

# ADM110

## SAP ERP Central Component Installation

*mySAP Technology*

Date \_\_\_\_\_  
Training Center \_\_\_\_\_  
Instructors \_\_\_\_\_  
Education Website \_\_\_\_\_

### Instructor Handbook

Course Version: 2005 Q1  
Course Duration: 2 Day(s)  
Material Number: 50070362  
Owner: Hay Bouten (I003662)



*An SAP Compass course - use it to learn, reference it for work*

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# About This Handbook

This handbook is intended to complement the instructor-led presentation of this course, and serve as a source of reference. It is not suitable for self-study.

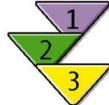
## Typographic Conventions

American English is the standard used in this handbook. The following typographic conventions are also used.

Type Style	Description
<i>Example text</i>	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths, and options.  Also used for cross-references to other documentation both internal (in this documentation) and external (in other locations, such as SAPNet).
<b>Example text</b>	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, and passages of the source text of a program.
<b>Example text</b>	Exact user entry. These are words and 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.

## Icons in Body Text

The following icons are used in this handbook.

Icon	Meaning
	For more information, tips, or background
	Note or further explanation of previous point
	Exception or caution
	Procedures
	Indicates that the item is displayed in the instructor's presentation.

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# Course Overview

This course explains how to install SAP ERP Central Component. It describes the planning, preparation, installation, and post-installation activities performed to install SAP ERP Central Component. This course also explains how to troubleshoot the problems encountered during the SAP ERP Central Component installation.

## Target Audience

This course is intended for the following audiences:

- SAP system administrators
- Technology consultants

## Course Prerequisites

### Required Knowledge

- SAPTEC - SAP NetWeaver: Fundamentals of the Application Platform
- ADM100 - SAP Web AS Administration I

### Recommended Knowledge

- Working experience with SAP system administration

## Course Duration Details

### Unit 1:

#### mySAP ERP Solution Architecture

Introduction to the mySAP ERP Solution	20 Minutes
New Features of SAP ERP Central Component and SAPinst	20 Minutes

### Unit 2: Planning the Installation of SAP ERP Central Component

Planning the Installation	45 Minutes
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### Unit 3: Preparing for the Installation of SAP ERP Central Component

General Preparation for Installation	25 Minutes
Further Preparation for Installation on Windows	25 Minutes
Exercise 1: Prepare the Installation of SAP ERP Central Component	10 Minutes
Further Preparation for Installation on UNIX	25 Minutes

**Unit 4: Installing SAP GUI**

Installation of SAP GUI for Windows	45 Minutes
Exercise 2: Install and Update SAP GUI for Windows	20 Minutes
Installation of SAP GUI for Java	25 Minutes
Exercise 3: Install and Configure SAP GUI for Java	10 Minutes

**Unit 5: Installing SAP ERP Central Component**

Introducing SAPinst	10 Minutes
Installing and Patching Oracle Database Software	60 Minutes
Exercise 4: Installing and Patching the Oracle Database Software	45 Minutes
Central Instance Installation	45 Minutes
Exercise 5: Install a Central Instance	10 Minutes
Database Instance Installation	60 Minutes
Exercise 6: Install Database Instance	35 Minutes
Dialog Instance Installation	20 Minutes
Exercise 7: Install a Dialog Instance	10 Minutes
SAP Web AS Java Central Instance Installation	60 Minutes
Exercise 8: Install a SAP Web AS Java Central Instance	10 Minutes
SAP Web AS Java Dialog Instance Installation	20 Minutes
Exercise 9: Install a SAP Web AS Java Dialog Instance	10 Minutes
Appendix: SAP Gateway Installation	0 Minutes

**Unit 6: Performing Post-Installation Activities**

Installation of SAP License and Other Components	25 Minutes
Exercise 10: Perform the Necessary Final Checks and Post-Installation Activities	20 Minutes
TMS and Basic Configuration	15 Minutes
Exercise 11: CTS and TMS Configuration	5 Minutes
Additional Tasks	30 Minutes
Exercise 12: Perform the Necessary Post-Installation Activities	20 Minutes
Appendix: Specific Post-Installation Activities	0 Minutes

**Unit 7: Implementing Patches**

Applying Patches	60 Minutes
Exercise 13: Applying Patches	15 Minutes

**Unit 8: Converting Non-Unicode to Unicode**

Procedure for Converting Non-Unicode to Unicode	30 Minutes
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**Unit 9: Troubleshooting Installation Problems**

## Solving Problems During SAP ERP Central Component Installation

30 Minutes



### Course Goals

This course will prepare you to:

- Install SAP ERP Central Component
- Troubleshoot the problems encountered during the installation of SAP ERP Central Component



### Course Objectives

After completing this course, you will be able to:

- List the new features of SAP ERP Central Component
- List the requirements to install SAP ERP Central Component
- Perform the necessary preparation steps to install SAP ERP Central Component
- Install the SAP GUI
- Install a central instance, a dialog instance and a database instance
- Install SAP Web Application Server Java
- Perform the necessary post-installation activities
- Apply patches to SAP ERP Central Component
- List the necessary steps to convert non-Unicode to Unicode
- Handle SAPinst and installation problems

### SAP Software Component Information

The information in this course pertains to the following SAP Software Components and releases:



### Course Instructor Profiles

### Level of Knowledge Required

It is recommended to attend the following courses as preparation: SAPTEC, ADM100, ADM325, and TTT for ADM110. If you cannot attend TTT, please try to attend the course, conducted by an experienced colleague, once.

### Courses Recommended as Preparation

See above

## Other, General Information Sources for Preparation

The instructor of ADM110 should know this instructor guide document well and be acquainted with the content of the named SAP notes of this course.

In addition, check the intranet or Service Marketplace using Quick Links /platforms and /instguides.

## Online Help Recommended as Preparation

Read the installation guide for the installation used in this course: SAP ERP Central Component on Windows 2000 and Oracle.

## Hints on Preparing for this Course

You need a preparation system for your preparation work.

As a result, order this preparation system for ADM110 using SAPNet Quick Link /ism.

*You must submit this order before Wednesday the week before you need access to the system.* There is no other way to access a preparation system.

1. Attend the training courses listed above.
2. Read this instructor guide carefully.
3. Obtain additional information using the other sources listed.
4. Repeat all exercises and solutions until you have detailed knowledge about them.
5. Clarify any remaining questions by contacting instructors for this course.

*This instructor guide does not replace preparation on the part of the instructor, nor does it provide the required system expertise. The intention of this guide is to support instructors while preparing to teach this course by pointing to information sources and providing tips to perform demonstrations.*

## Training System

- The copies of the necessary installation DVDs are in the G:\SETUP folder at the OS level of each training server.
- All other files necessary, such as patches, are located in the G:\SETUP\ADM110 folder at the OS level of the training server.

## User IDs and Passwords for Course Learners

operating system user: install

password: install

You have to use PCAnywhere or a Terminal Service Client to connect to the OS level. With R/3 Enterprise there could be some problems with the Terminal Service Client, because you cannot use the Terminal Service Client to install some Java-based components. There were NO problems encountered with Terminal Service Client during the test installations of SAP ERP Central Component.

### Technical Hints

To access training systems, you need SAP GUI 6.40 or later. You will install SAP GUI 6.40 during the course and also should be used for the rest of the course. SAP GUI 6.20 will also work, but during the setup of the TMS SAP GUI displays a popup that a new version of the SAP GUI is required.

### An Overview of the Course Structure

1. SAP ERP Central Component Architecture
2. Planning the Installation of SAP ERP Central Component
3. Preparing for the Installation of SAP ERP Central Component
4. Installing the SAP GUI
5. Installing SAP ERP Central Component
6. Performing Post-Installation Activities
7. Overcoming Bugs with SAP ERP Central Component
8. Converting non-Unicode to Unicode
9. Troubleshooting Installation Problems

You can swap unit 4 and 5 if you get into time trouble due to many questions. Keep in mind that you need to start with unit 5 around 4 p.m. on the FIRST day.

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# *Unit 1*



## **mySAP ERP Solution Architecture**



In this unit, explain the solution mySAP ERP and stress that SAP ERP Central Component (SAP ECC) is part of mySAP ERP. Also explain the SAP ECC architecture and its new features with SAP Web AS 6.40, such as Unicode, MCOD, directory server and SAPinst.

---

### **Unit Overview**

This unit describes the solution mySAP ERP and the architecture of SAP ERP Central Component and SAP Web Application Server Java. It also explains the new features of SAP ERP Central Component.



### **Unit Objectives**

After completing this unit, you will be able to:

- Describe the solution mySAP ERP and the architecture of its components
- Explain the new features of SAP ECC
- List the advantages of SAPinst

### **Unit Contents**

Lesson: Introduction to the mySAP ERP Solution.....	2
Lesson: New Features of SAP ERP Central Component and SAPinst.....	13

**Lesson: Introduction to the mySAP ERP Solution**

Lesson Duration: 20 Minutes

**Lesson Overview**

This lesson describes the solution mySAP ERP and the architecture of its components.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Describe the solution mySAP ERP and the architecture of its components



In this lesson, explain the mySAP ERP. In addition, explain the architecture of SAP Web AS Java and the three different installation options. The SAP Web AS Java used to be called the SAP J2EE Engine.

In the text SAP ERP Central Component or SAP ECC is used.

**Business Example**

ABC limited, a petrochemical company, uses SAP to manage its data. The company now wants to start using all the benefits from the latest SAP solution, mySAP ERP. As the system administrator of ABC, you need to install the mySAP ERP Central Component (SAP ECC) of the mySAP ERP solution. Before installing SAP ECC, you should learn about mySAP ERP solution and become familiar with the architecture of its components.

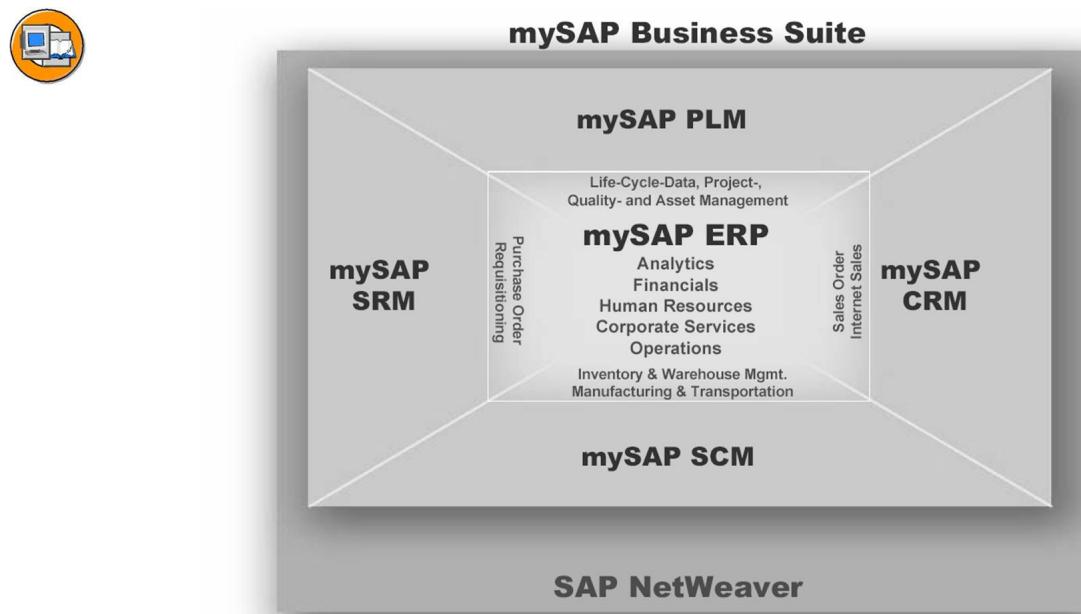
**The mySAP Business Suite**

mySAP ERP is a solution within the mySAP Business Suite. The mySAP Business Suite consists of:



- mySAP ERP (Enterprise Resource Planning)
- mySAP PLM (Product Life-cycle Management)
- mySAP SRM (Supplier Relationship Management)
- mySAP CRM (Customer Relationship Management)
- mySAP SCM (Supply Chain Management)

All the solutions from the mySAP Business Suite are powered by SAP NetWeaver.



**Figure 1: The mySAP Business Suite**

### **mySAP ERP: Next Generation ERP**

SAP's next-generation enterprise resource planning (ERP) solution, mySAP ERP, has been designed to meet today's changing demands on ERP. While leveraging existing IT assets, mySAP ERP allows companies to regain active control of their entire administrative and operations environment to increase efficiency and profitability. mySAP ERP enables new levels business process and technology integration while laying the foundation for incremental evolution of solutions.

In the past, ERP systems were wholly designed with an internal business focus; however, an increasing number of companies begin to transform their business processes to the Web. Therefore, there is a growing requirement for expandable ERP solutions that allow companies to collaborate on these processes with external parties such as customers and suppliers.

Powered by SAP NetWeaver, the open integration and application platform, mySAP ERP combines core ERP functionality with portal-based collaboration across the extended enterprise. mySAP ERP gives companies better control of their assets as well as business processes such as financial supply chain management, e-recruiting and profitability assessments of employees, departments, and customers.

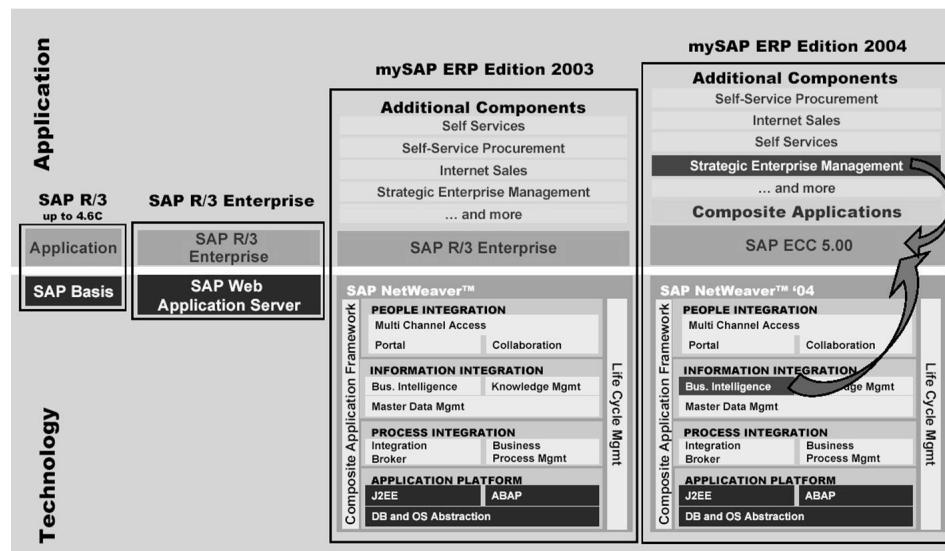


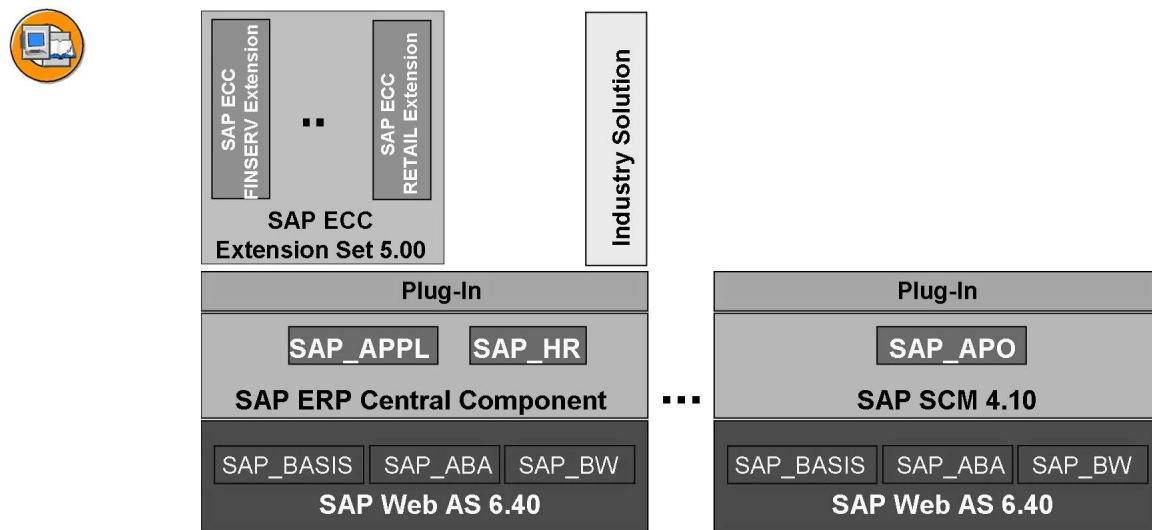
Figure 2: The mySAP ERP Development Strategy

As you see in the previous figure, the mySAP ERP solution is powered by SAP NetWeaver.

mySAP ERP consists of:

- SAP ERP Central Component
- SAP Enterprise Portal (as part of NetWeaver)
- SAP Business Warehouse (as part of NetWeaver)
- SAP Exchange Infrastructure (as part of NetWeaver)
- SAP Supplier Relationship Management
- SAP Strategic Enterprise Management
- SAP E-Recruitment
- SAP Learning Solution
- SAP Financial Supply Chain Management
- Employee Self-Services / Manager Self-Services
- SAP cProject Suite
- SAP Internet Sales Web Application Component

From a technical perspective, the latest version of SAP NetWeaver was used as the foundation of mySAP ERP components.



**Figure 3: Building Blocks of SAP Systems**

If you focus on the technical architecture of SAP ERP Central Component (SAP ECC) the building blocks appear in the previous figure.

From a technical point of view, the first SAP ECC release consists of three parts, each containing different software components.

→ **Note:** All building blocks can have different release numbers.

SAP Web Application Server (Web AS) 6.40 consists of, among others, the SAP kernel and the SAP\_BASIS 640, SAP\_ABA 640, and SAP\_BW 350 software components.

