communication between a host and the database. When you install the **client** software you use the *Microsoft SQL Server 2000* installation program.

Procedure

1. Log on to the host as a local administrator.

   For security reasons, install the MS SQL Server software on an NTFS partition.

2. Insert the MS SQL Server `2000 RDBMS CD`.
   For a **database server**, when the *Microsoft SQL Server 2000 Enterprise Edition* installation program starts, exit the program.
   For a **database client**, do not exit the installation program. Continue and enter the required information as specified in the table below in the *Client Input* column.

3. For the **database server,** run the file `SAP46C-.BAT` located in the root directory of the `RDBMS CD`.

   SAP recommends that you perform the installation using the file `SAP46C-.BAT`.
   If you nevertheless decide to use the *Microsoft SQL Server* installation program, enter information as specified in the *Client Input* column of the table below.

   If you mount the CD from a remote server, it must be assigned a drive letter. The installation writes a log file `sqlstp.log` to the Windows directory `%windir%`

Input for MS SQL Server Installation Program

Window	Server Input	Client Input

Window	Server Input	Client Input
Microsoft SQL Server 2000 Enterprise Edition	Select *SQL Server 2000 Components.*	Select *SQL Server 2000 Components.*
Install Components *Microsoft SQL Server 2000 Enterprise Edition*	Select *Install Database Server.*	Select *Install Database Server.*
Welcome	Choose *Next.*	Choose *Next.*
Computer Name	Select *Local Computer.*	Select *Local Computer.*
Installation Selection	Select *Create a new instance of SQL Server or install Client Tools.*	Select *Create a new instance of SQL Server or install Client Tools.*
User Information	Enter your personal information.	Enter your personal information.
Software License Agreement	Choose *Yes.*	Choose *Yes.*
CD-Key	Enter the key specified in the file `SAPCDKEY.txt` in the root directory of the RDBMS CD.	Enter the key specified in the file `SAPCDKEY.txt` in the root directory of the RDBMS CD.
Installation Definition	Select *Server and Client Tools.*	Select *Client Tools Only.*
Instance Name	Select the instance you want to install.	Dialog box does not appear.
Setup Type	Select *Custom.*	Dialog box does not appear.
Select Components	Select all components except *Full Text Search* which must be deselected.	Dialog box does not appear.
Service Accounts	Select *Use the same account for each service. Auto start SQL Server Service*. Select *Use the Local System account*.	Dialog box does not appear.
Authentication mode	Select *Windows authentication mode*. Enter and confirm the *sa* login. The *sa* login is created, but cannot be used.	Dialog box does not appear.
Collation settings	Select: *SQL Collations* From the dropdown list select *Binary order for use with the 850 Multilingual Character Set.*	Dialog box does not appear.
Network Libraries	Leave selection unchanged and choose *Next.*	Dialog box does not appear.
Start Copying Files	Choose *Next.*	Choose *Next.*
Choose Licensing Mode	Select the mode you require.	Dialog box does not appear.

4. Wen you have finished the installation you have to install Service Pack 3 for SQL Server 2000. For more information on how to get Service Pack 3, see **SAP Note 529150**.

6.1.1  Installing the Corrected MSSQL Collation

Use

When you install the MS SQL Server 2000 database [Page 63] for an SAP system, in the field *Collation Settings* we recommend that you select *Binary order for use with the 850 Multilingual Character Set*.

This means that all new databases and table columns are created with this collation setting.

To view the default collation of MS SQL Server, use the query:
`select serverproperty('collation')`
This query returns the default collation of the overall server. When you have selected code page cp850, it returns: `SQL_Latin1_General_CP850_BIN`

Unfortunately this collation setting does not sort Unicode data as required by an SAP system. To solve this problem, Microsoft provides a corrected collation, called `SQL_Latin1_General_CP850_BIN2`. The new collation is available from Microsoft as a hot-fix (QFE) solution for SQL Server

During the standard installation of the MS SQL Server database, you have to apply the hot fix and run the executable `INSTCOLL.EXE` from SAP.

For more information on how to obtain the hot fix and `INSTCOLL.EXE`, see **SAP Note 600027**.

Prerequisites

- You have installed MS SQL Server 2000 database. In the field *Collation Settings*, you selected *Binary order for use with the 850 Multilingual Character Set*.
- You have installed Service Pack 3 for SQL Server 2000.

  Besides applying SP3, you do not have to make any changes on the client side (SAP application servers).

  If SP 3 is not available on the Patch CD. For more information, on how to get it refer to **SAP Note 529150**.
- To obtain a correct collation order with MS SQL Server, you have to use the new collation for **all** new installations of a Unicode or non-Unicode SAP system with the MS SQL Server database. New versions of the SAPinst installation tool check for the new collation.
- At present, there is no need to convert an existing SAP system to the new collation. For a conversion you have to perform a homogeneous system migration via R3load export/import.
- An new SAP system that is using the new collation and an existing SAP system that is using the old collation cannot run as two databases in the same MS SQL Server instance. If you want to install a new system on a database server with an existing system you have the following options:
  - install a new named SQL Server instance for the new system and apply the new collation with `INSTCOLL.EXE`.

- convert the existing system to the new collation with a homogeneous system migration via R3load export/import.

  This option allows you to run both systems as two databases of a single SQL Server instance or as two schemas of an MCOD database.

Procedure

1. Apply the hot fix according to the instructions from Microsoft.
2. Download the zip file attached to **SAP Note 600027** and extract it to your server.

   The zip file contains the file `INSTCOLL.EXE`.
3. Open a command prompt and for a:
   - Default instance enter: **`INSTCOLL.EXE`**
   - Named instance enter: **`INSTCOLL.EXE -S<server>\<instance>`** (without any spaces after `-S`.)

   The collation executable starts the SQL Server service if it is not running already and runs several checks. When it has finished it stops the SQL Server service. You may be prompted to shutdown the SQL Server manually.

   After a while, the system displays a message similar to this:

   ```
   2003-02-27 19:08:31.80 spid1  index restored for
   Northwind.Employees.

   2003-02-27 19:08:31.83 spid1  index restored for
   Northwind.Categories.

   2003-02-27 19:08:31.94 spid1  index restored for
   Northwind.Customers.

   2003-02-27 19:08:32.12 spid1  index restored for
   Northwind.Suppliers.

   2003-02-27 19:08:35.47 spid1  Default collation successfully
   changed.

   2003-02-27 19:08:35.47 spid1  Recovery complete.
   ```
4. When this output appears, press `Ctrl-C` to shutdown the server.

   If the SQL Server does not restart automatically, start it manually.
5. To verify whether the MS SQL Server is configured properly, run:

   `select serverproperty('collation').`

You have to run `INSTCOLL.EXE` only **once** to apply the new collation. Do **not** install the collation after you have created or attached any SAP or non-SAP database. The `INSTCOLL.EXE` program checks for this and exits without applying the new collation.

Result

You can now continue with the SAP system installation and install any SAP instance on this server.

6.2 Running SAPinst

Use

You use this procedure to run SAPinst to install an SAP instance.

Prerequisites

Before you start the installation, be aware of the following:

- When you install an SAP instance with SAPinst for the very first time on your host, you have to start SAPinst from the *SAP Installation Master CD* with the `sapinst.exe` command, as described in “Procedure” below. The SAPinst control files are copied to a temporary installation directory, which is `%ProgramFiles%\sapinst`. This directory is called the installation directory for the instance you are installing.
- As the SAPinst installation directory contains important log and command files for the installation, make sure that you use a **separate** installation directory for **every** instance you are going to install. Otherwise, you might lose previous log and command files stored in the SAPinst installation directory, as all log files are copied to the same directory.