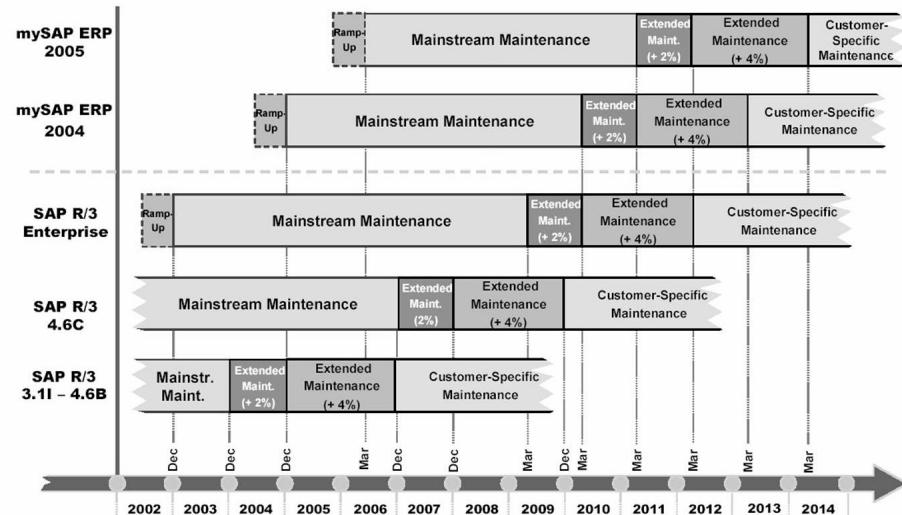
SAP ECC consists of the SAP\_APPL 470 and SAP\_HR 470 software components.

SAP ECC Extension Set 5.00 consists of the EA-HR 500, EA-APPL 500, EA-IPPE 300, EA- RETAIL 500, EA-GLTRADE 500, EA-PS 500, and EA-FINSERV 500 software components.

In addition, SAP ECC 5.00 contains the 2004\_1\_500 SAP R/3 plug-in and the PI\_BASIS 2004\_1\_640 SAP Basis plug-in. These components guarantee the integration of SAP ECC Extension Set and SAP ECC Core.

For more information on the SAP ERP Central Component 5.0 software architecture, refer to SAP note 733796.

Other SAP systems, such as SAP SCM 4.1 or SAP CRM 4.0, also include SAP Web Application Server but have different application functions.



**Figure 4: Release Strategy of mySAP ERP**

With last year's launch of Enterprise Services Architecture as the blueprint for all SAP solutions going forward, SAP set out to help companies transition toward services-based products and applications on an IT foundation that facilitates business change and growth through innovation.

The following approach provides customers with the necessary flexibility to identify a suitable path forward and plan their transition from SAP R/3 to mySAP ERP. The newly defined maintenance time frames above will help meet SAP customers needs for reliable, long-term planning.

SAP has introduced a new 5 - 1 2 release and maintenance strategy (see figure above for specific editions) for mySAP ERP, as follows:

- Duration of Mainstream Maintenance for a software release is 5 years
- Thereafter, Extended Maintenance is available for 1 more year at an additional fee of 2%
- Thereafter, Extended Maintenance is available for 2 more years at an additional fee of 4% per year
- Thereafter, the software release will enter Customer-Specific Maintenance

SAP uses the following release strategy for the different parts of SAP ERP Central Component:

- SAP ERP Central Component Extensions are delivered in an SAP ERP Central Component Extension Set.  
When customers upgrade to a higher release of an extension, they must upgrade the extension set.
- SAP ECC is maintained through support packages, such as APPL support packages and HR support packages.

### SAP Web Application Server Architecture

The application platform for every SAP system is the SAP Web Application Server (SAP Web AS). The SAP Web AS is build around a ABAP stack and a Java stack.



The ABAP part of the SAP system is called: SAP Web AS ABAP, but you will also read the name ABAP stack, ABAP Engine and ABAP VM (Virtual Machine).

The Java part of the SAP system is called: SAP Web AS Java, but you will also read the name Java stack, SAP J2EE Engine and Java VM(Virtual Machine).

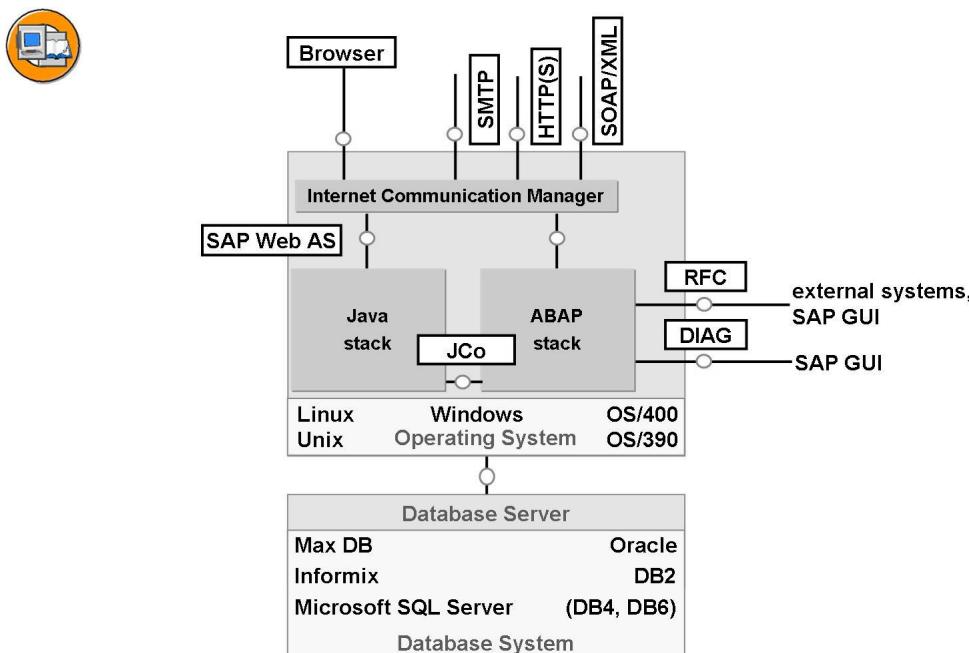


Figure 5: SAP Web AS 6.40: Architecture and Connectivity

SAP Web Application Server supports many open technical standards.

Internet Communication Manager (ICM) is a new process introduced with SAP Web AS 6.10. The ICM enables SAP systems to communicate directly with the Internet. It can also direct an HTTP request from an SAP system to a Web server and send the response back to the SAP system. The ICM also handles SMTP requests for mail exchange with a mail server.

The SAP Web Application Server Java can be integrated into the framework of SAP Web Application Server starting with release 6.20.



Describe the new features of SAP WEB AS Java available with SAP Web AS 6.40. The SAP J2EE engine was introduced with release 6.20

## The SAP Web Application Server Java Architecture

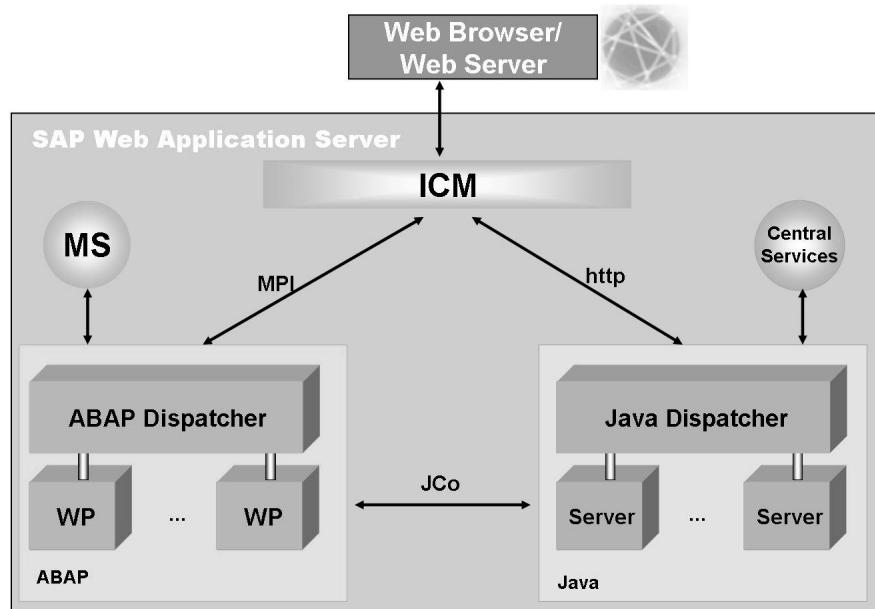


Figure 6: SAP Web Application Server Java: Web Access

SAP Web Application Server Java fulfills the J2EE 1.3 standard and has integrated standard APIs, such as JDBC, JNDI, and RMI.

The ICM ensures that a Web Browser client can connect to the SAP Web AS ABAP or SAP Web AS Java. If the request is a Java request, ICM redirects the HTTP request from the client to the SAP Web Application Server Java unchanged.

Data exchange between ICM and ABAP Dispatcher is done by memory pipes (MPI).

Connectivity between SAP Web Application Server Java and SAP Web AS ABAP is available via SAP Java Connector (JCo).

SAP Java Connector is a toolkit that allows a Java application to communicate with any SAP system. Calls from Java to an ABAP system and from an SAP system to Java are supported.

Software Delivery Manager (SDM) is a standalone tool shipped with SAP Web AS 6.20 and higher.

SDM deploys your self-developed and SAP-shipped software.

SDM provides tools, which provide functions similar to the **tp** and **R3trans** transport tools, to deploy Software Delivery Archives (SDA).

For more information, refer to SAP note 544979.

### SAP Web Application Server Architecture

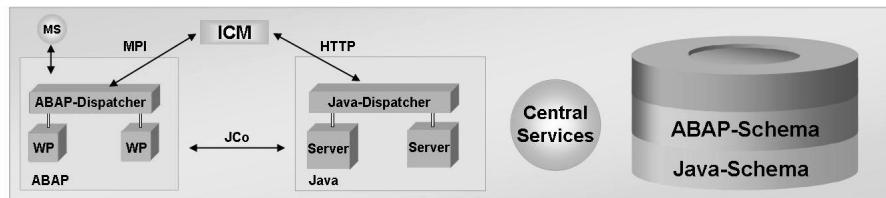
The SAP Web AS can be installed in many different configurations. The three basic configurations are explained in this section.



**Figure 7: SAP Web AS ABAP**

SAP Web AS ABAP is used when you only need the ABAP environment. This could be the case if you use the SAP ECC without any Java or Web services.

The SAP Web AS ABAP has always one central instance. If more performance is needed, one or more ABAP dialog instances can be added to the system.



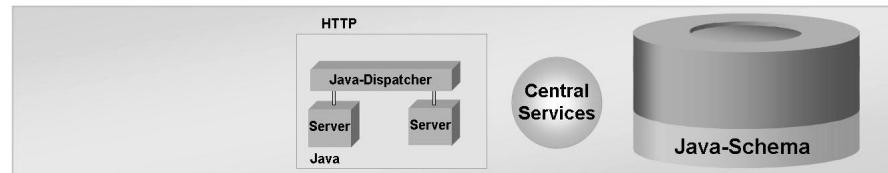
**Figure 8: SAP Web AS ABAP+Java**

The SAP Web AS ABAP+Java is used when all SAP ECC functionality is used. A Central Services instance is installed when a Java instance and a ABAP instance are installed together. The Central Services Instance is always installed on the ABAP Central instance.

The SAP Web AS Java has always one central instance. If more performance is needed one or more Java dialog instances can be added to the system.

You can start SAP Web AS Java by starting SAP Web AS ABAP. This guarantees correct communication between ICM and SAP Web AS Java.

The Central Services instance provides a Message Server and a Enqueue Service for the SAP Web AS Java instances.



**Figure 9: SAP Web AS Java**

The SAP Web AS Java is used when only the Java instance is needed. This configuration is used for the SAP Enterprise Portal.

The SAP Web AS Java has always one central instance. If more performance is needed, one or more Java dialog instances can be added to the system.



## Facilitated Discussion

### Discussion Questions

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the SAP ECC development strategy.

---



## **Lesson Summary**

You should now be able to:

- Describe the solution mySAP ERP and the architecture of its components

## Lesson: New Features of SAP ERP Central Component and SAPinst

 12

Lesson Duration: 20 Minutes

### Lesson Overview

This lesson describes the new features of SAP ERP Central Component. The lesson also lists the advantages of SAPinst compared to R3Setup.



### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the new features of SAP ECC
- List the advantages of SAPinst



In this lesson, explain the new features of SAP ECC, such as Unicode, Multiple Components in One Database (MCOD), directory server and SAPinst.

### Business Example

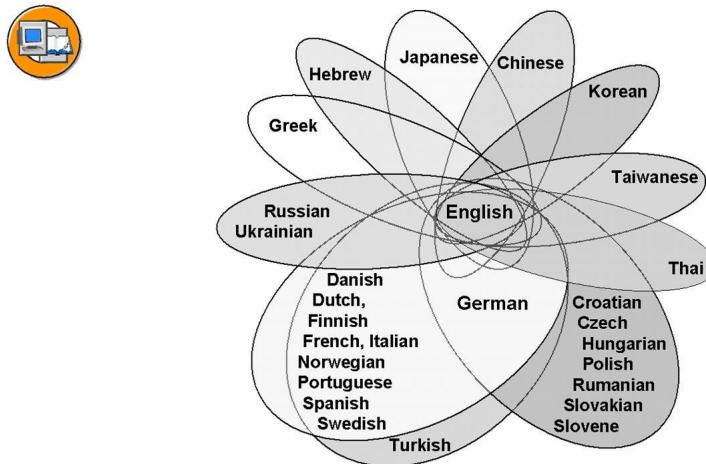
A petrochemical company, ABC Limited, uses the SAP system to manage its data. The company now plans to install the latest version of SAP system, SAP ERP Central Component, to use the functions delivered with the extension set of SAP ECC. As the system administrator of ABC you need to install SAP ECC. Before installing SAP ECC, you should learn about the new features of SAP ECC. You will use these features when installing SAP ECC.

### Unicode



#### Unicode

For more information, refer to course ADM102.



**Figure 10: Unicode (1/2)**

### Languages in SAP systems

- SAP systems support more than 30 different languages.
- Only languages belonging to the same code page are usable without restrictions.
- SAP supports multiple languages with Multi-Display-Multi-Processing (MDMP) systems.

Unlike other standard code pages, Unicode defines a character set that includes virtually all characters used worldwide and as a result provides consistent, global character encoding. Unicode is defined by the Unicode consortium (see <http://www.unicode.org> for more information), which consists of leading companies in the world-wide IT industry.

Until now, SAP has provided multiple language support using single code pages as well as multiple code pages in a single installation with MDMP, which permits the application server to dynamically switch code pages according to the logon language and language keys (see SAP note 73606). However, even in an MDMP system, an individual user can use only the characters belonging to one code page at a time. To enhance language support for mySAP Business Suite, SAP considers Unicode the appropriate development direction and strategy because Unicode offers a single, consistent, and standard character set encoding for virtually all languages in the world. A code page describes the assignment of one character to one hexadecimal (HEX) value. One (normal: 1 byte) code page represents 256 characters.

**A character set describes the type of storage for one character:**



- Single byte (one byte per character)
- Double byte (one or two bytes per character)
- Unicode (one or more bytes per character)

**On Unicode:**

- International standard; the Internet is based on Unicode
- Each character is assigned to a unique number
- Increase in resource consumption
  - CPU, memory, network: +30% to 35%
  - Database size: +36% (UTF-8) or +60% to +70% (UTF-16)

For more information about Unicode SAP systems and their availability, see SAP notes 79991, 540911, and 379940. Go to SAP Service Marketplace at <http://service.sap.com/unicode>.



**Hint:** Unicode is supported since SAP Web Application Server 6.10

**SAP Web AS 6.20 (and higher) Enhancements on Unicode:**



- You can use all languages in the ISO-639 standard as language tags
- RFC communication between Unicode systems and MDMP systems
- Maintain all characters from all languages in the SAP GUI simultaneously
- Improved (printer) code page maintenance

Unicode supports the following:

Characters from virtually every language and script to be used. This does not mean that localized versions or translations exist for all languages.

RFC: MDMP handling enables RFC communication between Unicode and MDMP systems without data loss due to code page incompatibility.

SAP GUI: Unicode is supported on Unicode systems as a front-end character set for the core functionality in the SAP GUI for Windows and in the SAP GUI for Java. It is possible to maintain all characters from all languages. You can use a single GUI to access both Unicode and non-Unicode systems.

Code Page maintenance: Enhanced, Unicode-based code page architecture improves (printer) code page maintenance.



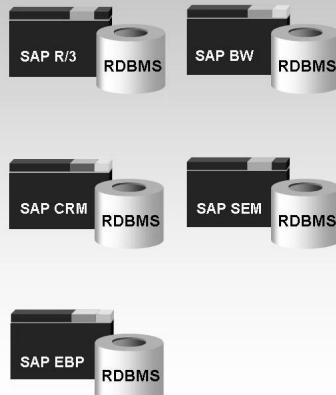
## MCOD

For the latest news, see SAPNet → MCOD.

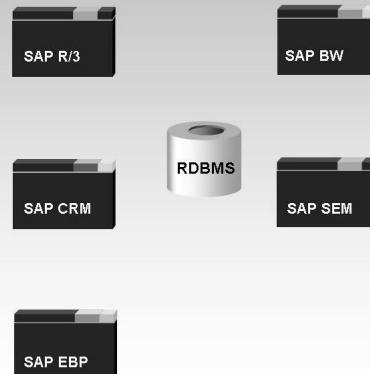
## MCOD



### Traditional system setup: *n* SAP systems, *n* Databases



### Simplification using MCOD option: *n* SAP systems, 1 Database



**Figure 11: MCOD (1/2)**

You can install multiple SAP systems on a single database using **MCOD**. MCOD is available with all mySAP Business Suite components. SAP has released this technology on all databases as of SAP R/3 Enterprise, in line with SAP's commitment to deliver platform-independent solutions.

Using the MCOD technology is as easy as installing a separate component. No extra effort is required because the MCOD installation is fully integrated with the standard installation procedure. MCOD is not an additional installation service; it is an option of SAP ECC installation.

SAP recommends running MCOD systems in the same context. SAP does not recommend mixing test, development, and productive systems in the same MCOD database. Mixing of productive and non-productive systems is not supported.

When MCOD became available in 2002, SAP recommended separating OLTP applications, such as SAP ERP Central Component, and OLAP applications, such as SAP BW, for performance reasons. Now, combined installations of both component types are also supported under special conditions.

MCOD, which is a powerful way to install several mySAP Business Suite components on one physical database, offers the following main advantages:

- Full flexibility and independence of installed components
- Simplified administration, backup, and recovery
- Additive sizing approach
- Data consistency across systems
- Reduced maintenance and operating costs

For more information, go to [/mcod](#) on SAP Service Marketplace.

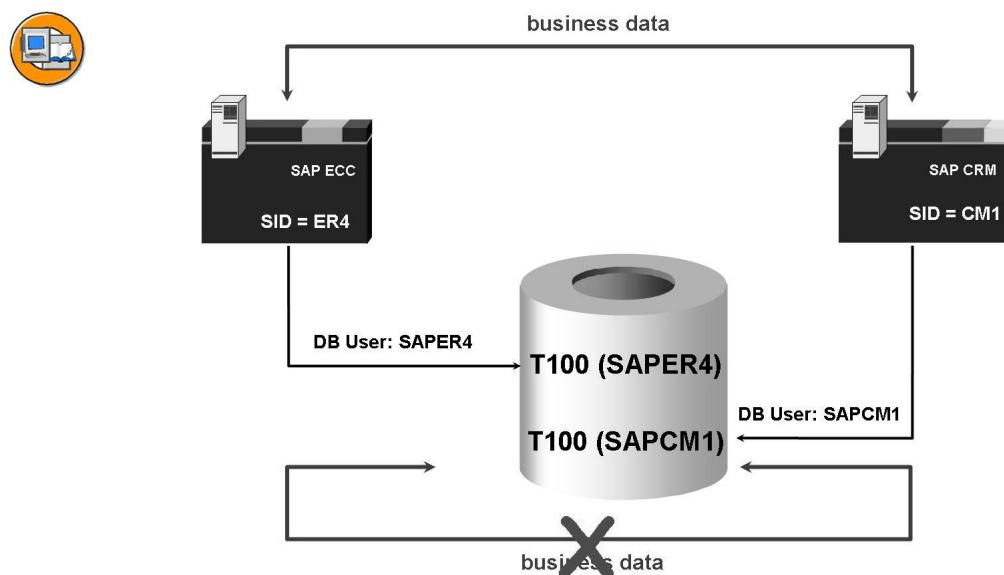


Figure 12: MCOD (2/2)

Administrative opportunities:

- Multiple, independent, and different software solutions are located in one database. Multiple identical software components, such as multiple SAP R/3 systems, are also possible.
- There is one logical and physical database instance.
- Point-in-time recovery of semantically-related systems, such as SAP R/3 and SAP CRM, is possible. Migrating existing systems is possible.
- All systems use the same OS/DB release.

Each mySAP Business Suite component connects the database with one single database user. This user is independent of the user logged on to SAP ECC. Databases support schemes. Tables with the same name can exist **independently in different schemes**, with different contents.

Using a one-to-one correspondence between the database user and the database schema, each mySAP Business Suite component uses its own schema by accessing the database with a unique dedicated database user.

The technical realization, in detail, depends on the database product. For more information on released platforms and availability, go to [/mcod](#) and [/platforms](#) on SAP Service Marketplace.

Data exchange between different SAP systems is done at the application level and not at the database level to ensure the following:

- Integrity of business data
- No locking conflicts on database tables
- No special coding for MCOD installations
- No additional educational effort for companies already familiar with the exchange of data between SAP systems

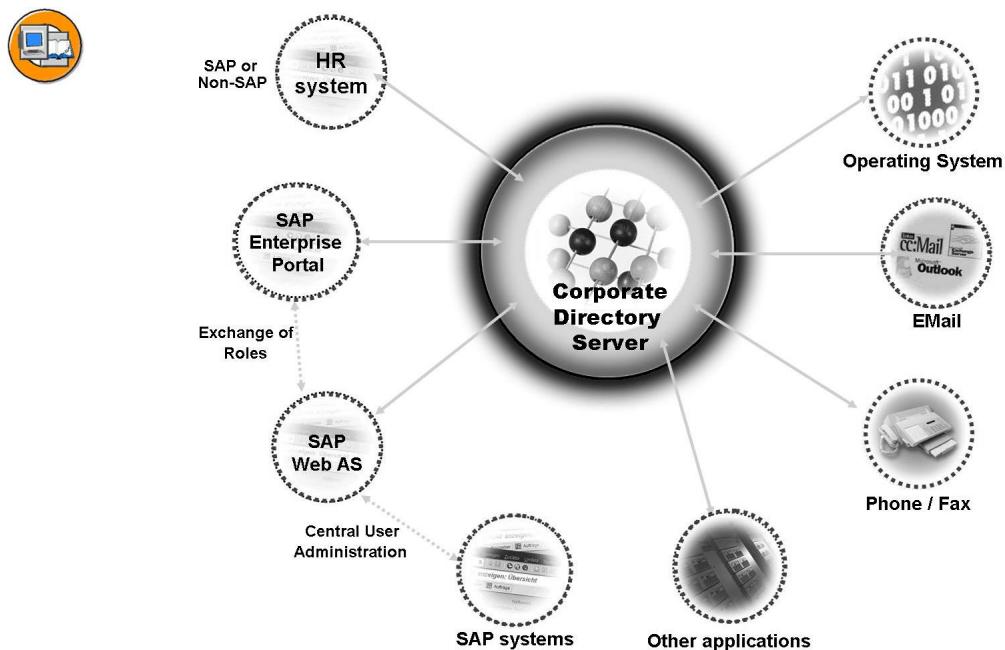


### Directory Server

For more information, see course ADM102.

---

# Directory Server



**Figure 13: Directory Server (1/2)**

A directory server acts as a central repository for the data used by different applications. The data is important in a heterogeneous system environment.

Usually, information about users, documents, or hardware is stored, but other objects can be stored as well.

Access is possible via a standard protocol, such as the Lightweight Directory Access Protocol (LDAP).

In contrast to Relational Database Management Systems (RDBMS), directory servers use a hierarchical structure to organize data.

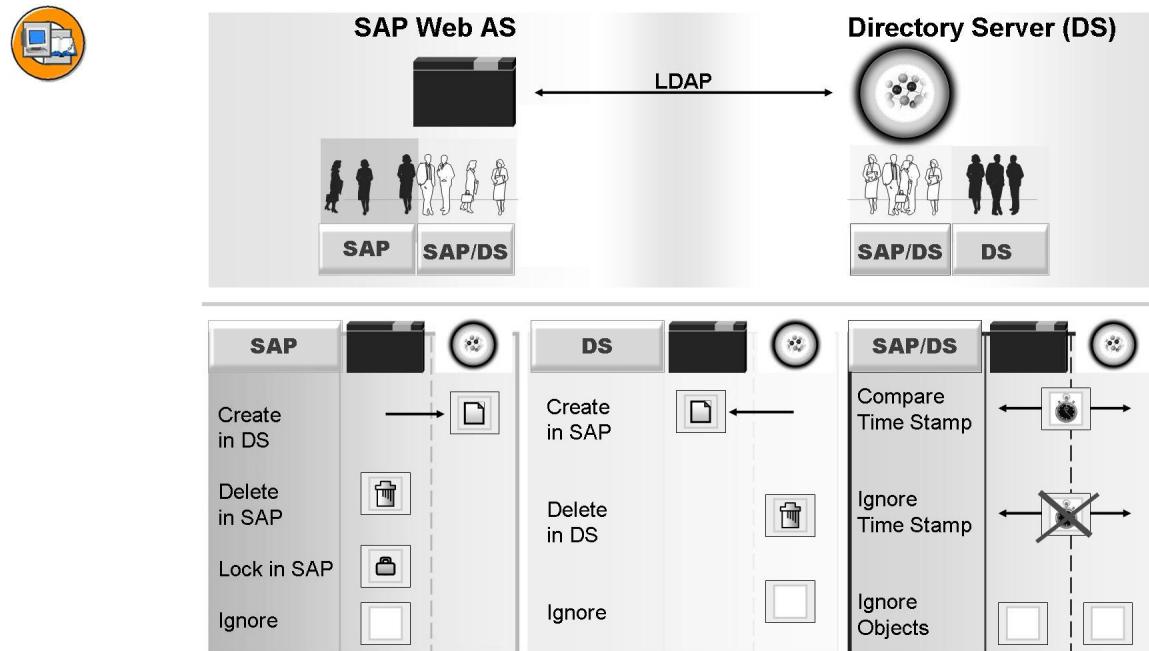
SAP has been working on integrating the directory server using LDAP for years:

- With SAP Basis 4.6A, the LDAP connector is an integrated part of the SAP application server.
  - With SAP Web AS 6.10, easy-to-use customizing was added (transaction LDAP).
  - SAP Enterprise Portal 5.0 requires a corporate directory server as a user persistence store.

The concepts of directory server integration and Central User Administration (CUA) can be implemented independent of one another or together.

In August 2001, SAP Web AS 6.10 got the “Works with LDAP” certificate of OpenGroup.

Go to the /partnerdirectory on SAP Service Marketplace for a list of SAP-certified vendors of directory servers.



**Figure 14: Directory Server (2/2)**

Technically, setting up the integration of a directory server is done in Customizing, which is performed via the Implementation Guide (IMG) or using transaction LDAPI.

During synchronization, three user groups are distinguished. Each group is processed based on the synchronization flags maintained in SAP ERP Central Component:

- User that exists only in SAP ECC
- User that exists only on the directory server
- User that exists both in SAP ECC and on the directory server. For this users, it is possible to select either delta synchronization (compare time stamps) or full synchronization (ignore time stamps).

For additional information, see Quick Link /security on SAP Service Marketplace (choose *Security in Detail → Identity Management → Directory Service Integration*) and SAP course ADM102.



Learners should now have a consistent level of knowledge about the new features of SAP Web AS 6.40 and SAP ECC.

All the new features are options to be selected during the installation, so learners should know the functions of the features.

---

## New Features of SAPinst

SAP provides a new installation tool:

System Landscape Implementation Manager: SAPinst.

The main advantages compared to R3SETUP are:



- You can disconnect from SAPinst using the logoff button and then reconnect by starting SAPinst GUI again.
- Step back is possible without restarting the installation.
- There is no abort due to errors.
- There are fewer log files, such as **sapinst.log**.
- The SAPinst GUI allows you to monitor the installation progress and see all messages issued by SAPinst.

Other features:

- Aborted installations can be resumed.
- The SAPinst GUI can be started on a remote computer.
- SAPinst GUI requires Java Runtime Environment (JRE) and Java Development Environment (JDK).

System Landscape Implementation manager (SAPinst) offers the following main advantages compared to R3SETUP, which was the previous tool:

- SAPinst lets you step back to correct your entries during the input phase without restarting the installation.
- SAPinst does not abort because of errors. Instead, it stops the installation and you can restart the installation after solving the problem. Alternatively, you can abort the installation manually if you want.
- SAPinst continues an aborted installation directly from the point of failure.
- SAPinst records the installation progress in a single log file, sapinst.log.

SAPinst has a GUI, SAPinst GUI, which allows you to monitor the progress of the installation and see all messages issued by SAPinst. Because the SAPinst GUI is Java-based, you need Java Runtime Environment (JRE).

You can start the SAPinst GUI on a remote computer, if required.

For more information on SAPinst, see the *SAPinst Troubleshooting Guide* documentation at <http://service.sap.com/sapinstfeedback>.



## Facilitated Discussion

### Discussion Questions

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the advantages of SAPinst.

---



## **Lesson Summary**

You should now be able to:

- Explain the new features of SAP ECC
- List the advantages of SAPinst



## Unit Summary

You should now be able to:

- Describe the solution mySAP ERP and the architecture of its components
- Explain the new features of SAP ECC
- List the advantages of SAPinst

## Related Information

- SAP Web AS Java:
  - SAP Library at <http://help.sap.com>: *Documentation → Release '04 → English → SAP NetWeaver → Application Platform (SAP Web Application Server) → Java Technology in SAP Web Application Server*
  - [service.sap.com/j2ee](http://service.sap.com/j2ee)
- SAP ERP Central Component: [service.sap.com/erp](http://service.sap.com/erp)
- Unicode: [service.sap.com/unicode](http://service.sap.com/unicode)
- MCOD: [service.sap.com/mcod](http://service.sap.com/mcod)
- Directory Server:
  - [service.sap.com/security](http://service.sap.com/security) *Security in Detail → Identity Management → Directory Service Integration*
  - [service.sap.com/partnerdirectory](http://service.sap.com/partnerdirectory)





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## Test Your Knowledge

1. The \_\_\_\_\_ process is one option to connect Web Browsers to the ABAP Engine and/or the SAP Web AS Java of an SAP system. Another option is the SAP ITS.

*Fill in the blanks to complete the sentence.*

2. Data exchange between SAP Web AS Java and SAP Web AS ABAP is available via:

*Choose the correct answer(s).*

- A MPI
- B SDM
- C ICM
- D Jco and fast RFC

3. How many characters does a standard code page (1 byte) distinguish?

---

---

---

---

4. In case of errors, SAPinst stops the installation automatically and restarts the installation process.

*Determine whether this statement is true or false.*

- True
- False



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## Answers

1. The ICM process is one option to connect Web Browsers to the ABAP Engine and/or the SAP Web AS Java of an SAP system. Another option is the SAP ITS.

**Answer:** ICM

2. Data exchange between SAP Web AS Java and SAP Web AS ABAP is available via:

**Answer:** D

SAP Java Connector is a toolkit that allows a Java application to communicate with an SAP system. Fast RFC provides an additional fast, local communication channel between SAP Web AS Java and SAP Web AS ABAP of an SAP system.

3. How many characters does a standard code page (1 byte) distinguish?

**Answer:** 256

4. In case of errors, SAPinst stops the installation automatically and restarts the installation process.

**Answer:** False

In case of errors, SAPinst stops the installation automatically and resumes it from the point of failure.

# *Unit 2*



## **Planning the Installation of SAP ERP Central Component**



In this unit, explain how to perform all the planning actions necessary for an installation. It is important to mention all SAP notes and Quick Links concerning planning considerations at service.sap.com.

---

### **Unit Overview**

This unit explains how to plan for the installation and the technical requirements of SAP ERP Central Component.



### **Unit Objectives**

After completing this unit, you will be able to:

- List the installation requirements for SAP ERP Central Component
- List the technical requirements for SAP ERP Central Component

### **Unit Contents**

Lesson: Planning the Installation ..... 30

## Lesson: Planning the Installation



Lesson Duration: 45 Minutes

### Lesson Overview

This lesson explains the installation requirements, such as hardware sizing and technical requirements, for SAP ERP Central Component. Before starting the installation of an SAP system, you need to answer several questions. Typically this phase starts several weeks (sometimes even months) before the actual installation work takes place.



### Lesson Objectives

After completing this lesson, you will be able to:

- List the installation requirements for SAP ERP Central Component
- List the technical requirements for SAP ERP Central Component



In this lesson, explain the hardware sizing requirements and other installation options for SAP ECC. In addition, explain the technical requirements, such as network and database requirements, for SAP ECC.

### Business Example

ABC Limited, a petrochemical company, uses SAP to efficiently manage its data. The company now wants to install the latest version of the SAP System SAP ERP Central Component, to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component. Before installing SAP ERP Central Component, you should plan the hardware sizing requirements and technical requirements, such as network and database requirements, for the installation.



### Sizing your System

Point the Quick Link /sizing at the Service Marketplace. Start the sizing simulation in the Quick Sizer tool.

With Quick Sizer, it is possible, if there is a lot of detailed information available for the new system, to define the system size with a deviation of around 20%.

**Sizing is an ongoing process**

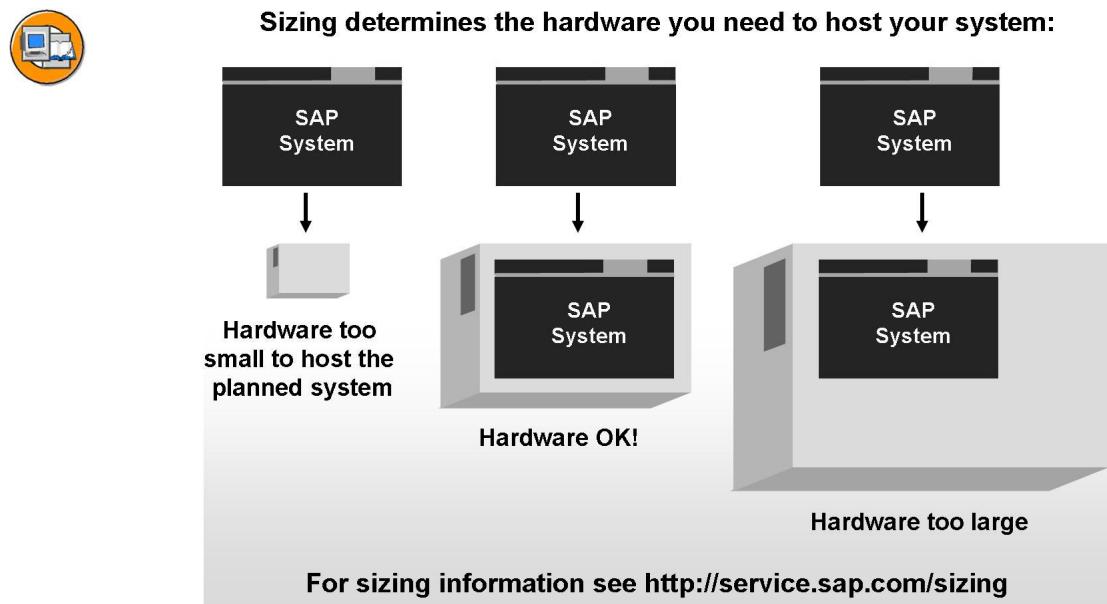
You must redesign sizing before you start an upgrade or any migration activities concerning DB type and operating system and after changing the user number.

Show the Quick Links mentioned in this lesson on service.sap.com.

### Sizing and Unicode

See ADM102 or the service.sap.com/unicode link for more information.

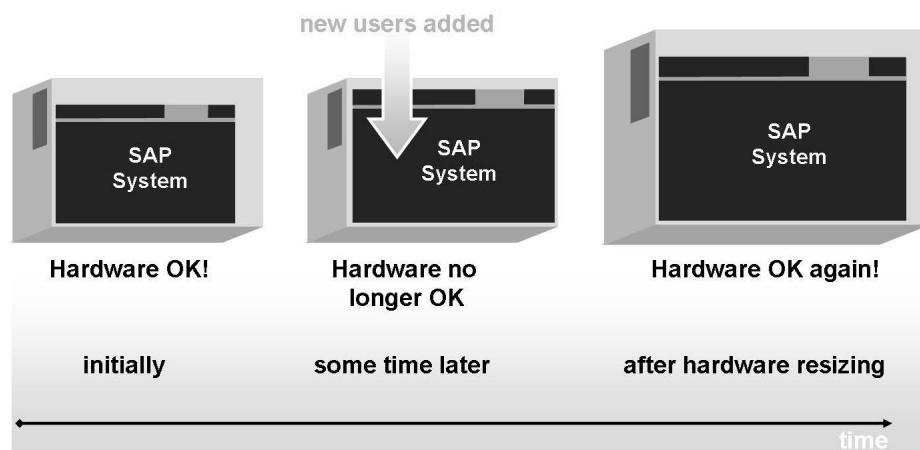
## Hardware Sizing



**Figure 15: Sizing Your System**

Consider the following potential issues:

- Hardware that is sized too small creates additional costs by causing bad performance of the system. High response times lead to inefficient production.
- Adequate hardware prevents performance losses and avoids unnecessary hardware costs.
- Hardware sized too large means you invested too much money to reach your goal of good performance.