  To create a new installation directory, you have the following options:

  - For every additional SAP instance that you want to install on the **same** host, you have to execute the `newinst.cmd` file in the installation directory before you run `sapinst.exe` again. By doing so, you make sure that the log and command files of the installed instance are moved to a subdirectory and every instance installation has its own log and command files.
  - You create a new installation directory manually, as described below.
- If you are installing a second or subsequent SAP system into an existing database, make sure that the database is **up and running before** starting the installation. For more information, see “Installation of Multiple Components in One Database.”

Procedure

1. Log on to your host as a user who is a member of the local administration group.
2. Insert the *SAP Installation Master CD* in your CD drive.
3. Double-click **`sapinst.exe`** from the following path:

   `<CD drive>:\SAPinst\NT\<OS>`

   Every installation service must have its own separate installation directory `<SAPinst_INSTDIR>` every time you start SAPinst. That is, for **each** new installation with SAPinst, you must create a separate installation directory. Otherwise, you might lose former log and command files.

   If you want to create a new installation directory manually:

   i. Open a command prompt and enter **`mkdir <SAPinst_INSTDIR>`**

   ii. Change to the installation directory:
   `cd <SAPinst_INSTDIR>`

   iii. Enter **`<SAP Installation Master CD>\SAPINST\NT\<OS>\sapinst`**

SAPinst uses the ports 21212 and 21213 during the installation for communication with SAPinst GUI. You get an error message if one of these ports is already in use. In this case, you must do the following:

- Open a command prompt.
- Change to `<CD drive>:\SAPInst\NT\<OS>` and run:

  `.\sapinst.exe SAPINST_DIALOG_PORT=<port>`

  where **`<port>`** is an unused port on your host.

4. Depending on your installation procedure, choose the corresponding installation task in the SAPinst *Welcome* screen to install your SAP system as listed in the tables below:

   - **SAP Web AS – J2EE only**

Installation Procedure	Installation Task in SAPinst
SAP Web AS 6.30 – J2EE only on one host	*J2EE only: SAP Web AS 6.30 for MS SQL Server (Central System)*
A J2EE dialog instance for SAP Web AS 6.30 – J2EE only	*J2EE only: SAP Web AS 6.30 J2EE Dialog Instance for MS SQL Server*

   - **SAP Web AS – J2EE Add-In**

If you are installing a Unicode system, *Unicode* appears in the installation task text, for example: *J2EE Add-In: Unicode Finalize SAP Web AS 6.30 for <Your database> (Central System).*

Installation Procedure	Installation Task in SAPinst
SAP Web AS 6.30 – J2EE Add-In on one host	*J2EE Add-In: <Unicode> Finalize SAP Web AS 6.30 for MS SQL Server (Central System)*
SAP Web AS 6.30 – J2EE Add-In on multiple hosts: Central services instance for a SAP Web AS 6.30 – J2EE Add-In	*J2EE Add-In: <Unicode> SAP Web AS 6.30 Central Services Instance for MS SQL Server (Distributed System)*
SAP Web AS 6.30 – J2EE Add-In on multiple hosts: Finalize the central instance for SAP Web AS 6.30 – J2EE Add-In	*J2EE Add-In: <Unicode> Finalize Central Instance SAP Web AS 6.30 for MS SQL Server (Distributed System)*
Finalize a dialog instance of SAP Web AS 6.30 – J2EE Add-In	*J2EE Add-In: <Unicode> Finalize Dialog Instance SAP Web AS 6.30 for MS SQL Server*

5. Choose *Next*.
6. Follow the instructions in the SAPinst dialogs, depending on the system variant [Page 10] that you are installing:
   - “Input for the Installation of SAP Web AS – J2EE Only”
   - “Input for the Installation of SAP Web AS –J2EE Add-In”

- If SAPinst prompts you to reboot, reboot your system.
- If SAPinst prompts you to log off from your system, log off and log on again.

In both cases, the installation starts automatically and the *Welcome* screen is displayed.

7. If you have entered all required information during the input phase, SAPinst starts the installation and displays the installation progress during the processing phase.

Troubleshooting

- If an error occurs during the **input phase**, SAPinst:
  - Stops the installation
  - Displays a dialog informing you about the error

  You can now directly view the log file by choosing *View Logs*

  You must abort the installation with *O.K.* and try to solve the problem.
- If an error occurs during the **processing phase**, SAPinst:
  - Stops the installation
  - Displays a dialog informing you about the error

  You can now:
  - Directly view the log file by choosing *View Logs*
  - Try to solve the problem

  For more information, see the *SAPinst Troubleshooting Guide* in the *SAP Service Marketplace* at the Internet address:

  `service.sap.com/sapinstfeedback`
  - Retry the installation by choosing *Retry.*
  - Abort the installation by choosing *O.K.*

For more information, see Interrupted Installation with SAPinst [Page 91].

6.3  Input for the Installation

Make sure that you read the correct section for your installation:

- Input for the Installation of SAP Web AS – J2EE Only [Page 69]
- Input for the Installation of SAP Web AS – J2EE Add-In [Page 75]

6.3.1 Input for the Installation of SAP Web AS – J2EE Only

The following tables list prompts from SAPinst, provides you with a description of the prompt and outlines the information you might need to enter during the input phase of the installation of your SAP instance.

In this table, the following abbreviations or acronyms are used:

Abbreviation	Installation Procedure
*	All installation procedures
CS	Central system
DI	J2EE dialog instance

The tables do not necessarily reflect the actual order in which the input windows appear during the installation.

Prompts during the Installation Option SAP Web AS – J2EE only

Window	Prompt	Action
Welcome	-- *	• CS: Select *J2EE only: SAP Web AS 6.30 for MS SQL Server (Central System)*. • DI: Select *J2EE only: SAP Web AS 6.30 J2EE Dialog Instance for MS SQL Server*.
CD Browser	*CD Name* *	This dialog appears if the system wants to check or cannot find the file LABEL.ASC that contains the relevant installation information. It normally appears multiple times during the installation. For more information on the CD Browser dialog, see section Preparation of Installation CDs [Page 60]. When SAPinst prompts for a folder `<FOLDER_NAME>` on a CD, make sure that you enter the path to the corresponding directory on this CD (**`<CD>/<FOLDER_NAME>`**).
Selecting the JDK Directory	*JDK Installation Directory* *	If prompted, enter the location where the Java Development Kit (JDK) is installed on your host.