**Sizing is an ongoing process!****Figure 16: Sizing is an Ongoing Process**

Sizing plays a role very early in the planning of your SAP system landscape. It determines the hardware resources needed for your SAP system. The resources needed are influenced by several factors, such as:

- Number of concurrent users in the system and the activity levels of users
- Your company's goals for the average dialog answer time (1.5 seconds OK or 0.6 second required?)
- The amount of high availability (HA) needed; full-blown HA solutions may cost a fortune
- Type of system (SAP ECC, SAP BW, SAP CRM, and so on)
- Functions used in the system, such as SAP ECC: lean (HR and FI) or complex (PP)
- Release of system (SAP R/3 4.0B, SAP R/3 4.6C, SAP R/3 Enterprise, SAP ECC, and so on)
- Type of OS (32-bit, 64-bit OS/Linux, HP-UX, Solaris, AIX, Win NT, W2K, and so on)
- Type of database used (SAP DB, DB2 UDB, Microsoft SQL Server, Oracle, and so on)
- Type of access to the system (LAN, WAN, GUI type, and so on)
- Preferred backup concept (for example, online backup parallel to productive use requires more hardware)

If one or more of the these factors are subject to change, a new sizing or hardware improvement might become necessary.

If you perform a upgrade from 4.6C to SAP ERP Central Component, then you should read:

- The delta requirements 4.6C to R/3 Enterprise
- The delta requirements R/3 Enterprise to SAP ERP Central Component

In general, you can say that a new release will have additional hardware requirements. Always check the documentation and look at the SAP Service Marketplace (<http://service.sap.com/sizing/>).

#### **Unicode influences the following factors:**



- Load of applications on hardware (CPU & RAM)
  - See <http://service.sap.com/unicode>
  - See <http://service.sap.com/performance>
  - Result: about +30% to +35% CPU and +50% RAM
- Size of database
  - See <http://service.sap.com/unicode>
  - The result depends on the usage of UTF-8 (+36%) or UTF-16 (+60% to 70%).
- Performance of the database
  - Ask the database vendor for the performance results of databases using Unicode.

Unicode systems use between 1 and 5 bytes of space to store single characters, based on the character and its Unicode representation. As a result, in a simple estimate, the resources of the system could be doubled to be prepared for worst-case scenario.

In reality, the load on the CPU caused by the applications, in this case, the SAP software, increased by about 30-35%. The load on the RAM, again caused by application software and not database software, increased by about 50%.

The size of the database of Unicode systems, compared to non-Unicode systems, depends largely on the type of Unicode representation chosen. UTF-16 (+60% to 70%) requires more space than UTF-8 (+36%).

The performance of the database system is also affected. For performance data on the database systems under Unicode, contact your database manufacturer. For information about MaxDB, go to <http://www.mysql.com/products/maxdb/>.

The platforms supported by SAP ERP Central Component are identical to the platforms supported by SAP Web AS 6.40. For details, see:



- Released Operating Systems SAP Web AS 6.x SAP DB  
(SAP note 0407320)
- Released Operating Systems SAP Web AS 6.x DB2/UDB  
(SAP note 0407322)
- Released Operating Systems SAP Web AS 6.x DB2/390  
(SAP note 0407325)
- Released Operating Systems SAP Web AS 6.x DB2/400  
(SAP note 0410783)
- Released Operating Systems SAP Web AS 6.x Informix  
(SAP note 0407317)
- Released Operating Systems SAP Web AS 6.x MS SQL Server  
(SAP note 0407328)
- Released Operating Systems SAP Web AS 6.x Oracle  
(SAP note 0407314)

The SAP notes listed provide details about the availability of operating systems for different databases with SAP Web AS 6.40. There are a few differences between the availability of SAP Web AS 6.40 and SAP ECC. For these differences, check out the difference matrix found at <http://service.sap.com/platforms>.

Here, you find the typical hardware requirements for a central system-type installation of an SAP ECC system on MaxDB and Windows 2000 (taken from paragraph 4.5.1 of the corresponding installation guide).

For a system used for sandbox purposes:

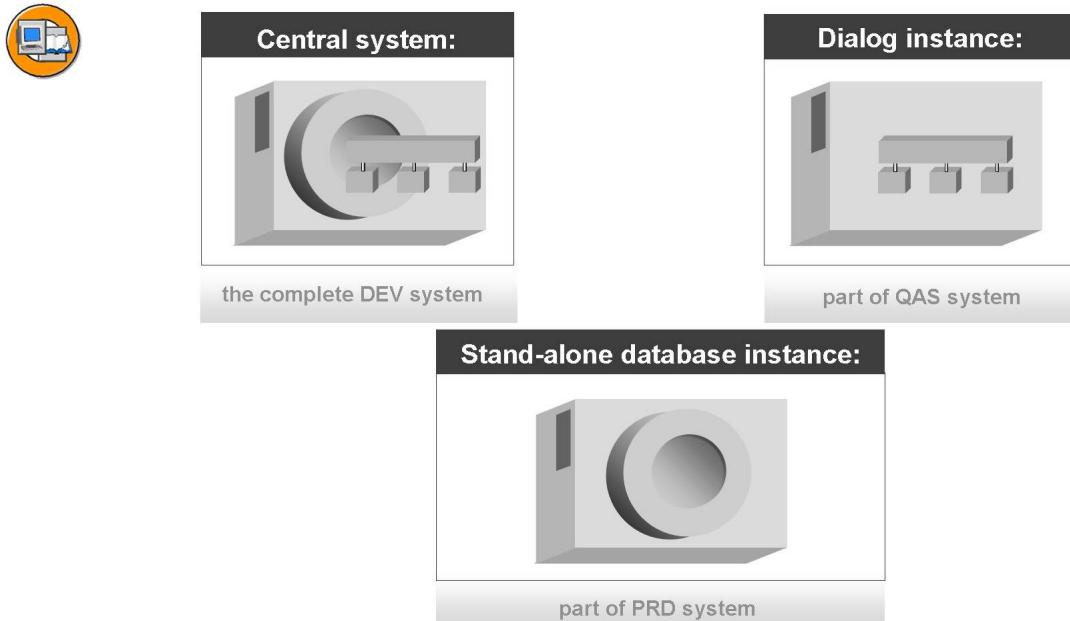
- Disk space: 20 gigabytes (GB) on at least three separate physical disks
- Random access memory (RAM): 512 MB (ABAP only) 786 MB (ABAP+Java) minimum, 4 times this value as page file

**For a productive system:**

- Disk space: 30 GB on at least three separate physical disks
- RAM: 2 GB minimum on Windows OS, 1.5 GB on UNIX
- Page/Swap: 4 times RAM on Windows OS (max. 20 GB), 3 times RAM on UNIX (32-bit: 20 GB Swap max., 64-bit: 20 GB Swap recommended)
- 384 MB up to 4 GB RAM for SAP Web AS Java, for both the Windows OS and UNIX

For UNIX, also see SAP note 407317.

## Installation Options



**Figure 17: Installation Options**

You can distribute SAP software in several ways on the available hardware. The result of the sizing may also influence this decision because the distribution of the software can affect system performance. Some examples and considerations follow:

**Central system:** All software needed for an SAP system, except the SAP GUI software for end users, is installed on one computer. This setup is useful in small companies where one server is able to offer all the hardware resources needed for the system.

**Stand-alone database instance:** In this scenario, the database gets its own hardware. In this way, interferences from the SAP instance on database performance are excluded. Because you can size this central hardware as large, you can use this setup in large installations with several thousand users.

**Dialog instance:** If you decide to install a central system and a need arises for additional SAP system users, an additional dialog instance is a possible solution. If you are using a stand-alone database instance, you need at least one dialog instance. A dialog instance may host as many users as their corresponding hardware allows. SAP systems may have many dialog instances. Productive systems with more than 20 dialog instances exist. In addition, it is possible, as shown in this workshop, to install multiple instances on one server.

**Gateway instance** (not shown): Optionally, a gateway instance can be set up to offer powerful communication performance for SAP systems that exchange data with external systems with a high load.



### Network: External Ports Used by the SAP System

Explain the standard ports used by SAP systems and the network load to be expected in a productive environment.

---

## Network Requirements

Technical Requirements

**A well-designed technical infrastructure ensures the lowest cost of ownership and improves the system's:**

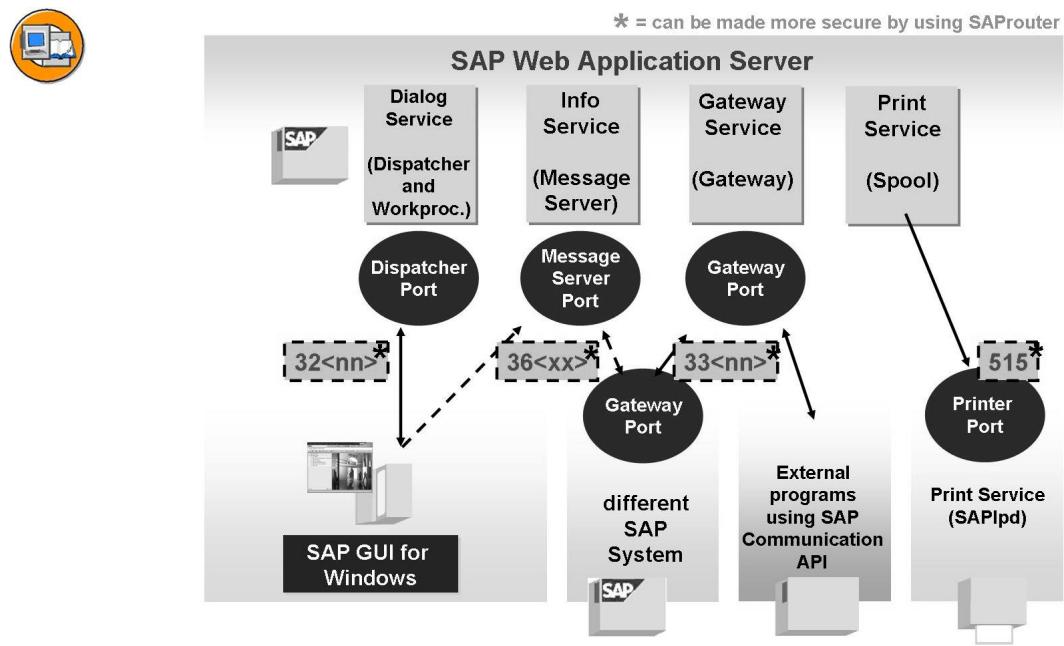


- Performance
- Functionality
- Availability
- Scalability
- Security

Find more information at <http://service.sap.com/ti> (ti = Technical Infrastructure).

The technical infrastructure describes the technical setup of SAP ERP Central Component. The technical setup includes the network layout, the server layout, the disk layout of the database, the type of computer interface used and many more details.

The technical infrastructure influences the listed technical areas.

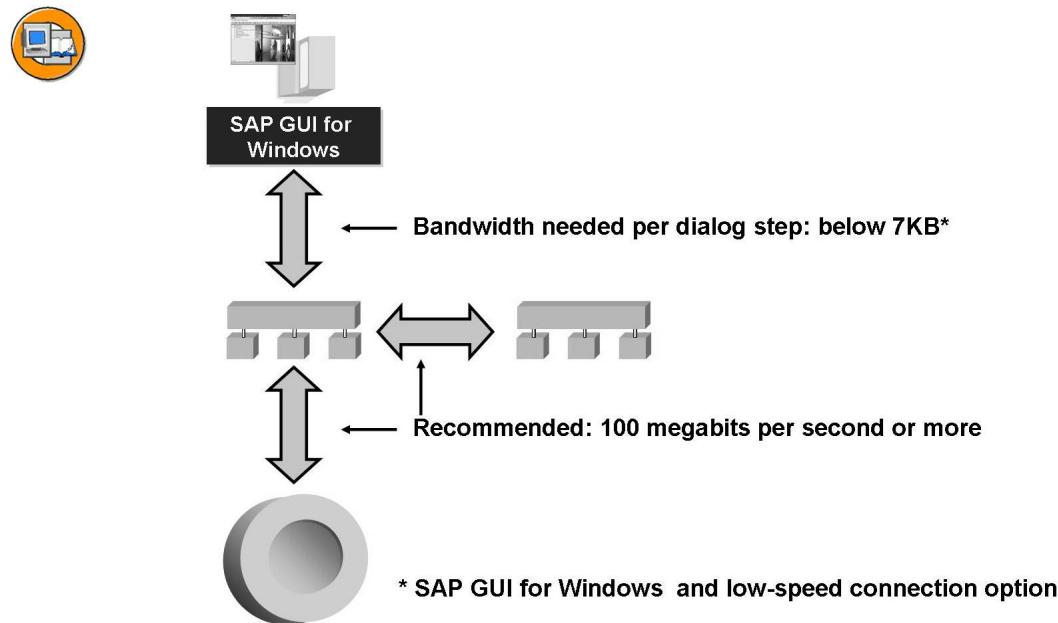


**Figure 18: Network: External Ports Used by SAP Systems**

As shown in the figure, SAP systems use several different ports for external communication. All these ports should be secured by some means, such as firewalls, routers, and SAProuter, to ensure the SAP system's security. In addition, SAP systems use several internal connections to communicate with the database. The number of connections and the ports used depend on the type of database employed.

The figure shows only the SAP Web Application Server ABAP ports . For the SAP Web Application Server Java, the port 50000 and higher are used. More information on how the SAP Web AS Java allocates the ports is given in the ADM200 course.

For more information, go to <http://service.sap.com/network> and choose *Network Integration of SAP Servers*.



**Figure 19: Network: Load Caused by SAP Communications**

The bandwidth needed between the computer interface and the application layer depends on the following parameters:

- Type of GUI used (BEx for SAP BW, SAP GUI for HTML, SAP GUI for Windows, and so on)
- Type of application (within SAP ECC: FI, HR, SD, and so on)
- Type of product used (mySAP CRM, mySAP BI, and so on)
- Low-speed connection flag used (SAP note 161053)
- Other applications on the front-end (office products) using the same connection

For more information, go to <http://service.sap.com/sizing>. From the menu, choose *Media Library → Literature*. From here, you can download the document, Frontend Network Requirements for SAP Solutions.

The load between the application layer and the database layer is considerable. As a result, SAP recommends offering a bandwidth of at least 100 megabits per second for this communication. It is usually not possible to separate the database by more than the LAN width from the application layer.

For more information on network layout for SAP servers, go to <http://intranet.sap.com/network> and display or download the document, Network Integration of SAP Servers, from this page.



**resides on RAID array  
of several physical disks**



For recommendations of disk layout, see next page

**Figure 20: Database: Disk Layout and High Availability**



### **Database: Disk Layout and High Availability**

SAP systems use different types of data, which should be stored on separate disks. SAP recommends using RAID technologies to ensure a productive environment.

---

## **Database Requirements**

**Databases of SAP systems hold different types of data:**



- Business data (master data, transaction data, and so on) and corresponding index data
- Logging data for the database (needed for recovery)
- Configuration data for the database

Databases of SAP systems are usually stored on disks combined with some RAID level (usually 1 or 5). Databases used for SAP systems can hold up to several terabytes of business data. Because practically you are unable to restore a large database, you have to ensure that data loss is avoided under almost all circumstances. The disk layout for databases used for SAP systems affects not only system performance, but also reliability and availability.

To ensure the maximum availability of your system, you have to take several scenario into account:

- Disk failure
- RAID controller failure
- Network card failure
- Network failure
- Power supply failure
- Massive environmental damages (fire, flood, earthquake, and so on)

For more information on these issues, go to <http://service.sap.com/ha>.



**Separate the following database data physically, as shown:**

- **Business data and index data**  RAID 5
- **Current logging data**  RAID 1
- **Database configuration data**  RAID 1

**Figure 21: Recommendations about the Database Disk Layout**

Using the configuration shown in the figure, you achieve an optimum of the factors hardware costs, availability, and performance. If costs are not a factor, higher-performing configurations are possible. For these options, see <http://service.sap.com/ha> and contact your hardware, operating system, and/or database vendor.

You should not store the historical log files of your database on any of the arrays listed in the figure; instead, you should save the historical log files to tape or any other suitable location **twice** before deleting them. Historical log files are referred to as Offline Redo Log Files by Oracle.



Historical log files could reside on a simple disk or a RAID 5, as they should be saved regularly as described above.

### Rules concerning the SAP system ID (<SID>):



- The SAP system ID (<SAPSID> or SID) and database system ID (<DBSID>) must be unique.
- The system ID must consist of three alphanumeric characters. Only uppercase letters are allowed. The first character must be a letter, subsequent characters may be digits.
- The following system IDs are reserved for SAP use and cannot be used:  
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

The database of the SAP system should have the same name as the SAP system it belongs to.



**Hint:** If you use Oracle as a database management system, you should be aware that you can choose the ID of the database schema as well. Please refer to SAP notes 355771 (Oracle: Explanation of the new tablespace layout) and 617444 (Separate SCHEMA ID for database schema and tablespace name).



You should read the above mentioned SAP notes carefully. You will have to explain it during the installation of the database instance

Database management systems can host multiple databases (exception: when MCOD is used).



**Note:** The set of reserved names may differ between different database and operating system combinations.



### Database users for SAP systems, more than one might be needed

SAP DB	SAP<SID>	control, also SUPERDBA
Oracle (9.20)	SAP<SID>	SYSTEM and SYS
MS SQL Server	<sid>adm	SAPService<SID>
DB2 UDB	SAP<SID>	db2<dbSID>

DB2 zOS	<sid>adm	also see installation guide
DB2 iSeries	<sid>OFR	
Informix	informix	sapr3



**Caution:** Read the installation guide and related notes carefully. There are critical differences in naming conventions. For example, for Microsoft SQL Server, the user <sid>adm must be named using lower-case characters<sid>, such as `tstadm`, while the user SAPService<SID> must be named using upper-case characters<SID>, such as `SAPServiceTST`.

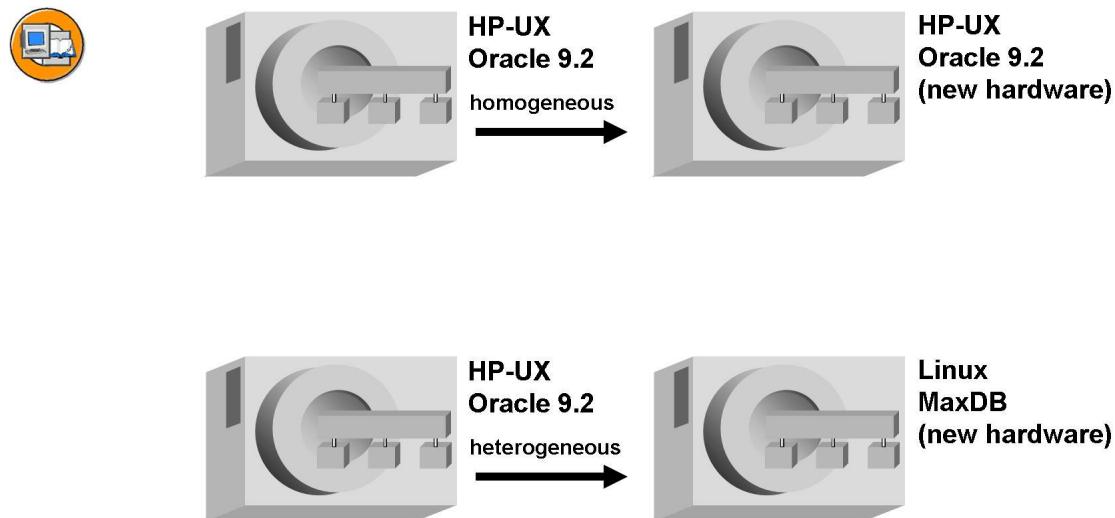
When higher security settings are used on iSeries computers, password entries become case sensitive. SAP note 495433 explains that the default password, using higher security settings, must be entered as **SAPOFR**.



### Installation Variants

During an installation, you can choose between a default installation, using SAP Export-CDs to fill the database, and system copy/migration. If you select system copy/migration during the installation, you can implement an export of any SAP system. A system copy without a change in the database type and the operating system is called a homogeneous system copy. A heterogeneous system copy is a system copy with a change of database type, operating system, or both.

## Installation Variants



**Figure 22: Installation Variants**

You can choose between two installation variants for your system: A new installation or a homogeneous or heterogeneous system copy.

For more information, go to <http://service.sap.com/osdbmigration> and <http://service.sap.com/instguides>. Choose *SAP NetWeaver → Release 04 → Installation* and display, print, or download System Copy for SAP Systems based on SAP Web AS 6.40.



## **Facilitated Discussion**

### **Discussion Questions**

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the factors influenced by Unicode.

---



## **Facilitated Discussion**

### **Discussion Questions**

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the network requirements to install SAP ERP Central Component.

---



## Lesson Summary

You should now be able to:

- List the installation requirements for SAP ERP Central Component
- List the technical requirements for SAP ERP Central Component



## **Unit Summary**

You should now be able to:

- List the installation requirements for SAP ERP Central Component
- List the technical requirements for SAP ERP Central Component

### **Related Information**

- SAP Service Marketplace <http://service.sap.com>:  
Quick Links: /sizing, /network, /performance, /ha, /ti, /unicode, /platforms, /instguides, /osdbmigration
- SAP notes as listed in this unit



## Test Your Knowledge

1. An SAP ERP Central Component system does not require more hardware resources than SAP R/3 4.6C.

*Determine whether this statement is true or false.*

- True
- False

2. SAP ERP Central Component is build on SAP Basis Technology.

*Determine whether this statement is true or false.*

- True
- False

3. When high security settings are used on iSeries computers, password entries become \_\_\_\_\_.

*Fill in the blanks to complete the sentence.*



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## Answers

1. An SAP ERP Central Component system does not require more hardware resources than SAP R/3 4.6C.

**Answer:** False

Apart from the additional resources required for Unicode, an SAP ERP Central Component system in general does require more hardware resources than SAP R/3 4.6C.

2. SAP ERP Central Component is build on SAP Basis Technology.

**Answer:** False

SAP ERP Central Component is build on the NetWeaver '04 technology.

3. When high security settings are used on iSeries computers, password entries become case sensitive.

**Answer:** case sensitive

# Unit 3



## Preparing for the Installation of SAP ERP Central Component



This unit explains what preparations need to be done just before you start the installation process.

### Unit Overview

This unit discusses the necessary preparations for the installation of SAP ERP Central Component.



### Unit Objectives

After completing this unit, you will be able to:

- Perform the general preparation steps needed to install SAP ERP Central Component
- Perform the necessary preparation steps to install SAP ERP Central Component on Windows
- Perform the necessary preparation steps to install SAP ERP Central Component on UNIX

### Unit Contents

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Lesson: Further Preparation for Installation on UNIX .....	76

## Lesson: General Preparation for Installation



Lesson Duration: 25 Minutes

### Lesson Overview

This lesson explains the general preparation steps needed to install SAP ERP Central Component.



### Lesson Objectives

After completing this lesson, you will be able to:

- Perform the general preparation steps needed to install SAP ERP Central Component



In this lesson, explain the general preparation steps to install SAP ERP Central Component.

### Business Example

ABC Limited, a petrochemical company, uses SAP to manage its data. The company now wants to install the latest version of the SAP, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension sets of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component. Before installing SAP ERP Central Component, you should perform some general preparation steps.



### Installation Preparation

You need to perform general preparation steps for all operating systems.

#### Install SAP Front End Software

Before a system upgrade, you need to upgrade the GUI; otherwise problems can occur because the GUI would have an older version than the system.

#### Prepare Installation DVDs

Copying to disk is also possible during the installation with SAPinst.

## Steps for preparing the SAP ERP Central Component installation

The following steps need to be performed as preparation for the SAP ERP Central Component (SAP ECC) installation.

### General installation preparation steps

- Order the installation DVDs.
- Download the SAP ECC installation guide.
- Download all the required SAP notes as listed in the installation guide.
- Prepare the installation DVDs.



<http://service.sap.com/swcat>

The screenshot shows a web browser displaying the SAP Software Catalog. The URL in the address bar is <http://service.sap.com/swcat>. The main content area shows a product listing for "SAP ERP Core Component - Installation Non-Unicode". The page includes a search bar, a sidebar with an "Overview" section containing links to various SAP products like SAP Solution Manager, SAP C-CEE, SAP C-CIS, etc., and navigation links for "Previous Page", "list view", "Next Product", and "Add to Cart".

Or download CDs at  
<http://service.sap.com/installations>

Figure 23: Order the Installation DVDs



<http://service.sap.com/instguides>

The screenshot shows the SAP Support Portal interface. In the top navigation bar, there are links for 'Welcome, Hay Bouter' and 'my Profile'. The main menu includes 'SAP Service Channel - my Inbox', 'HOME', 'Problem Solving', 'Downloads', 'Keys & Requests', 'Data Administration', 'Maintenance & Services', 'Tools & Methods', 'Release Info', and 'Knowledge Transfer'. On the right side of the header, there are links for 'Other Portals', 'Quick Links', 'Help', and the SAP logo.

The left sidebar shows a breadcrumb trail: 'You are here: Installation & Upgrade Guides > SAP ECC 5.0'. The main content area is titled 'SAP ECC 5.0' and displays a list of installation guides. A note at the top of the list says: 'To sort click on the appropriate column header. You can sort in ascending or descending order by clicking on the orange arrow. To download a document right click the icon and choose "Save target as..."'. The table has columns for 'File Type', 'Title', 'Installation Type', 'Lang.', 'Changed', and 'Size [KB]'. The data in the table is as follows:

File Type	Title	Installation Type	Lang.	Changed	Size [KB]
Inst.	Inst. Guide SAP ECC 5.0 ABAP on Windows; IBM eServer iSeries	New Instal	E	02.07.2004	617
Inst.	Inst. Guide SAP ECC 5.0 ABAP on Windows; MS SQL Server	New Instal	E	23.06.2004	1652
Inst.	Inst. Guide SAP ECC 5.0 ABAP on Windows; Oracle	New Instal	E	23.06.2004	1732
Inst.	Inst. Guide SAP ECC 5.0 ABAP; IBM eServer iSeries	New Instal	E	02.07.2004	1047
Inst.	Installation Guide SAP ECC 5.0 ABAP on UNIX ; Informix	New Instal	E	21.06.2004	1183
Inst.	Installation Guide SAP ECC 5.0 ABAP on UNIX ; MySQL	New Instal	E	21.06.2004	1224
Inst.	Installation Guide SAP ECC 5.0 ABAP on Windows ; IBM DB2 LUDB	New Instal	E	21.06.2004	1368
Inst.	Installation Guide SAP ECC 5.0 ABAP on Windows; Informix	New Instal	E	24.06.2004	3491
Inst.	Installation Guide SAP ECC 5.0 on UNIX ; Oracle	New Instal	E	22.06.2004	1834
Inst.	Installation Guide SAP ECC 5.0 on UNIX ; DB2 LUDB	New Instal	E	21.06.2004	1115
Planning Guide	Planning Guide SAP ECC 5.0 on UNIX ; Oracle	New Instal	E	18.06.2004	1249
Inst.	SAP ECC 5.0 ABAP Installation on Windows; MySQL MaxDB	New Instal	E	21.06.2004	1275
Upgrade Guide	Upgrade Guide ECC 5.00; Windows	Upgrade	E	26.07.2004	4985
Upgrade Guide	Upgrade Guide SAP ECC 5.00; IBM eServer iSeries	Upgrade	E	18.06.2004	6722
Upgrade Guide	Upgrade Guide SAP ECC 5.00; UNIX	Upgrade	E	25.06.2004	5504

**Figure 24: Download the Installation Guides**

For each installation, you should download the current installation guide for your specific combination of operating system and database system from SAP Service Marketplace (<http://service.sap.com/instguides>).

You should print the installation guide and read it carefully before starting the installation process. Have the installation guide ready during the installation to follow each successive step of the installation procedure.

### Download relevant SAP Notes

Download and print the current version of all the relevant SAP Notes. These SAP Notes contain additional information that is required when performing a SAP ECC installation. The SAP Notes can be found on the SAP Service Marketplace (<http://service.sap.com/notes>).

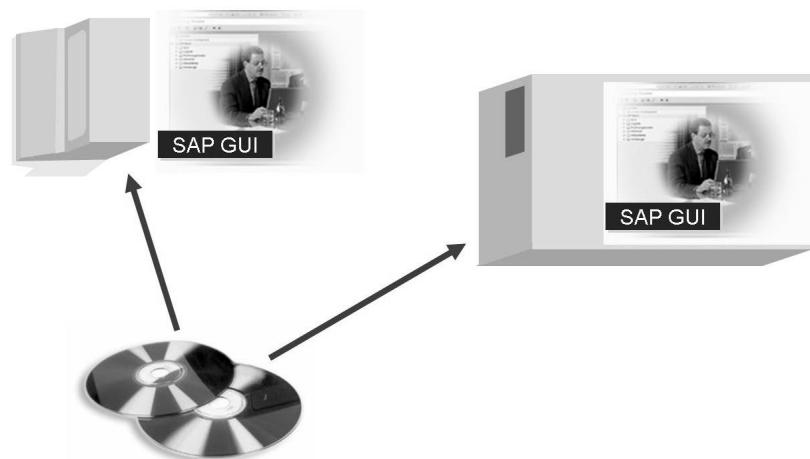


- 746576 - SAP ERP Central Component 5.0: Installation/upgrade
- 733796 - SAP ERP Central Component 5.0: Software architect./mainten.
- 740930 - Install Java Components on ERP Central Component
- 729326 - INST: SAP ERP Central Component 5.0 ABAP on UNIX
- 735793 - INST: SAP ERP Central Component 5.0 on Windows
- 668608 - Master Guide SAP NetWeaver '04
- 723288 - Central Installation Note SAP Web AS 6.40
- 668602 - SAP Software on UNIX: OS Dependencies 6.40
- 668603 - SAP Web AS 6.40 ABAP Installation on UNIX
- 668606 - SAP Web AS 6.40 Java Installation on UNIX
- 668607 - SAP Web AS 6.40 Additional Instances
- 674429 - SAP Web AS 6.40 Installation on UNIX: MySQL MaxDB
- 674521 - SAP Web AS 6.40 Installation on UNIX: Informix
- 668604 - SAP Web AS 6.40 Installation on UNIX: Oracle
- 694194 - DB2/390: SAP Web AS ABAP 6.40 for z/OS UNIX and Windows
- 691141 - DB6: SAP Web AS 6.40 - Installation on UNIX
- 675938 - SAP Web AS 6.40 ABAP Installation on Windows
- 676072 - SAP Web AS 6.40 Java Installation on Windows
- 674430 - SAP Web AS 6.40 Installation on Windows: MySQL MaxDB
- 674522 - SAP Web AS 6.40 Installation on Windows: Informix
- 675939 - SAP Web AS 6.40 Installation on Windows: MS SQL
- 675940 - SAP Web AS 6.40 Installation on Windows: Oracle
- 691143 - DB6: SAP Web AS 6.40 - Installation on Windows
- 544623 - New Installation of Unicode SAP systems
- 709038 - SAP ITS Release 6.40: SAP integrated ITS
- 598678 - Composite SAP Note: New functions in Oracle 9i

Download only the SAP notes relevant for your specific installation. For example, if you install an SAP ERP Central Component system on Linux and MaxDB, you should download SAP notes 729326, 668602, 668603, 668606 and 674429. You should also download the SAP notes mentioned in your installation guides.

Print the relevant SAP Notes and read them carefully **before** beginning an installation so you can avoid known problems.

Have all the relevant SAP Notes at hand during the installation so that you can quickly solve potential problems that might occur.



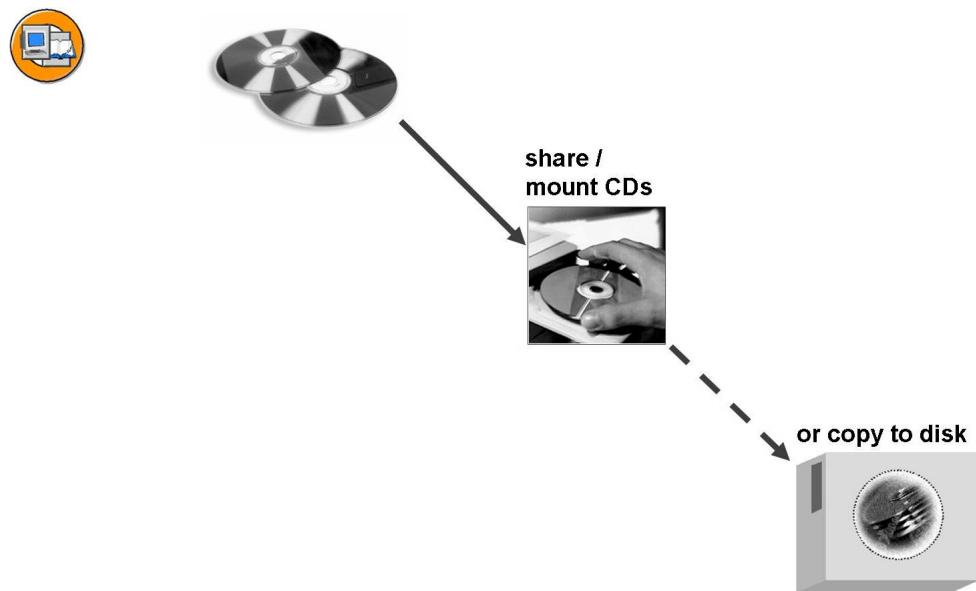
- **SAP GUI on at least one host machine  
(host of central instance)**

**Figure 25: Install SAP Front-End Software**

Ensure that the front-end software is installed on at least one host computer in your system environment. To simplify the administration of your SAP system, it is recommended that you do this on the central instance host.

For more information on installing the front-end software, refer to the Installing SAP GUI unit of this course and the separate documentation:

- SAP Front-End Installation Guide (English version)
- SAP Frontend-Installationsleitfaden (German version)



**Figure 26: Prepare Installation DVDs**

The installation guide lists the DVDs you need for the installation in the Preparing the Installation DVDs section.

Because you need at least one central instance and one database instance for an SAP system, SAP recommends making all required DVDs available in parallel. The EXPORT DVD 1 and 2 (containing database export CD 1-8) **must** be available in parallel.

Ensure that you have sufficient DVD drives available or copy the DVDs to a hard disk.



**Caution:** Don't use spaces in directory names when copying the DVDs to disk.

Some UNIX operating systems change directory names to lowercase during the copy process. SAPinst needs all directory and file names in uppercase.

You can copy an entire DVD during the installation using the SAPinst dialog CD Browser. SAPinst copies the DVD to the path you entered in *Copy Package to a column*.



## **Facilitated Discussion**

### **Discussion Questions**

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss how to prepare installation DVDs.

---



## Lesson Summary

You should now be able to:

- Perform the general preparation steps needed to install SAP ERP Central Component

## Lesson: Further Preparation for Installation on Windows



Lesson Duration: 25 Minutes

### Lesson Overview

This lesson discusses the preparation steps that you need to perform in addition to the general preparation steps to install SAP ERP Central Component on the Windows operating system.



### Lesson Objectives

After completing this lesson, you will be able to:

- Perform the necessary preparation steps to install SAP ERP Central Component on Windows



In this lesson, explain that, in addition to the general preparation steps, you need to perform some specific preparation steps to install SAP ERP Central Component on the Windows operating system.

#### Note for Exercise:

If some participants get an error message at the start of the installation of the Java SDK, check if they have started the installation twice.

### Business Example

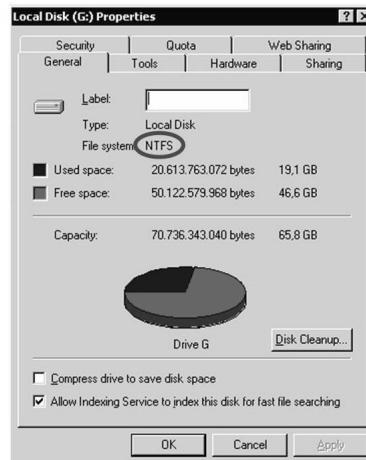
ABC Limited is a petrochemical company, which has been using the SAP system to manage its data. ABC Limited now wants to install the latest version of SAP system, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component on the Windows operating system. Before installing SAP ERP Central Component on Windows, you should perform some preparation steps.