Window	Prompt	Action
Selecting the SAP System Parameters	*SAP System Parameters* **CS**	• *SAP System ID*: Enter the SAP system `<SAPSID>`, for example, `C11`. For more information, see Choosing an SAP system ID [Page 59]. • *Database Name:* Enter the name of the database instance `<DBSID>`.  If you install a system into an existing database (MCOD), enter exactly the name of the existing database. • *Database Host:* If prompted, enter the name of the database host. To find out the host name, enter **`hostname`** at the command prompt of the database host. • *Installation Drive for SAP System Files*: Select the drive where you want to install the SAP system.
Specifying the SAP System Parameters	*SAP System Parameters* **DI**	• *SAP System ID:* Enter exactly the SAP system ID `<SAPSID>` of the SAP Web AS. • *Central Instance Host* Enter the name of the central instance host. To find out the host name, enter **`hostname`** at the command prompt of the host of your central instance.
Selecting the domain of the SAP System Accounts	*Domain Information for the SAP System accounts* **CS, DI**	Choose one of the following: • Installation in the Domain of the Current User • Local installation • Installation in a different Domain
Logon Information	*Database Host* **CS, DI**	Enter the database host name.
	Logon Information **CS, DI**	Select the authentication mode.  We strongly recommend to use Windows authentication mode.
Database Selection	-- **CS**	• Select *Create new database* if you want to install the database schema. In this case enter the database name. • If you want to use an existing database, select

Window	Prompt	Action
		Use existing database.
Database Selection	-- **DI**	This screen appears if you do not want to create a new database. • Select *New database* if the database does not yet exist and enter the database name. • Select *Existing database*, if you do not want to create a new database but want to use an existing one.
Selecting the password for the J2EE Engine DB User	*Schema User Password* **CS, DI**	• CS: Enter and confirm the password of the schema user `SAP<SAPSID>DB`. • DI: Enter exactly the password of the schema user `SAP<SAPSID>DB` that you have specified during the database instance installation. Enter and confirm the password of the user J2EE Engine DB User.
Selecting the Dialog Instance parameters	*SAP System Information* **DI**	*Dialog Instance Number* Enter an instance number for the SAP Central Services instance. You can specify a value from 0 to 97, but **not** the numbers 2, 25, 43, 72, or 89. If more than one SAP instance is running on the same host, these instances must be assigned different numbers.
	J2EE Engine Parameters **DI**	• *Number of J2EE Servers*: Default value is 1. If required by your J2EE application, adapt this value accordingly. • *Maximum Heap Size for Server (MB):* Between 64 MB and 4096 MB RAM are required for the maximum Java heap size, depending on the load of your SAP system.  Make sure that you do not enter a value larger than the maximum Java heap size of your platform (see the corresponding documentation of your Java Development Kit)
Enter User Passwords	*Password for SAP Administrator Account,* *Password for SAP Service Account*	*Password:* Enter the password of these users.

Window	Prompt	Action
	DI	
Selecting the Parameters for the SAP Central Services Installation	*SCS Instance Parameters* **CS**	• *SCS Instance Number*: Enter an instance number for the SAP Central Services. You can specify a value from 0 to 97, but **not** the numbers 2, 25, 43, 72, or 89. If more than one SAP instance is running on the same host, these instances must be assigned different numbers. • *Port number of the SAP Messaging Service*: Enter the port number of the SAP Messaging Service. If you do not enter a value, the default port number will be used.
Selecting SAP System J2EE Engine Parameters	*J2EE Engine Instance Parameters* **CS**	*Central Instance Number*: Enter an instance number for the central instance. You can specify a value from 0 to 97, but **not** the numbers 2, 25, 72, or 89.
	J2EE Engine Parameter **CS**	• *Number of J2EE Servers*: Default value is 1. If required by your J2EE application, adapt this value accordingly. • *Maximum Heap Size for Server (MB)*: Between 64 MB and 4096 MB RAM are required for the maximum Java heap size, depending on the load of your SAP system.  Make sure that you do not enter a value larger than the maximum Java heap size of your platform (see the corresponding documentation of your Java Development Kit).
Selecting J2EE Engine Passwords	*Password for J2EE Engine User* **CS**	• Enter and confirm the password of the J2EE Engine User `Administrator`.  Do not use a password that contains a comma • Enter and confirm the password of the user J2EE Engine User `guest`.
Defining Central Monitoring System Parameters	*Central Monitoring System* *	Use *Central Monitoring System* and register *Agent*: Mark this option if you are using a *Central Monitoring System* and if you want this instance to be monitored by this system.

Window	Prompt	Action
Parameters	*Connection Data of Central Monitoring System* *	• *System ID:* Enter exactly the name of the Central Monitoring System. • *Instance Number:* Enter exactly the instance number of the central instance of the Central Monitoring System. To find out the number, look under the SAP directory `\usr\sap\<SAPSID>\DVEBMGS<nn>`. The value `<nn>` is the number assigned to the central instance. • *Application Server Host:* Enter the name of the Central Monitoring System host. To find out the host name, enter **`hostname`** at the command prompt of the host of your Central Monitoring System.
	User to create once an TCP/IP destination in the Central Monitoring System *	• *Client:* Enter the client where the user (see below) exists.  This client should normally be the production client of your Central Monitoring System. • *User:* Enter a user that has the required permissions to create an TCP/IP destination in the Central Monitoring System (see the *What's this?* help in the SAPinst GUI for this dialog). For example, enter `DDIC`. • *Password:* Enter exactly the password of this Central Monitoring System user.

Window	Prompt	Action
	Communication User for Monitoring Operation in the Central Monitoring System *	• *Client:* Enter the client where the user (see below) exists.  This client should normally be the production client of your Central Monitoring System. • *User:* Enter the communication user for monitoring operations in the Central Monitoring System. • *Password:* Enter exactly the password of this Central Monitoring System user.

6.3.2  Input for the Installation of SAP Web AS – J2EE Add-In

The following tables list prompts from SAPinst, provides you with a description of the prompt and outlines the information you might need to enter during the input phase of the installation of your SAP instance.

In this table, the following abbreviations or acronyms are used:

Abbreviation	Installation Procedure
*	All installation procedures
CS	Central system
DS-*	Distributed system
DS-SCS	SAP central services of a distributed system
DS-FCI	Finalize central instance of a distributed system
FDI	Finalize the dialog instance

The tables do not necessarily reflect the actual order in which the input windows appear during the installation.

Prompts of the installation option SAP Web AS – J2EE Add-In

Window	Prompt	Action
Welcome	-- *	• CS: Select *J2EE Add-In: <Unicode> Finalize SAP Web AS 6.30 for MS SQL Server (Central System)*. • DS-SCS:

Window	Prompt	Action
		Select *J2EE Add-In: <Unicode> SAP Web AS 6.30 Central Services Instance for MS SQL Server (Distributed System)*. • DS-FCI: Select *J2EE Add-In: Finalize Central Instance <Unicode> SAP Web AS 6.30 for MS SQL Server (Distributed System)*. • FDI: Select *J2EE Add-In: <Unicode> Finalize Dialog Instance SAP Web AS 6.30 for MS SQL Server*.
CD Browser	*CD Name* *	This dialog appears if the system wants to check or cannot find the file LABEL.ASC that contains the relevant installation information. It normally appears multiple times during the installation. For more information on the CD Browser dialog, see section Preparation of Installation CDs [Page 60].  When SAPinst prompts for a folder `<FOLDER_NAME>` on a CD, make sure that you enter the path to the corresponding directory on this CD (**`<CD>/<FOLDER_NAME>`**).
Specifying the SAP System Parameters	*SAP System ID* *	Enter exactly the SAP system ID `<SAPSID>` of the existing SAP system.
Logon Information	*Database Host* **CS, DS-*, DI**	Enter the database host name.
	Logon Information **CS, DS-*, DI**	Select the authentication mode.  We strongly recommend to use the Windows authentication mode.