Demo:

- Show that the file system of drive G: is NTFS.
- Apply the setting described to reduce the size of the file cache.
- Set SAPTRANSHOST in the hosts file.
- Check the user rights
- Install the JDK

## Preparing for Installation in Windows



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

**Figure 27: Windows File System: NTFS**

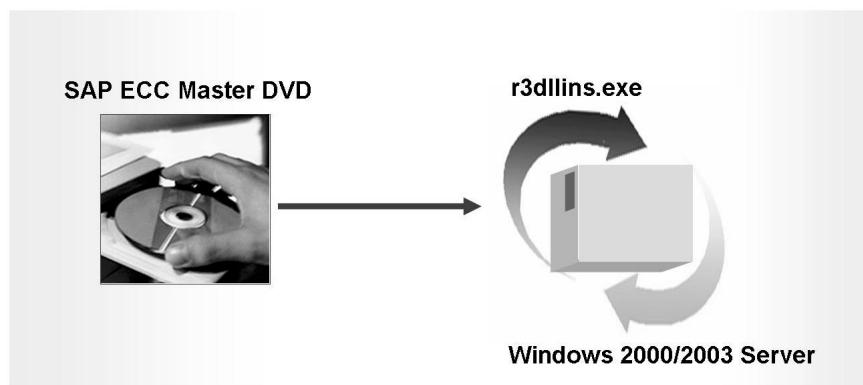
You must install an SAP system on an NTFS file system. Check the partition on which you plan to install SAP ERP Central Component for the correct file system type:



- Open Windows Explorer.
- Select a root directory, such as G:.
- Choose *Properties*.
- Switch to the *General* tab to see the type of file system in use.

SAP recommends that all SAP system and database hosts are members of a single Windows domain. This is valid for all SAP system setups, whether standalone central systems or distributed systems. In the single domain model, SAP ERP Central Component and the user accounts are included in a single domain. For performance and security reasons, no SAP instance or database instance should run on the domain controller.

If you want to use the Change and Transport system to move objects between different SAP systems, such as SAP systems with different SAPIDs, ensure that all the systems are either members of a single domain or members of different domains with a trust relationship established between them. Only SAP application and database servers (no other software) should be members of the domains.



**For Windows 2000 or 2003 Server.**

**Figure 28: Windows2000/2003: Update Dynamic Link Libraries**

As of Release 6.40, SAP is using the Visual Studio .NET 2003 compiler for x86 Windows. The required DLLs are usually installed with the SAP installation. However, if you are only using certain programs of Release 6.40 or higher, the necessary DLLs may be missing in your system.

If you have the SAP Installation Master DVD available, use the following procedure to update the DLLs.

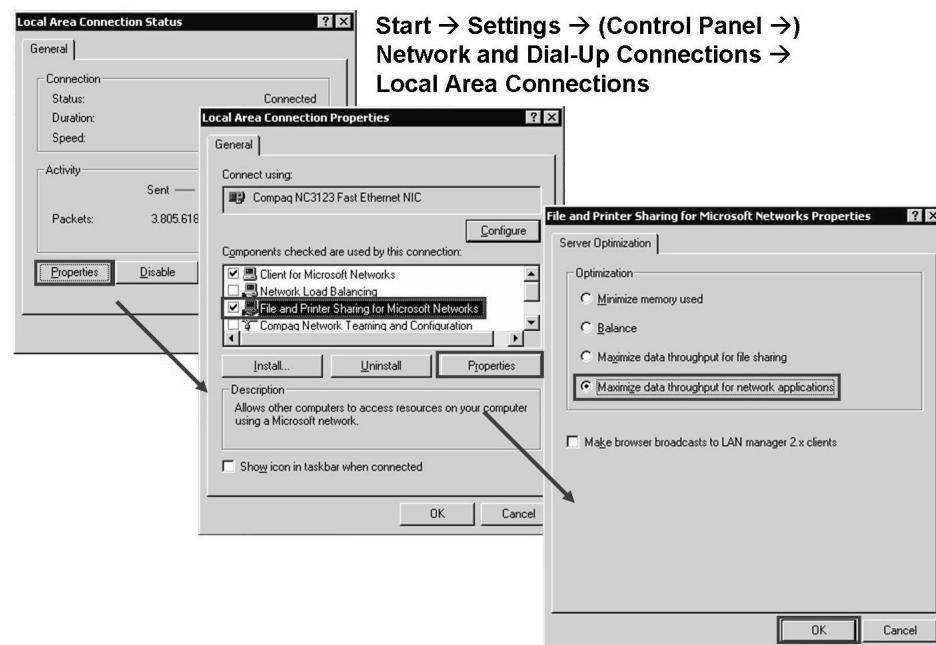
## Installing up-to-date DLLs



- Insert the SAP ECC Master DVD in the DVD-ROM drive.
- Switch to the <DVD DRIVE>:\IM<x>\NT\I386\NTPATCH directory.
- Start the r3dllins.exe program.

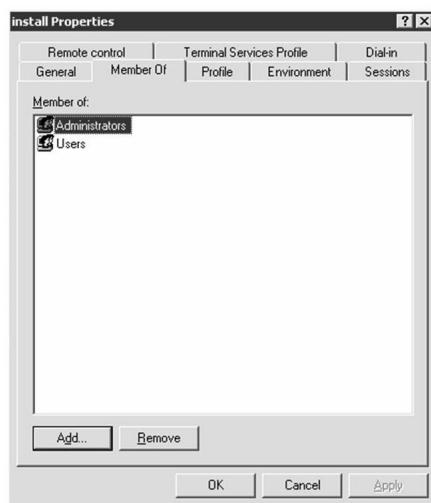
If you do not have the SAP Installation Master DVD available, you can install the missing DLLs by unpacking the archive attached to this SAP Note 684106 and by executing R3DLLINS.EXE.

When the installation has finished, you might get prompted to restart the system to activate the changes. If your DLLs are already up-to-date before you start the r3dllins.exe program, no new DLLs are installed and you are not prompted to restart.



**Figure 29: Windows: Reducing the Size of the File Cache**

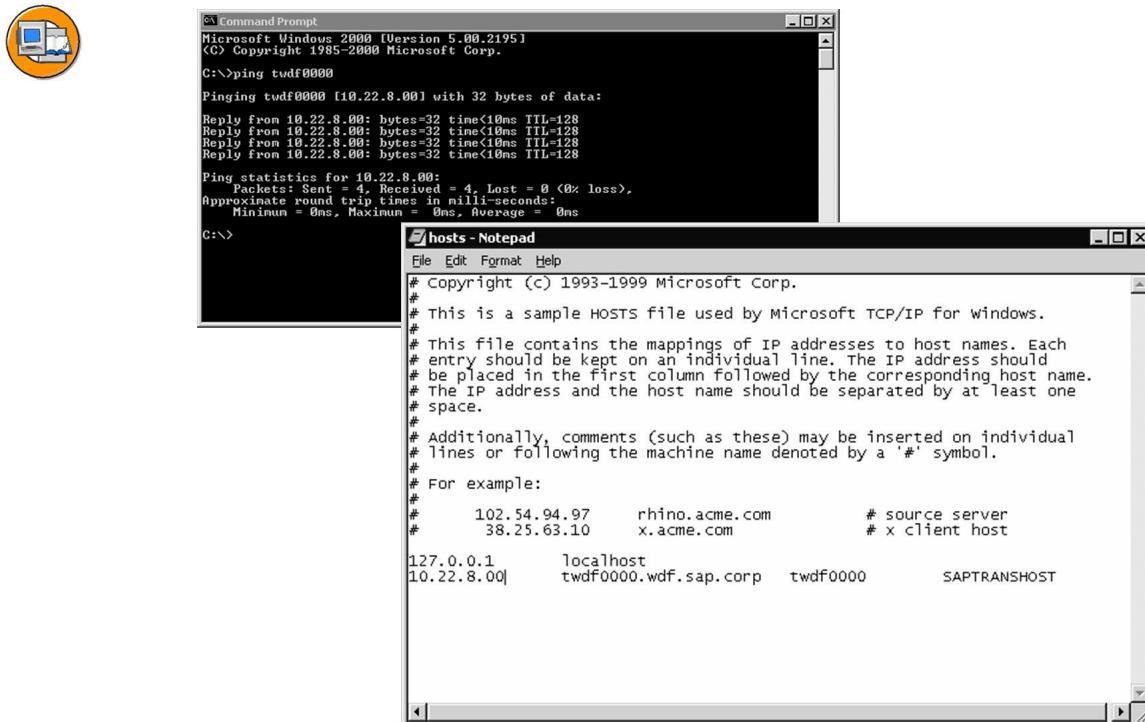
When the *Maximize data throughput for network applications* option is selected, the Windows file cache is reduced in size so that application server software, such as an SAP system, has more resources available. This also decreases the time needed for the installation, especially for the database import.



**Figure 30: Windows: User needs Administration Rights**

For the installation, you need a user with administration rights. To check if your user is a member of the Administrators group, choose *Start → Settings → Control Panel → Administrative Tools → Computer Management* and select the *Local Users and Groups → Users* folder. Choose your user and switch to the *Member Of* tab. If this is a domain installation, you should perform the check on the domain controller.

For a local installation, your user needs local administration rights; for a domain installation, your user needs domain administration rights.



**Figure 31: Windows: SAP System Transport Host**

You need to prepare one host in SAP ERP Central Component for the role of transport host. This host has the function of controlling the import or export of files between the current SAP system and other SAP systems, such as a test or production system.

Find out the IP address of the host using the **ping <hostname>** command (pay attention if DHCP is enabled).

If a DNS server is available for your system, map the IP address of the transport host to the SAPTRANSHOST alias. If no DNS server is available, you can map the IP address to the SAPTRANSHOST alias in the *Hosts* file.

#### Use the following procedure to map the IP address to the alias (no DNS server):



- Go to <DRIVE>:\WINNT\system32\drivers\etc.
- Open the *Hosts* file with an editor and add the line:  
`<IP_ADDRESS> <fully qualified hostname> <hostname> SAPTRANSHOST`
- The result of this step is to assign the SAPTRANSHOST alias to the transport host.
- Copy the newly edited *Hosts* file to all hosts where an SAP instance is to run.

If you experience problems with the SAPTRANSHOST alias in UNC paths (`\<hostname>`), refer to SAP note 360515.



**Caution:** The Java SDK installation is NOT needed by SAPinst if you install SAP ECC on a Windows I386 platform. The correct SDK is delivered with the SAPinst executable. On other platforms you need to install the SDK for SAPinst.

We install the Java SDK here because during this course a SAP Web AS Java is installed and for this you need the SDK.

Install the Java SDK. If you receive an error message after starting the installation, check if you have started the SDK installation twice.

After installing the SDK, set the `JAVA_HOME` variable and add it to the Path variable.

## Preparing for the SAPinst Installation in Windows



SAPinst does not need the JDK on each operating system. For the installation we do here (on WIN200 32bit) SAPinst does not need the JDK. The JDK is definitely needed for the SAP Web AS Java! One should always check the instguide if SAPinst needs a JDK installation.



1. Install Java Development Kit on every host on which you want to run SAPinst
2. Clean up the JDK \ext directory
3. Set `JAVA_HOME` environment
4. Add `%JAVA_HOME%\bin` to your system path

### Java-based installation tool SAPinst



**Figure 32: Windows: Preparing the SAPinst Installation**

Before installing SAPinst, which is the System Landscape Implementation manager, some preparations are necessary.

Because SAPinst is a Java-based tool, the Java Software Development Kit (abbreviated as SDK or JDK) must be installed on all hosts where SAPinst will run. After installing the Java SDK, some rework is mandatory.



**Hint:** SAPinst does not need a JDK installation as prerequisite on every operating system. Check your installation guide if you need it for your operating system.

You can find the released JDK versions in SAP Service Marketplace at <http://service.sap.com/platforms>. Choose *Product Availability Matrix* → *SAP NetWeaver* → *SAP NetWeaver 04* → *SAP NetWeaver 04* in the main screen, scroll to the right and choose the *JSE Platforms* tab.

The steps are described in detail in the following figure.

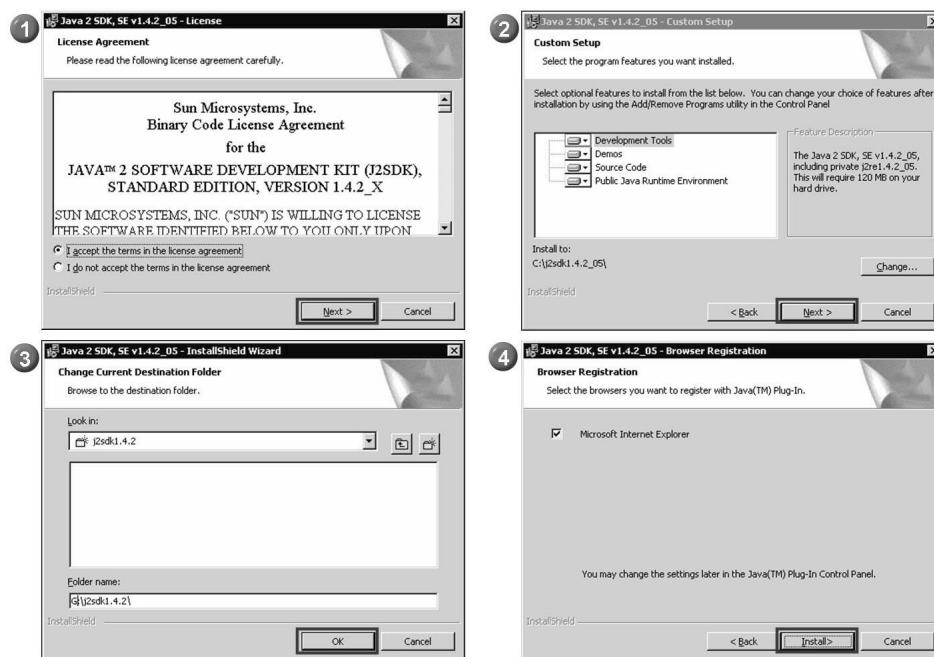


Figure 33: Windows: Java SDK Installation (1/2)



**Hint:** When you specify the Java installation directory, make sure that:

- There are no spaces in the directory path
- The directory only contains the version number and NOT the build number

This is because many non SAP tools use the path to the Java installation directory in start scripts. If you upgrade from e.g. j2sdk1.4.2\_04 to j2sdk1.4.2\_05 the directory name changes, but the scripts don't get changed.

Because SAPinst GUI is a Java-based tool, the Java SDK must be installed.

If you are not certain that the Java SDK is installed already, you can check under *Start → Settings → Control Panel → Add/Remove Programs*. The software is present if there is an entry for “Java 2 SDK Standard Edition...”



**Caution:** The Java 2 Runtime Environment (JRE) is not sufficient for the SAPinst tool. A command-line check with `java -version` yields only the Java version, but not if JRE or JDK is installed.

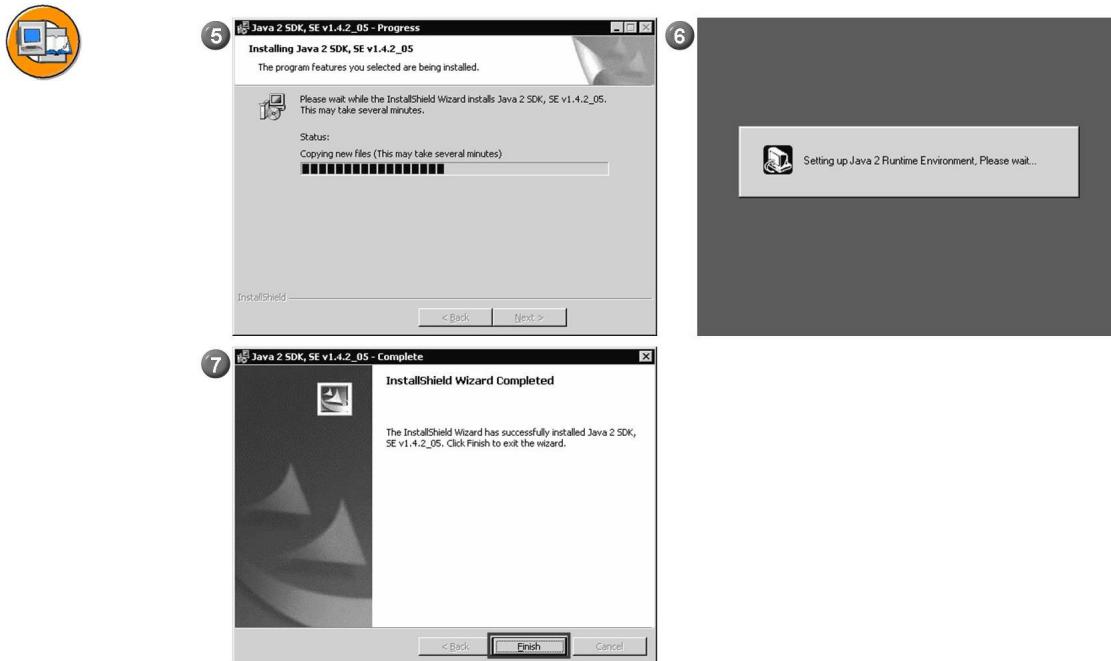
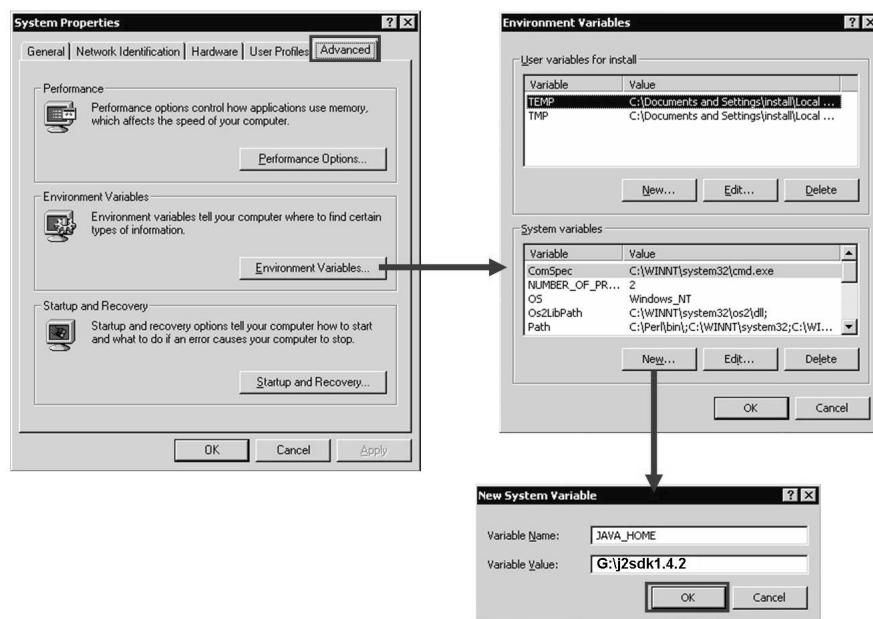


Figure 34: Windows: Java SDK Installation (2/2)

After the successful installation, check the Java \ext directory to see if <parser\_name>.jar files, such as xerces.jar already exist. The default path is <JAVA\_HOME>\JRE\lib\ext.

If you find any .jar files, do the following:

- Rename them to, for example xerces.xxx. This is only possible if the application to which the JAR files belong is not running during the installation.
- Remember to rename the files back to their original names after the installation procedure is complete.



**Figure 35: Windows: Environment Variable JAVA\_HOME (1/2)**

SAPinst needs the JAVA\_HOME environment variable to be set on the host(s) where SAPinst will run.

To check the JAVA\_HOME environment variable, choose *Start → Settings → Control Panel → System* and switch to the *Advanced* tab. Select *Environment Variables*.

Check if the JAVA\_HOME system variable is set to the Java home directory, which is the directory in which JDK is installed. If it is not set, create a new variable.

The procedure to create a new variable is:

- Choose *New*.
- Set Variable Name to **JAVA\_HOME**.
- Set Variable Value to a Java home directory, such as C:\j2sdk1.4.2\_05.
- Choose *OK*.
- The JAVA\_HOME variable is now present in the system variables list.

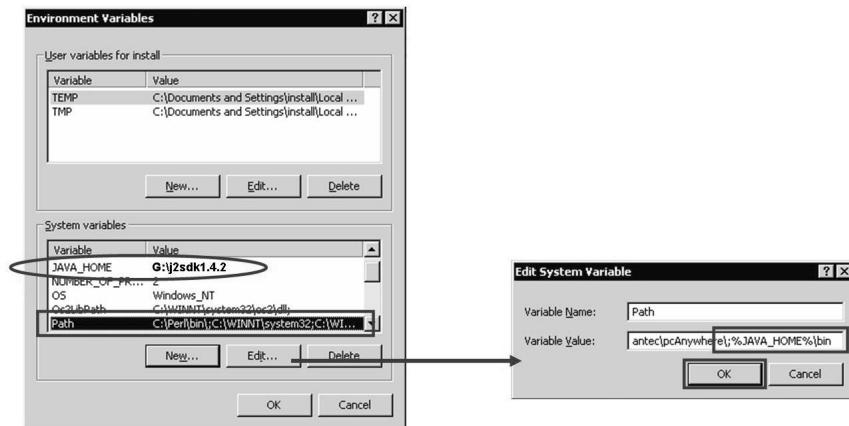


Figure 36: Windows: Environment Variable JAVA\_HOME (2/2)

After setting the JAVA\_HOME variable, you have to add the Java home directory to the **Path** variable.

The procedure to add the Java home directory to the Path variable is:

- Select the *Path* entry in the list of system variables.
- Choose *Edit*. Enter **%JAVA\_HOME%\bin** at the end of the *Variable Value* field. Use a semicolon (;) to separate the entry from the previous entry.
- Select *OK*.



### Preparation Checklist for Windows

You can use the checklist at home.

## Preparation Checklist for Installation in Windows



<input checked="" type="checkbox"/>	
	<b>Installation guide downloaded and printed out</b>
	<b>SAP Notes downloaded and printed out</b>
	<b>Installation guide and SAP Notes read</b>
	<b>SAP Front End available</b>
	<b>CDs available (copied to disk / in CD drive)</b>
	<b>File system is NTFS</b>
	<b>Dynamic link libraries updated</b>
	<b>Size of file cache reduced</b>
	<b>User has admin rights / min. passw. length=0</b>
	<b>SAPTRANSHOST set</b>
	<b>JDK installed</b>
	<b>Java \ext directory cleaned up</b>
	<b>JAVA_HOME set</b>

Figure 37: Preparation Checklist for Windows



## Exercise 1: Prepare the Installation of SAP ERP Central Component

Exercise Duration: 10 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Perform the necessary preparations to install the SAP ERP Central Component system

### Business Example

You are the system administrator of ABC, a petrochemical company. You have to install the latest version of SAP, SAP ERP Central Component (SAP ECC). Before installing SAP ECC, you need to perform the necessary preparation steps.

#### Task 1:

Check if the installation CDs are available.

1. To log on to your host, use the host name, the user name, and the password given to you by your instructor.



**Note:** Use pcAnywhere or a Terminal Service Client to connect to your host.

You find the installation CDs under G:\SETUP. The following CDs should be there: Export\_DVD\_1 , Export\_DVD\_2, SAP\_Kernel\_DVD\_Ora, Language\_DVD, Presentation, RDBMS\_ORA, SAP\_WebAS\_Java, SAP\_Installation\_Master\_ECC\_ORA, SAP\_Installation\_Master\_NW04\_ORA and ERP\_Components.

#### Task 2:

Check and/or adjust the necessary operating system settings and prepare SAP ERP Central Component transport host.

1. Check if the file system of the installation partition (G:) is NTFS.
2. Reduce the size of the Windows file cache by editing the properties of the local area connection.

*Continued on next page*

3. Check if your user has administration rights.
4. Prepare your host to be SAP ECC transport host.

**Task 3:**

Prepare the SAPinst installation by installing the Java 2 SDK and setting the JAVA\_HOME environment variable.

1. Install the Java 2 SDK.
2. Set the JAVA\_HOME environment variable to the just installed Java Home directory.
3. Add the Java home directory to the Path environment variable.

## Solution 1: Prepare the Installation of SAP ERP Central Component

### Task 1:

Check if the installation CDs are available.

1. To log on to your host, use the host name, the user name, and the password given to you by your instructor.



**Note:** Use pcAnywhere or a Terminal Service Client to connect to your host.

You find the installation CDs under G:\SETUP. The following CDs should be there: Export\_DVD\_1 , Export\_DVD\_2, SAP\_Kernel\_DVD\_Ora, Language\_DVD, Presentation, RDBMS\_ORA, SAP\_WebAS\_Java, SAP\_Installation\_Master\_ECC\_ORA, SAP\_Installation\_Master\_NW04\_ORA and ERP\_Components.

- a) To log on to your host, use the host name, the user name and the password given to you by your instructor.



**Note:** Use pcAnywhere or a Terminal Service Client to connect to your host.

You find the installation CDs under G:\SETUP. The following CDs should be there: Export\_DVD\_1 , Export\_DVD\_2, SAP\_Kernel\_DVD\_Ora, Language\_DVD, Presentation, RDBMS\_ORA, SAP\_WebAS\_Java, SAP\_Installation\_Master\_ECC\_ORA, SAP\_Installation\_Master\_NW04\_ORA and ERP\_Components.

Follow the exercise description.

### Task 2:

Check and/or adjust the necessary operating system settings and prepare SAP ERP Central Component transport host.

1. Check if the file system of the installation partition (G:) is NTFS.

- a) Check if the file system of the installation partition (G:) is NTFS.

Follow the directions given for Windows File System: NTFS in this lesson.

*Continued on next page*

2. Reduce the size of the Windows file cache by editing the properties of the local area connection.
  - a) Reduce the size of the Windows file cache by editing the properties of the local area connection.

Follow the directions given for Windows: Reducing the Size of the File Cache in this lesson.
3. Check if your user has administration rights.
  - a) Check if your user has administration rights.

Follow the directions given for Windows: User for Installation in this lesson.
4. Prepare your host to be SAP ECC transport host.
  - a) Prepare your host to be SAP ECC transport host. Follow the directions given for Windows: SAP System Transport Host in this lesson.

### Task 3:

Prepare the SAPinst installation by installing the Java 2 SDK and setting the JAVA\_HOME environment variable.

1. Install the Java 2 SDK.
  - a) Install the Java 2 SDK.

Go to G:\SETUP\ADM110\J2SDK and choose the j2sdk-1\_4\_2\_05-windows-i586-p.exe file.
2. Set the JAVA\_HOME environment variable to the just installed Java Home directory.
  - a) Set the JAVA\_HOME environment variable to the just installed Java Home directory.

Follow the directions given for Windows: Environment Variable JAVA\_HOME in this lesson.
3. Add the Java home directory to the Path environment variable.
  - a) Add the Java home directory to the Path environment variable.

Follow the directions given for Windows: Environment Variable JAVA\_HOME in this lesson.



## Lesson Summary

You should now be able to:

- Perform the necessary preparation steps to install SAP ERP Central Component on Windows

## Lesson: Further Preparation for Installation on UNIX



Lesson Duration: 25 Minutes

### Lesson Overview

This lesson discusses the preparation steps that you need to perform in addition to the general preparation steps to install SAP ERP Central Component on the UNIX operating system.



### Lesson Objectives

After completing this lesson, you will be able to:

- Perform the necessary preparation steps to install SAP ERP Central Component on UNIX

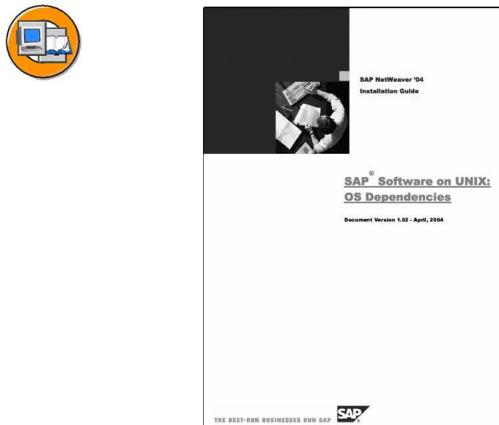


In this lesson, explain that, in addition to the general preparation steps, you need to perform some additional preparation steps to install SAP ERP Central Component on the UNIX operating system.

### Business Example

XYZ Limited, a sister company of ABC Limited, is also using the SAP system for data management. The company now wants to install the latest version of SAP system, SAP ERP Central Component, to use the functions delivered with the extension set of SAP ERP Central Component. The company is using the UNIX operating system on its computers. You have been assigned to the task of performing the preparatory steps to install SAP ERP Central Component in the UNIX environment.

## Preparing for Installation in UNIX

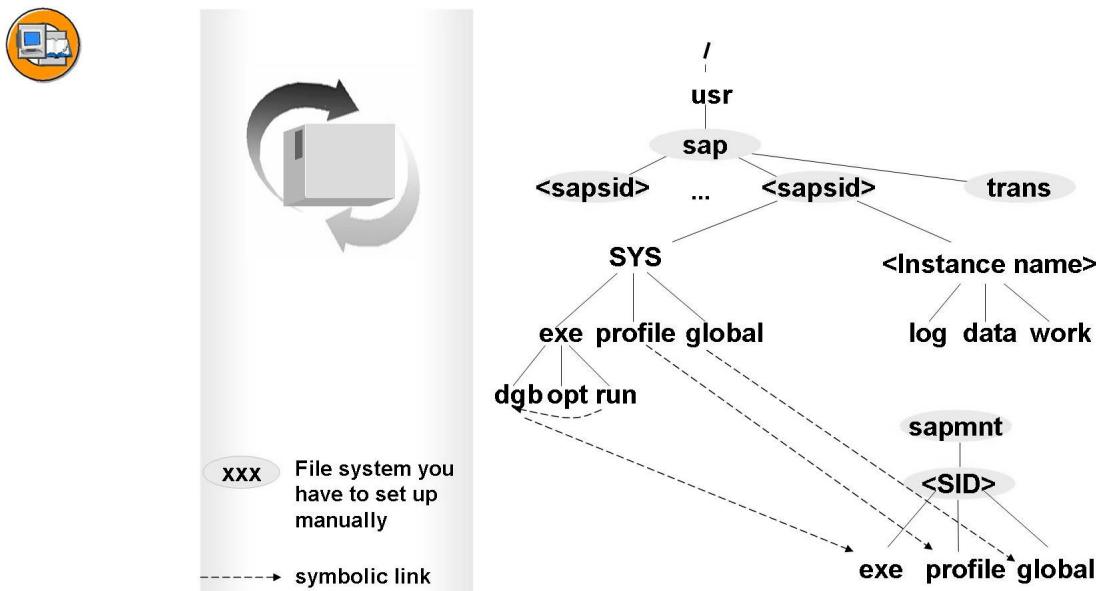


- Check the documentation, *SAP Software on UNIX: OS Dependencies*, to modify the UNIX kernel parameters and swap space.
- See following sections in the documentation:
  - "<Your OS>: Checking and Modifying the UNIX Kernel"
  - For Linux: "Linux: Checking the Linux Kernel"

**Figure 38: UNIX: Checking the UNIX Kernel and Swap Space**

For many UNIX operation system and database system combinations, you have to modify the kernel parameters. You should read the section for your UNIX operating system in the document, SAP Software on UNIX: OS Dependencies.

In addition to this document, you should carefully read SAP Note 668602 (SAP Software on UNIX: OS Dependencies 6.40).



**Figure 39: UNIX: Setting Up File Systems**

You have to set up the file systems and/or raw devices for SAP ERP Central Component and the database. You have to manually set up the file systems selected in the figure; SAPinst will do the rest during the installation process.

For the space required by different file systems, refer to your installation guide.

The processes of creating and mounting file systems and creating raw devices for SAP ERP Central Component and for different databases are described in the documentation, SAP Software on UNIX: OS Dependencies, in the <your OS>:File Systems, Raw Devices, and Swap Space section.

## Preparing for the SAPinst Installation in UNIX



1. Install Java Development Kit on every host on which you want to run SAPinst
2. Clean up the JDK \ext directory
3. Set JAVA\_HOME environment (for user root)
4. Check that the DISPLAY environment variable is set to <hostname>:0.0  
(where hostname here is your display host)

Java-based installation tool SAPinst



Figure 40: UNIX: Preparing the SAPinst Installation

Before installing SAPinst, which is the System Landscape Implementation manager, you must make some preparations.

Because SAPinst GUI is a Java-based tool, you must install JDK on all hosts on which SAPinst will run. After installing JDK, you must perform some rework.

You can find the released JDK versions in SAP Service Marketplace at <http://service.sap.com/platforms>. Choose *Product Availability Matrix* → *SAP NetWeaver* → *SAP NetWeaver 04* → *SAP NetWeaver 04* and select the *JSE Platforms* tab.

After a successful JDK installation, check the Java /ext directory to see if there are already <parser\_name>.jar files, such as xerces.jar, that already exist. The default path is <JAVA\_HOME>/JRE/lib/ext.

If you find any .jar files, do the following:

- Rename them to xerces.xxx. This is possible only if the application to which the JAR files belong is not running during the installation.



**Hint: Remember** to rename the files back to their original names after the installation procedure is complete.

### UNIX: Setting Environment Variables



- SAPinst needs the JAVA\_HOME environment variable to be set on the host(s) where SAPinst will run.
- Set the JAVA\_HOME environment variable for the root user to <JAVA\_HOME>.
- Ensure that your DISPLAY environment variable is set to <hostname>:0.0, where <hostname> is the host on which the SAPinst GUI will be displayed.
- Only for a Unicode installation:  
Add /sapmnt/<SAPSID>/profile to the library path environment variable.

Use the following commands, based on your shell, to set the environment variables:

- Bourne Shell (bsh) JAVA\_HOME=<JAVA\_HOME> export JAVA\_HOME  
DISPLAY=<hostname>:0.0 export DISPLAY
- C Shell (csh) setenv JAVA\_HOME <JAVA\_HOME>  
setenv DISPLAY <hostname>:0.0
- Korn Shell (ksh) export JAVA\_HOME=<JAVA\_HOME>  
export DISPLAY=<hostname>:0.0

Name of the library path environment variable:

- AIX: LIB\_PATH
- HP-UX: SHLIB\_PATH
- LD\_LIBRARY\_PATH (for all other UNIX operating systems)



### Preparation Checklist for UNIX

You can use the checklist at home.

## Preparation Checklist for Installation on UNIX



<input checked="" type="checkbox"/>	
	<b>Installation guide downloaded and printed</b>
	<b>SAP Notes downloaded and printed</b>
	<b>Installation guide and SAP Notes read</b>
	<b>SAP Front End available</b>
	<b>DVDs available (copied to disk / in DVD drive)</b>
	<b>OPT.: Users created</b>
	<b>kernel parameters checked / set</b>
	<b>File system setup</b>
	<b>JDK installed</b>
	<b>JAVA_HOME set</b>
	<b>DISPLAY set</b>
	<b>Java /ext directory cleaned up</b>

Figure 41: Preparation Checklist for UNIX



## Facilitated Discussion

### Discussion Questions

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the tasks included in the preparation checklist for installation on UNIX.

---



## **Lesson Summary**

You should now be able to:

- Perform the necessary preparation steps to install SAP ERP Central Component on UNIX



## Unit Summary

You should now be able to:

- Perform the general preparation steps needed to install SAP ERP Central Component
- Perform the necessary preparation steps to install SAP ERP Central Component on Windows
- Perform the necessary preparation steps to install SAP ERP Central Component on UNIX

### Related Information

SAP Service Marketplace <http://service.sap.com>:

Quick Links /platforms, /instguides





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## Test Your Knowledge

1. Before installing SAP ERP Central Component, you should ensure that the front-end software is installed on \_\_\_\_\_ in your system environment.

*Fill in the blanks to complete the sentence.*

2. Which command do you use to find out the IP address of your system?

---

---

---

3. Name at least one file system that you need to set up manually.

---

---

---



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## Answers

1. Before installing SAP ERP Central Component, you should ensure that the front-end software is installed on at least one host computer in your system environment.

**Answer:** at least one host computer

2. Which command do you use to find out the IP address of your system?

**Answer:** ping <hostname>

3. Name at least one file system that you need to set up manually.

**Answer:** These file systems need to be set up manually: /sap, /sap/trans, /sap/<SID>, /sapmnt/<SID>

# Unit 4



## Installing SAP GUI



In this unit, explain how to install the SAP GUI for Windows, the SAP GUI for Java and the installation server for the Windows GUI. Other tasks are to apply a patch for the SAP GUI for Windows and to create a Installation Server SAP GUI Package.

### Unit Overview

This unit explains how to install the user interface SAP GUI for the Windows operating system and Java.



### Unit Objectives

After completing this unit, you will be able to:

- Describe the different types of SAP GUI
- Perform a local SAP GUI for Windows installation
- Patch a local SAP GUI for Windows
- Perform a SAP GUI Installation Server installation
- Patch a SAP GUI installation Server
- Create a SAP GUI Installation package
- Perform a unattended SAP GUI installation using the SAP GUI Installation Server
- Install the SAP GUI for Java

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**Lesson: Installation of SAP GUI for Windows**

Lesson Duration: 45 Minutes

**Lesson Overview**

This lesson explains how to install and patch SAP GUI for the Windows operating system. A local SAP GUI and a SAP GUI Installation Server is installed during this lesson. The lesson also explains how to patch both types of SAP GUI installations.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Describe the different types of SAP GUI
- Perform a local SAP GUI for Windows installation
- Patch a local SAP GUI for Windows
- Perform a SAP GUI Installation Server installation
- Patch a SAP GUI installation Server
- Create a SAP GUI Installation package
- Perform a unattended SAP GUI installation using the SAP GUI Installation Server



In this lesson, explain how to install and patch the local SAP GUI. Also explain how to install and patch the SAP GUI Installation Server. The trainer performs both. Also try to show an unattended SAP GUI installation from the SAP GUI Installation Server after you created a SAP GUI Installation Package.