Window	Prompt	Action
Database Selection	-- **FCI, DS-SCS**	• Select *Create new database* if you want to install the database schema. In this case enter the database name. • If you want to use an existing database, select *Use existing database*.
Database Selection	-- **FCI, DI**	This screen appears if you do not want to create a new database. • Select *New database* if the database does not yet exist and enter the database name. • Select *Existing database*, if you do not want to create a new database but want to use an existing one.
Selecting the Dialog Instance parameters	*SAP System Information* FDI	*Dialog Instance Number:* Enter exactly the instance number of the already existing dialog instance (ABAP).
	J2EE Engine Parameters **FDI**	• *Maximum Heap Size for Server [MB]:* Between 64 MB and 4096 MB RAM are required for the maximum Java heap size, depending on the load of your SAP system.  Make sure that you do not enter a value larger than the maximum Java heap size of your platform (see the corresponding documentation of your Java Development Kit).
Selecting the JDK Directory	*JDK Installation Directory* *	If prompted, enter the location where the Java Development Kit (JDK) is installed on your host.
Selecting the domain of the SAP System Accounts	Domain Information for the SAP System accounts CS,	Choose one of the following • Installation in the Domain of the Current User • Local installation • Installation in a different Domain

6.3 Input for the Installation

Window	Prompt	Action
Enter User Passwords	*Password for SAP Administrator Account,* *Password for SAP Service Account* CS,	*Password:* Enter the password of these users.
Selecting the password for the J2EE Engine DB User	*Schema User Password* **CS, FDI**	• CS Enter and confirm the password of the database schema user `SAP<SAPSID>DB`. • FDI: Enter exactly the password of the database schema user `SAP<SAPSID>DB`.
Selecting the Parameters for the SAP Central Services Installation	*SCS Instance Parameters* CS, DS-SCS	• *SCS Instance Number:* Enter an instance number for the central services instance. You can specify a value from 0 to 97. If more than one SAP instance is running on the same host, these instances must be assigned different numbers. • *Port number of the SAP Messaging Service:* Enter the port number of the SAP Messaging Service. If you do not enter a value, the default port number will be used.
Selecting SAP System J2EE Engine Parameters	*J2EE Engine Parameters* **CS, DS-FCI**	• *Number of J2EE Servers:* Default value is 1. If required by your J2EE application, adapt this value accordingly. • *Maximum Heap Size for Server (MB):* Between 64 MB and 4096 MB RAM are required for the maximum Java heap size, depending on the load of your SAP system.  Make sure that you do not enter a value larger than the maximum Java heap size of your platform (see the corresponding documentation of your Java Development Kit).

Window	Prompt	Action
SAP System Communication Parameters	*SAP System Connection Parameters* **CS, DS-FCI**	• *DDIC Password:* Enter exactly the password of user DDIC of the existing SAP system. • *SAP System Client:* Enter the client where the DDIC user exists.  This client should normally be the production client of your existing SAP system.
	User Management for the J2EE Engine **CS, DS-FCI**	• *SAPJSF Password:* ○ If the user SAPJSF already exists in the existing SAP Web AS, enter and confirm exactly its password. ○ Otherwise, enter and confirm a new password for this user. SAPinst will then create this user in the existing SAP Web AS. • *J2EE_ADMIN Password:* Enter and confirm the password of this user.  Do not use a password that contains a comma. • *J2EE_GUEST Password:* Enter and confirm the password of this user.

Window	Prompt	Action
Selecting J2EE Engine DB Parameters	-- *DS-FCI*	• *Database Name:* Enter exactly the name of the database instance <DBSID> of the existing SAP Web AS. • *J2EE Database Host:* Enter the name of the database host. To find out the host name, enter **hostname** at the command prompt of the database host. • *'SAP<SAPSID>DB' Schema Password:* Enter exactly the password of this user that you have entered during the installation of the database schema.
Defining Central Monitoring System Parameters	*Central Monitoring System* **CS, DS-*** *Connection Data of Central Monitoring System* **CS, DS-***	Use *Central Monitoring System* and register *Agent*: Mark this option if you are using a *Central Monitoring System* and if you want this instance to be monitored by this system. • *System ID:* Enter exactly the name of the Central Monitoring System. • *Instance Number:* Enter exactly the instance number of the central instance of the Central Monitoring System. To find out the number, look under the SAP directory \usr\sap\<SAPSID>\DVEBMGS<nn>. The value <nn> is the number assigned to the central instance. • *Application Server Host:* Enter the name of the Central Monitoring System host. To find out the host name, enter **hostname** at the command prompt of the host of your Central Monitoring System.

Window	Prompt	Action
	User to create once an TCP/IP destination in the Central Monitoring System **CS, DS-***	• *Client:* Enter the client where the user (see below) exists.  This client should normally be the production client of your Central Monitoring System. • *User:* Enter a user that has the required permissions to create an TCP/IP destination in the Central Monitoring System (see the *What's this?* help in the SAPinst GUI for this dialog). For example, enter `DDIC`. • *Password:* Enter exactly the password of this Central Monitoring System user.
	Communication User for Monitoring Operation in the Central Monitoring System **CS, DS-***	• *Client:* Enter the client where the user (see below) exists.  This client should normally be the production client of your Central Monitoring System. • *User:* Enter the communication user for monitoring operations in the Central Monitoring System. • *Password:* Enter exactly the password of this Central Monitoring System user.

7 Post-Installation Activities

Make sure that you read Installation Checklists [Page 16] before performing the post-installation activities.

7.1 Starting and Stopping the SAP System

Use

You use this procedure to check that you can start and stop the SAP system after the installation. You use the Microsoft Management Console (MMC) to start and stop the SAP system.

The newly installed MMC only allows you to start or stop the SAP system **locally** on the host that you are logged on to. Later you can configure the MMC to enable central management of **all** hosts.
For more information, choose the following in the SAP Library [Page 31]: *Computing Center Management System → Monitoring in the CCMS →Microsoft Management Console: Windows*

Prerequisites

You have logged on to the SAP system host as user `<sapsid>adm`.

Procedure

Starting the SAP System

1. To start the central services, central instance and database instance:
   - If you have a central system – that is, central services, central instance, and database instance are installed on the **same** host:
     i. On the SAP system host, choose *Start → Programs → SAP Management Console*
     ii. Right-click the SAP system node and choose *Start.*
     The SAP central services, central instance, and database start.
   - If you have a distributed system – that is, central instance, central services and database instance on **different** hosts – do the following:
     i. On the central instance host, choose *Start → Programs → SAP Management Console.*
     ii. Right-click the SAP system node and choose *Start.*
     The SAP central services, central instance, and database start.
2. If you have installed a (J2EE) dialog instance, repeat the above steps on the (J2EE) dialog instance host.

If you want to start the SAP instances separately with the SAP Management Console, make sure that you start the instances in the following order by clicking on the respective node:

i. Central Services
ii. Database instance
iii. Central instance
iv. (J2EE) dialog instance

Stopping the SAP System

1. To stop the central services, central instance and database instance:
   - If you have a central system – that is, central services, central instance, and database instance are installed on the **same** host:
     i. On the SAP system host, choose *Start* → *Programs* → *SAP Management Console*
     ii. Right-click the SAP system node and choose *Stop.*
     The SAP central services and central instance stop.
     iii. Stop the database.
   - If you have a distributed system – that is, central instance, central services and database instance on **different** hosts – do the following:
     i. On the central instance host, choose *Start* → *Programs* → *SAP Management Console.*
     ii. Right-click the SAP system node and choose *Stop.*
     The SAP central services and central instance stop.
     iii. Stop the database.
2. If you have installed a (J2EE) dialog instance, repeat the above steps on the (J2EE) dialog instance host.

If you want to stop the SAP instances separately with the SAP Management Console, make sure that you stop the instances in the following order by clicking on the respective node:

i. Dialog instance, if available
ii. Central instance
iii. Central Services
iv. Database instance

7.2  Logging On to the SAP System

Use

You need to check that you can log on to the SAP system using the standard users.

Prerequisites

You have already started the SAP system and installed a front end.

There are two standard users in the SAP system after the installation:

User	Initial Password	Client
SAP*	06071992	000, 066
DDIC	19920706	000

During the installation, SAPinst prompts you to change the passwords for these standard users in client 000.
If for any reason the `SAP*` and `DDIC` users still have initial passwords, you **must** change their passwords. Otherwise, there is a serious security risk because it is possible for anyone to log on to your SAP system using the initial passwords.

Procedure

1. Start *SAP Logon* on the central instance host:
   - SAP GUI for **Windows**:

     On the machine, where you have installed the front end, choose:

     Start → *Programs* → *SAP Front End<Release>* → *SAPlogon*
   - SAP GUI for **Java**:

     Enter the following command from the GUI installation directory:

     `guilogon`

     The *SAP Logon* dialog box appears.
2. Create a logon entry for the newly installed system:

Field	Your Entry
Description of system	Give a meaningful description, for example, the host name of the central instance or the SAP system ID.
Application Server	Specify the name of the central instance host
System number	Specify the number you entered for the central instance during the installation.

   When you choose *OK*, the *SAP Logon* dialog box reappears and now includes an entry for the new system.
3. Double-click the new system entry.

   The logon screen for the SAP system appears.
4. Log on as user `SAP*`.

7.3  Installing the SAP License

Use

When you install your SAP system, a temporary license is automatically installed. This temporary license allows you to use the system for four weeks from the date of installation. Before the temporary license expires, you must apply for a permanent license key from SAP. SAP recommends that you do so as soon as possible after you install your system.

Procedure

The procedure to install the SAP license depends on the installation you have performed:

- If you installed an SAP Web AS ABAP+J2EE system, see:
  - *Client/Server Technology → SAP License* in the SAP Library [Page 31]
  - **SAP Note 94998**

    When you install the SAP Web AS license, a license for the SAP J2EE Engine gets installed automatically.

    You can install several licenses, one for each host running a message server. For example, on Windows, this applies if you have an installation with Microsoft Cluster Server (MSCS). The SAP system then searches for the current license.
- If you installed an SAP Web AS J2EE system, see *J2EE Technology in SAP Web Application Server → Administration Manual → Installation Information → Licensing of the SAP J2EE Engine* in the SAP Library [Page 31].

7.4 Installing the SAP Online Documentation

Use

SAP currently provides an HTML-based solution for the online documentation, the SAP Library. The Application Help, Glossary, Implementation Guide (IMG), and Release Notes are delivered in HTML format. You can display the documentation with a Java-compatible Web browser on all front-end platforms supported by SAP.

Procedure

Install the SAP online documentation (SAP Library) in your SAP system as described in the `README.TXT` file contained in the root directory of the online documentation CDs, delivered as part of the installation package.

For other ways to access the SAP Library, see the Accessing the SAP Library [Page 31] section in this documentation.

7.5 Checking the SAP J2EE Engine Documentation

Use

You need to check important information about the SAP J2EE Engine in the SAP Library.

Prerequisites

Open *J2EE Technology in SAP Web Application Server* in the SAP Library [Page 31].

Procedure

Beside other information, this section of the SAP Library contains the following manuals. Check them for information that is relevant for running your SAP system.

Manual	Contents
Architecture Manual	In the Architecture Manual first the J2EE cluster architecture of the SAP Web AS, central services, load balancing, and high availability are described. Then follows an explanation of the system architecture of the SAP J2EE Engine. A further section explains how the SAP NetWeaver Developer Studio – the SAP development infrastructure for Java – is structured and describes the integration of the SAP NetWeaver Developer Studio into the entire SAP development infrastructure.
Administration Manual	The Administration Manual contains all the administration information for the SAP J2EE Engine. The main topics are configuration and administration, and monitoring and performance. Other important topics are security of the J2EE Engine and the description of the server infrastructure. The manual is supplemented with tips about handling errors.  Especially make sure that you check the mandatory post-installation procedures listed in the Administration Manual under *Installation Information → Post-Installation Procedures*.
Development Manual	This manual covers the Java development environment – the SAP Netweaver Developer Studio – and explains how to design Web-based user interfaces and business objects using the SAP NetWeaver Developer Studio. The section Advanced Programming provides you with an extensive introduction to the Java programming environment and explains the areas, deployment, sessions, services and interfaces.
Reference Manual	This manual contains descriptions of the configuration parameters of the J2EE Engine, the J2EE Engine shell commands and the SAP J2EE Engine deployment descriptors.
Migration Manual	This manual contains all the information you need to migrate an application created in SAP Web Application Server 6.20.

7.6  Performing a Full Backup

Use

You must perform an offline full backup at the end of the installation.

Prerequisites

- You have completed client maintenance (for example, client copy).
- You have stopped:
  - The SAP system
  - SAP-related services (`SAP<SAPSID>_<instance>` and `SAPOSCol`)
  - The database
- You are logged on as user `<sapsid>adm`.

- You have shut down the SAP system and database.

Procedure

1. Save the registry:
   a. Choose *Start* → *Programs* → *Accessories* → *System Tools* → *Backup*
   b. Choose *Emergency Repair Disk*.
   c. The *Emergency Repair Diskette* dialog box appears.
   d. Select *Also Backup the Registry to the Repair directory…*

      When you confirm your entry, the registry is written to diskette.
2. Save the system state data:
   a. Choose *Start* → *Programs* → *Accessories* → *System Tools* → *Backup*.
   b. Choose *Backup Wizard* → *Next*.
   c. Select *Only back up the System State data* and choose *Next*.
   d. In *Where to Store the Backup*, select the *Backup media type* and enter the *Backup media or file name*.
   e. Choose *Next*.
   f. Check the information displayed and choose *Finish* to start the backup.
3. Back up all SAP-specific and all database-related directories:
   a. Choose *Start* → *Programs* → *Accessories* → *System Tools* → *Backup*.
   b. Choose *Backup Wizard* → *Next.*
   c. Select *Back up selected files, drives, or network data* and choose *Next*.
   d. In *What to back up*, select the Windows directory and all SAP and database-related directories, including:

      `\USR\SAP`

      `\USR\SAP\TRANS`

      `<HOMEDIR> of <sapsid>adm`

      `\%WINDIR%`

      The directory `\USR\SAP\TRANS` is only required for SAP systems that have the ABAP engine installed.
   e. Choose *Next*.
   f. In *Where to Store the Backup*, select the *Backup media type* and enter the *Backup media or file name* for the backup.
   g. Choose *Next*.
   h. Check the information displayed and then choose *Finish* to start the backup.

7.7 Changing Passwords of Created Users

Use

You need to change the password of the user that SAPinst creates during the installation. The table below lists this user. You also need to remove the contents of the installation directory and store them securely because otherwise they might represent a security risk:

service.sap.com/securityguide

Make sure that you perform this procedure before the newly installed SAP system goes into production.

Procedure

1. Change the password of this user according to the *SAP Security Guide.*

   For more information, see the *SAP Service Marketplace* at the Internet address:

   service.sap.com/securityguide

   - SAP system users might exist in more SAP system clients than listed below (for example, if a user was copied as part of the client copy [Page 31].
   - We strongly recommend that you change the initial passwords even if SAPinst prompted for a new password during the installation procedure.

User Type	User	Comment
SAP system user	SAPJSF	User exists at least in SAP system client that you have specified during the installation (see Input for the Installation [Page 69]).

2. For security reasons we recommend that you remove all relevant files from the SAPinst
   a. installation directory, <SAPinst_INSTDIR>, and keep them in a safe place: Enter the following command:

      <SAPinst_INSTDIR>/newinstall.sh

      This command creates a new subdirectory under <SAPinst_INSTDIR> containing all files that might represent a security risk.

   b. Copy the newly created subdirectory to another medium and keep this in a safe place.

   c. Remove the newly created subdirectory from the installation host.

8 Additional Information

For information on how to delete an SAP installation, see:

Deletion of an SAP Installation [Page 97]

For background information on the security concept implemented for SAP on Windows, see:

SAP System Security on Windows [Page 101]

8.1 Remote Installation with SAPinst

Purpose

You can run the SAPinst GUI in standalone mode to perform a remote installation.

This enables you to install an SAP system on another host (the remote host) while monitoring the installation with the SAPinst GUI on your local Windows or UNIX computer (the local host).

Prerequisites

- Make sure that you have performed the preparation activities for your local host (SAPinst GUI host) and your remote host.

  For more information, see *Installation Preparations* in this documentation.

- Both computers are in the same network and can ping each other.

  To test this:

  - Log on to your remote host and enter the command **`ping <local host>`**.
  - Log on to the local host and enter the command **`ping <remote host>`**.

- SAPinst ports

  SAPinst uses the ports 21212 and 21213 during the installation for communication with the SAPinst GUI. If one of these ports is already used by another service, SAPinst aborts the installation with an appropriate error message.

  In this case, you must start SAPinst or the SAPinst GUI from the command prompt as follows:

  In the following commands, `<free_port_number>` defines an unused port number. Since SAPinst also uses `<free_port_number> + 1`, this must also be free.
  For example, if you enter `60000` as `<free_port_number>`, SAPinst uses the ports `60000` and `60001`.

  - UNIX:
    - SAPinst: **`./sapinst SAPINST_DIALOG_PORT=<free_port_number>`**
    - SAPinst GUI: **`./sapinstgui.sh -port <free_port_number>`**
  - Windows:
    - SAPinst: **`sapinst SAPINST_DIALOG_PORT=<free_port_number>`**
    - SAPinst GUI: **`sapinstgui.bat -port <free_port_number>`**

Process Flow

1. You start the SAPinst server on your remote host.
2. You start the SAPinst GUI on your local host.
3. You perform the installation using the SAPinst GUI.

For more information, see:

- Starting SAPinst on the Remote Host [Page 90]
- Starting SAPinst GUI on the Local Host [Page 91]

8.1.1  Starting SAPinst on the Remote Host

Use

You use this procedure to run SAPinst on the **remote** host when you want to run SAPinst as a remote installation [Page 89]. The remote host is the host where you want to install the SAP system.

Procedure

Your Remote Host Runs on a Windows Platform

1. Log on to your remote host as a user who is a member of the local administration group.
2. Insert the installation CD in your CD drive.
3. Create `<SAPinst_INSTDIR>` and change to this directory.
4. Enter the following command from the Windows command prompt:

   `<CD drive>:\SAPinst\NT\<OS>\sapinst.exe SAPINST_NO_GUISTART=true`

   SAPinst now gets started without the SAPinst GUI and waits for the connection to the SAPinst GUI.
5. Start the SAPinst GUI on your local host, as described in Starting SAPinst GUI on the Local Host [Page 91].

Your Remote Host Runs on a UNIX Platform

1. Log on to your remote host as user `root`.
2. Mount the installation CD.
3. Create `<SAPinst_INSTDIR>` and change to this directory.
4. Enter:

   ```
   <Installation CD>/SAPINST/UNIX/<OS>/    \
      sapinst SAPINST_NO_GUISTART=true
   ```

   SAPinst now gets started without the SAPinst GUI and waits for the connection to the SAPinst GUI. The following message is displayed:

   ```
   guiengine: waiting for connect...
   ```
5. Start the SAPinst GUI on your local host, as described in Starting SAPinst GUI on the Local Host [Page 91].

8.1.2 Starting SAPinst GUI on the Local Host

Use

You use this procedure to run SAPinst GUI on the **local** host when you want to run SAPinst as a remote installation [Page 89]. The local host is the host where you want to control the installation with the SAPinst GUI.

Procedure

Your Local Host Runs on a Windows Platform

1. Log on to your local Windows host.
2. Insert the installation CD into your CD drive.
3. Enter the following command from the Windows command prompt:

   <CD drive>:\SAPinst\NT\<OS>\startinstgui.bat

   The SAPinst GUI now gets started and connects automatically to the host that is waiting for a connection. The *Welcome* screen is displayed.

   If prompted, enter the following parameters:
   - *Hostname* : Enter the host name of the remote computer.
   - *Port:* Enter the same port number as SAPinst uses on the remote host.
4. Perform the installation from your local host.

Your Local Host Runs on a UNIX Platform

1. Log on to your local UNIX host as user `root`.
2. Mount your installation CD.
3. Change to the following directory:

   <Installation CD>/SAPINST/UNIX/<OS>
4. Enter: **startInstGui.sh**

   The SAPinst GUI now gets started and connects automatically to the host that is waiting for a connection. The *Welcome* screen is displayed.

   If prompted, enter the following parameters:
   - *Hostname* : Enter the host name of the remote computer.
   - *Port:* Enter the same port number as SAPinst uses on the remote host.
5. Perform the installation from your local host.

8.2 Interrupted Installation with SAPinst

Purpose

SAPinst does not abort the installation in error situations. Therefore, you can continue an interrupted installation when you have:

- **Not** canceled the installation
- **Already** canceled the installation

Prerequisites

You have solved the problem that caused the error situation.

Process Flow

- You have **not** canceled the installation

  That is, the error dialog box is still displayed and SAPinst is waiting for your input. You proceed as follows:

  In the error dialog box, you choose *Retry*.

  SAPinst now retries the installation step.

- You have **already** canceled the installation.

  That is, the installation was aborted.

  - If you have cancelled the installation after you have finished the input phase and SAPinst has already started the installation phase, you can continue the installation [Page 92].

    Since SAPinst records the installation progress in the `keydb.xml` file, you can continue the installation from the failed step without repeating previous steps.

  - If you have cancelled the installation during the input phase, you have to restart the installation [Page 93] from the beginning, that is, SAPinst uses the default `keydb.xml` file as delivered.

    In some cases, you must de-install already installed components, before repeating the installation from the beginning. For example, this applies to an SAP system installation. For more information, see the description on how to de-install a component in the corresponding installation guide.

8.2.1  Continuing an Interrupted Installation with SAPinst

Use

You use this procedure if you have finished the input phase and you have decided to continue an interrupted installation [Page 91] with SAPinst. That is, SAPinst continues the installation at the point where it stopped.

Procedure

Windows

1. Check if a SAPinst GUI Java process is still running.
2. If a process is still running, look for `javaw.exe` under *Processes* in your Task Manager and kill it.
3. Start SAPinst from your *SAP Master CD*.

UNIX

1. Check if a SAPinst GUI Java process named `java` is still running:

   ```
   ps -efl | grep java
   ```

If so, kill it.

2. Make sure that all environment variables are set as described in the corresponding installation documentation.
3. Start SAPinst from *SAP Master CD*.

8.2.2  Restarting an Interrupted Installation with SAPinst

Use

You use this procedure if you have decided to restart an interrupted installation [Page 91] with SAPinst from the beginning. In this case, SAPinst uses the default `keydb.xml` file as delivered.

Procedure

Windows

1. Check if a SAPinst GUI Java process is still running.
2. If a process is still running, look for `javaw.exe` under *Processes* in your Task Manager and kill it.
3. Do one of the following:
   - Execute `newinst.cmd` in the installation directory before you run `sapinst.exe` from the *SAP Master CD*.
   - If you do not want to keep the former log files, delete the installation directory `%ProgramFiles%\sapinst`, before you run `sapinst.exe` from the *SAP Master CD*.

UNIX

1. Check if a SAPinst GUI Java process named `java` is still running:

   ```
   ps -efl | grep java
   ```

   If so, kill it.
2. Do one of the following:
   - Create a new installation directory and restart the installation from the *SAP Master CD*.
   - Prepare the new installation by running the following command from your installation directory `<SAPinst_INSTDIR>`:

     ```
     ./newinstall.sh
     ```

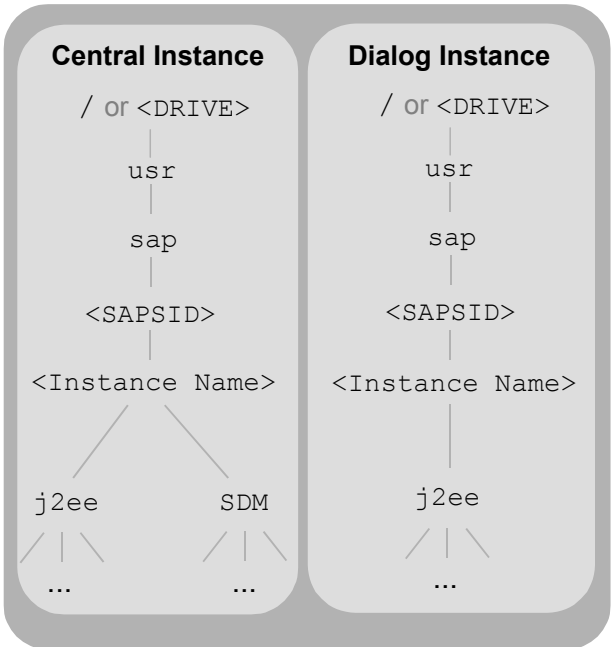
     This command copies current log and command files to the backup directory `<SAPinst_Dir>/log<month>_<date><time>` that indicates the date and time of the backup. You can then start SAPinst with reset XML files from the *SAP Master CD*.

8.3 Additional Information about the SAP J2EE Engine

For more information, also see *J2EE Technology in SAP Web Application Server* in the SAP library [Page 31].

File System Structure of the SAP J2EE Engine Installation

After the installation of the SAP J2EE Engine, the following file system structure applies for the SAP J2EE Engine (`j2ee`) and its Software Deployment Manager (SDM, see *The Software Deployment Manager* in this section):



For example, the file system structure might look as follows:

- On a central instance with SAP system ID `C11` and instance name `DVEBMGS00` on UNIX, the SAP J2EE Engine is installed to `/usr/sap/C11/DVEBMGS00/j2ee` and the corresponding SDM is installed to `/usr/sap/C11/DVEBMGS00/SDM`.
- On a dialog instance with instance name `D01` on Windows, the SAP J2EE Engine is installed to `c:\usr\sap\C11\D01\j2ee`. No SDM is installed.

SAP Web AS J2EE system only:
The instance name (instance ID) of the central instance is `JC<Instance_Number>`, the instance name of a J2EE dialog instance is `J<Instance_Number>`.

Starting the Administration Tool of the SAP J2EE Engine

For more information about the administration tool of the SAP J2EE Engine, see *J2EE Technology in SAP Web Application Server → Administration Manual → Server Administration → SAP J2EE Engine Administration Tools → Visual Administrator* in the SAP Library [Page 31].

1. For the user who will run the administration tool (for example, `<SAPSID>adm`), make sure that the **`JAVA_HOME`** environment variable contains the path to the Java Delelopment Kit (JDK) of the SAP J2EE Engine.
2. On UNIX, make sure that your `DISPLAY` environment variable is set to **`<host_name>:0.0`**, where `<host_name>` is the host on which the administration tool will be displayed.

Used Shell	Command
Bourne Shell (sh)	`DISPLAY=<host_name>:0.0` `export DISPLAY`
C Shell (csh)	`setenv DISPLAY <host_name>:0.0`
Korn Shell (ksh)	`export DISPLAY=<host_name>:0.0`

3. Enter the following command to start the administration tool:
   - UNIX:
     `/usr/sap/<SAPSID>/<Instance_Name>/j2ee/admin/go`
   - Windows:
     `<Drive>:\usr\sap\<SAPSID>\<Instance_Name>\j2ee\admin\go.bat`

Deactivation of the SAP J2EE Engine

This section is **not** valid for SAP Web AS J2EE systems.

After the installation, the SAP J2EE Engine is activated. If you do not want to use the SAP J2EE Engine, you can deactivate it by setting the parameter `rdisp/j2ee_start` to **0** in the instance profile of every installed SAP instance. To do this, edit the correct file for your platform:

- UNIX – log on first as user `root`

  `<sapmnt>/profile/<SAPSID_INSTANCENAME_HOSTNAME>`

- Windows

  `<DRIVE>:\usr\sap\<SAPSID>\sys\profile\<SAPSID_INSTANCENAME_HOSTNAME>`

- IBM eServer iSeries

  `/sapmnt/<SAPSID>/profile/<SAPSID_INSTANCENAME_HOSTNAME>`

This is a sample extraction of an edited UNIX instance profile:

```
...
rdisp/max_priv_time = 0
```

```
rdisp/j2ee_start = 0
exe/j2ee = /usr/sap/MB2/DVEBMGS45/j2ee/cluster/  \
   dispatcher/go
rdisp/j2ee_timeout = 60
rdisp/j2ee_error = 10
icm/HTTP/j2ee_0 = PREFIX=/,HOST=localhost,  \
   CONN=0-10,PORT=33609
rsdb/ntab/dblength2_wa = 1
...
```

The Software Deployment Manager

Every SAP J2EE Engine on a central instance and every SAP J2EE Engine installed standalone requires a Software Deployment Manager (SDM). SDM is a tool with which you can manage and deploy SAP software packages.

To manage and deploy SAP applications in programming languages other than ABAP, the SDM is integrated into the SAP installation tool SAPinst. Therefore, the current section only contains background information.

Software Deployment Archive (SDA)

The Software Deployment Archive (SDA) is the delivery format for SAP applications in programming languages other than ABAP. It is a ZIP-compatible archive format that can be used as a container for other archives. The SDA contains the manifest information - that is, package-related data - of its archives (such as `jar`, `war`) and an SAP manifest, which contains additional software logistics information.

The `EAR` archive is a special case in the J2EE context. If an `EAR` archive contains an SAP manifest, it is also an SDA. The SDM recognizes the `EAR` archive as an SDA, but does not rename the archive extension as `<archive_name>.sda`.

An SDA is the smallest unit that you can deploy. Furthermore, the SDA is the smallest unit for which patches can be created and delivered.

Software Component Archive (SCA)

A Software Component Archive (SCA) is the physical representation of a version of a software component. It contains a specific number of SDAs, whose quantity describes a precisely-defined version level.

A SCA update always results in a new version level of the software component.

Deployment

The deployment is the final step in the software delivery process; it involves the deployment of available software packages - SDAs or SCAs - in the runtime environment of the SAP systems.

When deploying SDAs/SCAs, the Software Deployment Manager stores the data in the SDM Repository, where it then manages the installed archives. The SDM recognizes dependencies between archives and provides support when you install and maintain shared applications.

8.4 Deletion of an SAP System Installation (J2EE)

Purpose

This section describes how to delete a (J2EE) dialog instance or a J2EE Add-In installation.

If you delete a J2EE Add-In installation, the original SAP system (ABAP) is not deleted.

This description assumes that the installation of your SAP system has been performed using SAP standard tools according to the installation documentation.

Process Flow

If you delete network-wide users, groups or service entries in an environment with Network Information System (NIS), other SAP installations might also be affected. Make sure that the users, groups, and service entries to be deleted are no longer required.

Deleting a J2EE Dialog Instance

You delete the J2EE dialog instance. For more information, see Deleting an SAP Instance [Page 98].

Deleting a J2EE Add-In Installation

1. Stop the central services instance and all J2EE dialog instances of your SAP system:
   a. Log on to the corresponding instance host as user `<sapsid>adm`.
   b. Execute the following command:
      - To stop the central services instance named `<SCSxx>`:
        `stopsap <SCSxx>`
      - To stop a J2EE dialog instance named `<Dxx>`:
        `stopsap <Dxx>`
2. Stop the SAP J2EE Engine of the central instance:
   a. Log on to your SAP system.
   b. Call transaction SMICM.
   c. Choose *Administration* → *J2EE Server* → *send hard shutdown*.

   You do not need to stop the central instance.
3. Remove the lines beginning with the following parameter names from the default profile `\usr\sap\<SAPSID>\SYS\profile\default.pfl`:

```
j2ee\dbname =
j2ee\dbtype =
j2ee\dbhost =
j2ee\dbadminurl =
```

4. Remove the lines beginning with the following parameter names from the central instance profile and from all J2EE dialog instance profiles (\usr\sap\<SAPSID>\SYS\profile\<SAPSID>_<INSTANCE_NAME>_<host_name>):

```
exe\j2ee =
rdisp\j2ee_start_control =
rdisp\j2ee_start =
rdisp\j2ee_timeout =
rdisp\frfc_fallback =
jstartup\trimming_properties =
jstartup\instance_properties =
jstartup\protocol =
exe\jlaunch =
```

5. Add a comment sign to the front of the lines beginning with the following parameter names in the start profiles of the central instance and of all J2EE dialog instances (<drive>:\usr\sap\<SAPSID>\SYS\profile\START_<INSTANCE_NAME>_<host_name>):

```
_DB =
Start_Program_00 =
```

6. Delete the SAP central services, as described in Deleting an SAP Instance [Page 98].
7. Delete the J2EE database schema (see the corresponding section below).´
8. Delete the following directories (<xx> is the central instance number):
   - \usr\sap\<SAPSID>\DVEBMGS<xx>\SDM
   - \usr\sap\<SAPSID>\DVEBMGS<xx>\j2ee

Deleting a Complete SAP System

1. You delete all (J2EE) dialog instances, the central services instance, and the central instance. For more information, see Deleting an SAP Instance [Page 98].
2. You delete the MS SQL Server database and the J2EE Engine Database Schema Page 101].

8.4.1 Deleting an SAP Instance

Use

You use this procedure to delete the (J2EE) dialog instance and the SAP central services or the central instance.

Prerequisites

The SAP system is stopped and the database is shut down.

Procedure

We recommend to use perform this procedure only, if you have performed a full backup of your SAP system.

Using the SAP Uninstall Program

You use this option to remove a complete SAP system or select different instances to be deleted.

If you want to delete a J2EE dialog instance in an SAP Web AS – J2EE Add-In installation which is installed on the same host than the central instance, you have to delete the J2EE Add-In installation as described in Deletion of an SAP System Installation (J2EE) [Page 97].

1. Log on as a user with domain administration rights.
2. Choose *Start* → *Settings* → *Control Panel* → *Add/Remove Programs*.
3. The *Add/Remove Programs* dialog box appears.
4. Find the SAP entries.

   Each SAP instance that is installed on the computer is listed with an entry like *SAP Application Server for System <SAPSID>instance*
5. Choose *Remove*.

   The *SAP Uninstall Wizard* starts.
6. Choose *Next* in the *Welcome* window.

   The dialog box *Uninstalling SAP System* appears for you to select an uninstall method:

   Depending on your selection, note the following when using the checkbox to delete an SAP instance:

   - If your checkbox is marked gray, you delete or uninstall the following:
     - The SAP instance directory, for example: `usr\sap<SAPSID>\D00`
     - Services, for example `SAP<SAPSID>_00`
     - The whole system directory, for example `usr\sap\<SAPSID>\*`
   - If your checkbox is marked black, you delete or uninstall the following:
     - The SAP instance directory, for example: `usr\sap<SAPSID>\D00`
     - Services, for example `SAP<SAPSID>_00`
     - The whole system directory, for example `usr\sap\<SAPSID>\*`
     - Local and domain user accounts
   - If you have different SAP instances that use the same `<SAPSID>`, you can delete the instance directory only.

Uninstall Method	Action

8.4 Deletion of an SAP System Installation (J2EE)

Uninstall Method	Action
Typical	Select this if you want to completely uninstall the selected SAP instance(s).  • If you uninstall the central instance, the checkbox is marked black. • If you uninstall the dialog instance, the checkbox is marked gray. Choose *Finish* to delete the SAP instance.
Complete	Select this if you want to uninstall **all** the SAP instances that are installed on the local computer.  • All instances are marked with a black checkbox. • This uninstall method removes **all** the SAP instances listed in the *Add/Remove Programs Properties* dialog box, regardless of the highlighted selection. Choose *Finish* to delete all local SAP instances.
Custom	Select *Custom* and choose *Next* to access the *Select Components* dialog box that allows you to mark the instances you want to remove. In the *Select Components* dialog box, use the check box *beside* an instance to indicate whether only the instance involved or the entire system, with global accounts, is to be deleted.
	Uninstall instance-independent components Select this additional option, if there is no other SAP system on the local machine. With this option you can delete for example the saposcol program.
	Add Choose this option to manually add instances you want to delete if they do not appear on the list.
	Finish Choose to start the deletion.

The wizard informs you when the SAP system or selected instances have been deleted successfully.

8.4.2 Deleting the MS SQL Server Database and the J2EE Engine Database Schema

If you have multiple components installed in one database (MCOD), delete the database only if you want to delete all contained components as well. Otherwise, delete components on a selective basis (see **SAP Note 399910**).

For more information on how to delete the MS SQL Server database and the J2EE database schema, refer to **SAP Note 639710**.