Note for Exercise: The exercise is to install the SAP GUI for Windows and apply a patch.

**Business Example**

A petrochemical company, ABC Limited, uses SAP to manage its data. The company now wants to install the latest version of SAP, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of company ABC, you need to install SAP ERP Central Component and install the SAP GUI on all end-user computers so that the users can access SAP ERP Central Component easily and comfortably.



### Variants of the SAP GUI

Explain the differences in the available SAP GUIs, such as network traffic and the local installation of the SAP GUI for Windows and Java.

#### Local Installation of the SAP GUI for Windows

Start the local installation of the SAP GUI for Windows. Explain the packages that you can select during the installation.

#### System Demo

See the screenshots in the course material or review the exercise.

### Variants of the SAP GUI

The use of SAP GUI is supported on many different operating systems. The operating systems support is provided by the different variants of the SAP GUI. The different types of SAP GUI are listed in the following figure

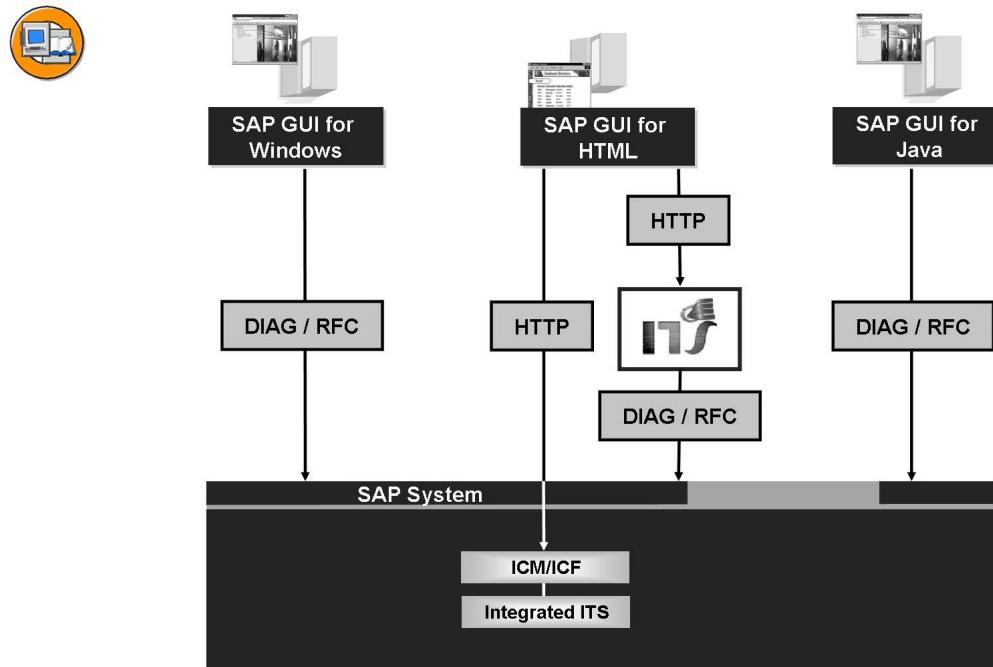


Figure 42: Variants of the SAP GUI

There are **three** classical GUI variants to access SAP systems:

- The SAP GUI for Windows
- The SAP GUI for HTML
- The SAP GUI for Java

Certain other options to access SAP systems are not covered here: portal interfaces, such as iViews, Business Explorer (BEx) to access SAP BW systems, and more.

The SAP GUI for HTML requires SAP Internet Transaction Server (SAP ITS) to provide access to an SAP system. The use and implementation of the SAP ITS is covered in other courses such as ITS170 and ADM102.

As of SAP Web Application Sever 6.40, the SAP GUI for HTML is also supported on the Integrated ITS. The integrated ITS is part of the SAP Web AS and is installed automatically. The activation and publishing of the SAP GUI for HTML is **not** part of this course.



If the customers really want to know how to activate and publish the SAP GUI for HTML on the integrated ITS you could show them. You can only show them **AFTER** the installation is finished. The following steps are needed to activate and publish:

- start transaction SE80 and in the menu select *Utilities → Setting*
  - Select the tab **Internet Transaction Server** in this tab select the tab **Publish**.
  - Select the radio button **On selected Site** and in the input field select **INTERNAL**.
  - In the main screen from SE80 select Internet Service in the first input field.
  - In the second input field type **SYSTEM** and press enter.
  - Below the text “Object Name” select **SYSTEM** and press the right mouse button and follow the path *Publish → Complete Service*. The **SYSTEM** service is being published now.
  - In the second input field type **WEBGUI** and press enter.
  - Below the text “Object Name” select **WEBGUI** and press the right mouse button and follow the path *Publish → Complete Service*. The **WEBGUI** service is being published now.
  - Start transaction SICF. You need to activate two services.
  - First follow the path *default\_host → sap → public → bc → its → mimes*
  - Select mimes and press the right mouse button and select Activate Service.
  - In the popup window press the Yes button with the icon.
  - Second follow the path *default\_host → sap → bc → gui → sap → its → webgui* also activate this service.
  - The SAP GUI for HTML can now be started using the following URL:  
[http://twdfXXXX.wdf.sap.corp:8000/sap/bc/gui/sap/its/webgui/!](http://twdfXXXX.wdf.sap.corp:8000/sap/bc/gui/sap/its/webgui/)
  - Login with a SAP user account and show some transactions. SM04, SM50 and SM51 have been tested and work.
- 

One common aspect of the SAP GUI for Windows and the SAP GUI for Java is that both GUIs use the DIAG SAP protocol to communicate with SAP ERP Central Component (SAP ECC) (more specifically, with one instance of an SAP system). This protocol requires a very small bandwidth, reducing network load.

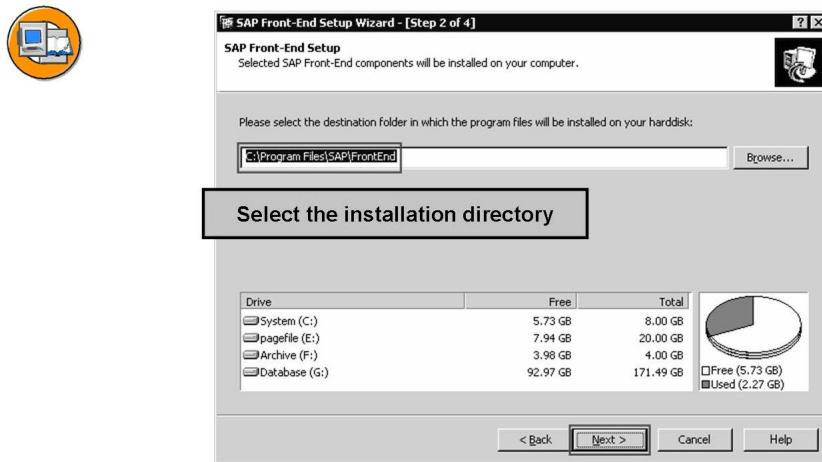
You will find more SAP GUI-related information on the SAP Service Marketplace (<http://service.sap.com/ui>).

## Local Installation of the SAP GUI for Windows



Figure 43: Local Installation of the SAP GUI for Windows (1/3)

On the *Welcome* screen, select *Next*.



Drive	Free	Total
System (C:)	5.73 GB	8.00 GB
pagefile (E:)	7.94 GB	20.00 GB
Archive (F:)	3.98 GB	4.00 GB
Database (G:)	92.97 GB	171.49 GB



< Back    Next >    Cancel    Help

Figure 44: Local Installation of the SAP GUI for Windows (2/3)

Select the *Installation directory* for the local installation of the SAP GUI.

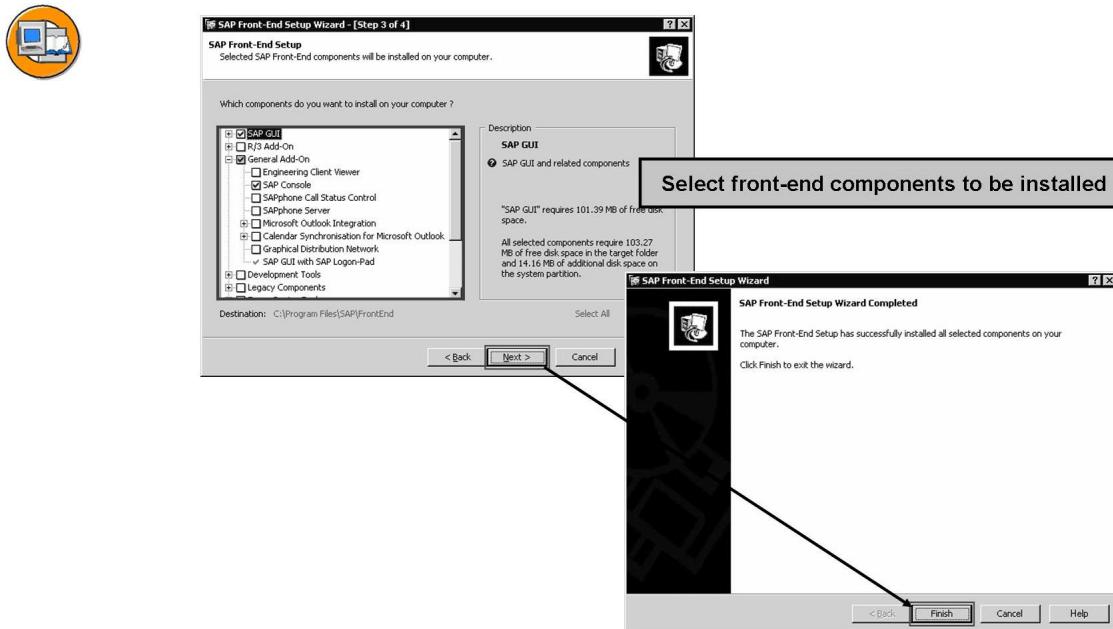


Figure 45: Local Installation of the SAP GUI for Windows (3/3)

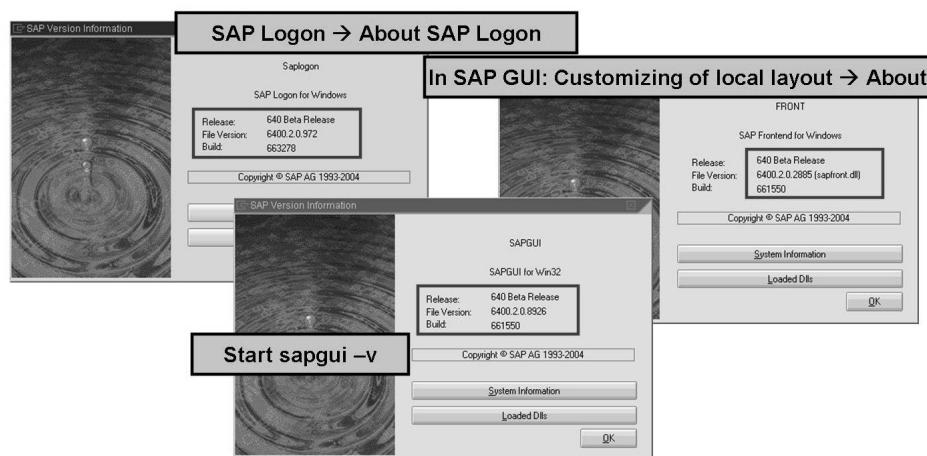
After you select the components to be installed, the installation runs and closes with the second screen.

### Patching the local SAP GUI



#### Patching the SAP GUI

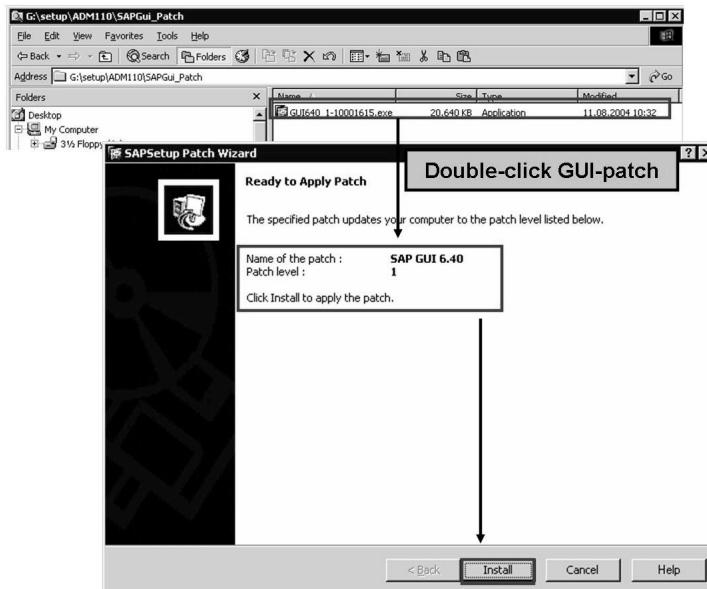
Follow the description given in the lesson or refer to the exercise.



**Figure 46: Patching the SAP GUI (1/4)**

In the screenshots you can see the versions for primary SAP GUI components: SAPLogon.exe, SAPGUI.exe, and Front.exe.

The version of the SAP GUI in the screenshot is SAP GUI 6.40 Beta release. This SAP GUI can be patched with a later version available on SAP Service Marketplace.



**Figure 47: Patching the SAP GUI (2/4)**

Start the patch application by choosing the patch executable GUI640\_1-10001615.exe found in the directory G:\setup\ADM110\SAPGu\_Patch\.



**Figure 48: Patching the SAP GUI (3/4)**

After applying the patch, you have to restart your front-end computer because some essential DLLs were exchanged.

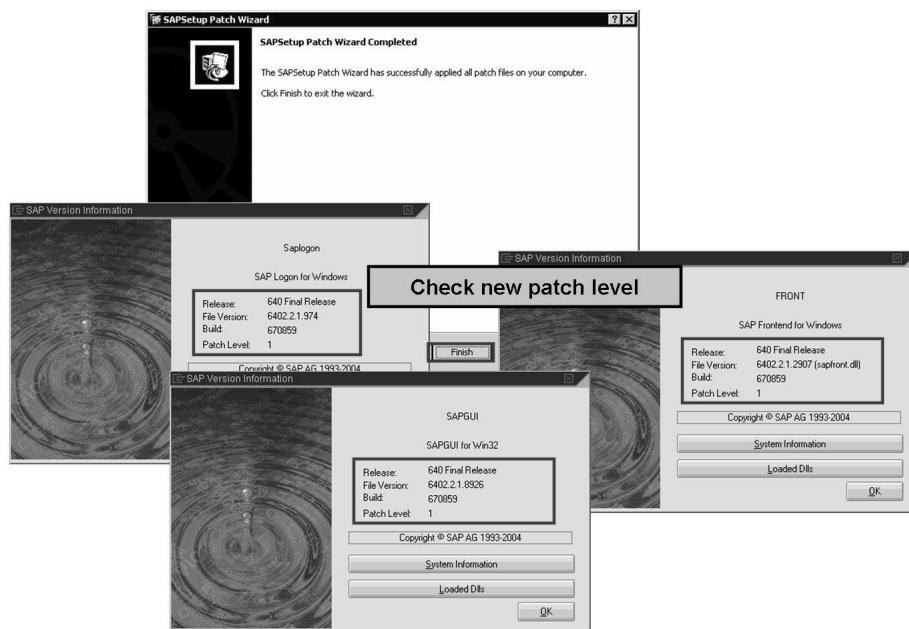


Figure 49: Patching the SAP GUI (4/4)

After the patch is applied, the new patch level of the components shown in the figure is SAP GUI 6.40 Final Release patch level 1.

## Installing the SAP GUI Installation Server



### Installing an SAP GUI Installation Server

Start the installation of an SAP GUI installation server if you know what you are doing; otherwise, refer to this part as "theory only". For details, read the pdf document mentioned in the course material.



**Caution:** The installation of an installation server in a productive environment needs more authorization than available in the training environment – as a result, no productive-like setup is possible. Using the user install for all user-requests is not a working but only a demonstration solution. In a real environment, the instructions on the screens as well as the SAP Front-end Installation Guide have to be read very carefully.

### System Demo

See screenshots in course material.

When installing SAP GUI on several workstations, it is recommended to use a SAP GUI Installation Server. The server-based installation is flexible and makes maintenance easier, for example, when patches have to be applied.

The following screenshots explain how to setup a SAP GUI Installation Server. It is recommended that you read the instructions in the Installation Guide SAP Front End 6.40, which can be found on the Presentation DVD \PRES\_640C2\_1\DOCU\PC640\_EN.pdf, before starting the installation.

### Follow these steps to install the SAP GUI Installation server

On the presentation DVD, start admsetup.exe in \PRES\_640C2\_1\GUI\WINDOWS\WIN32G\setup directory.

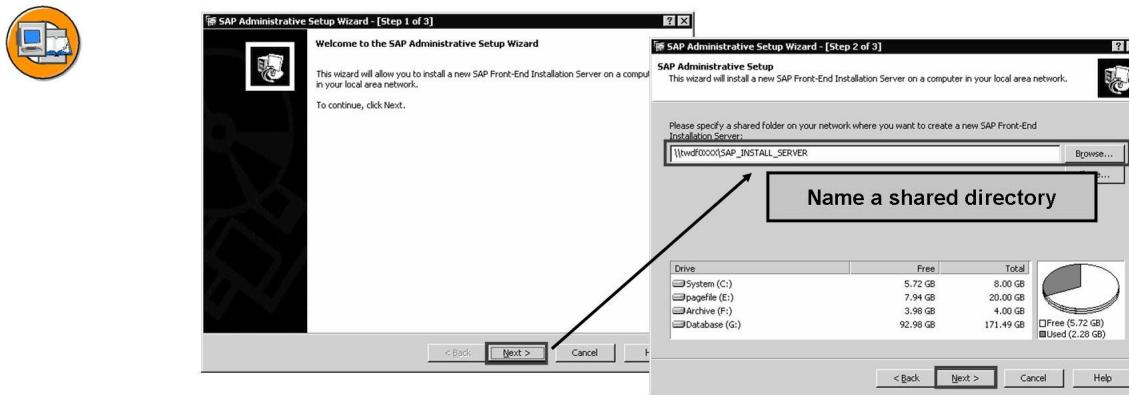
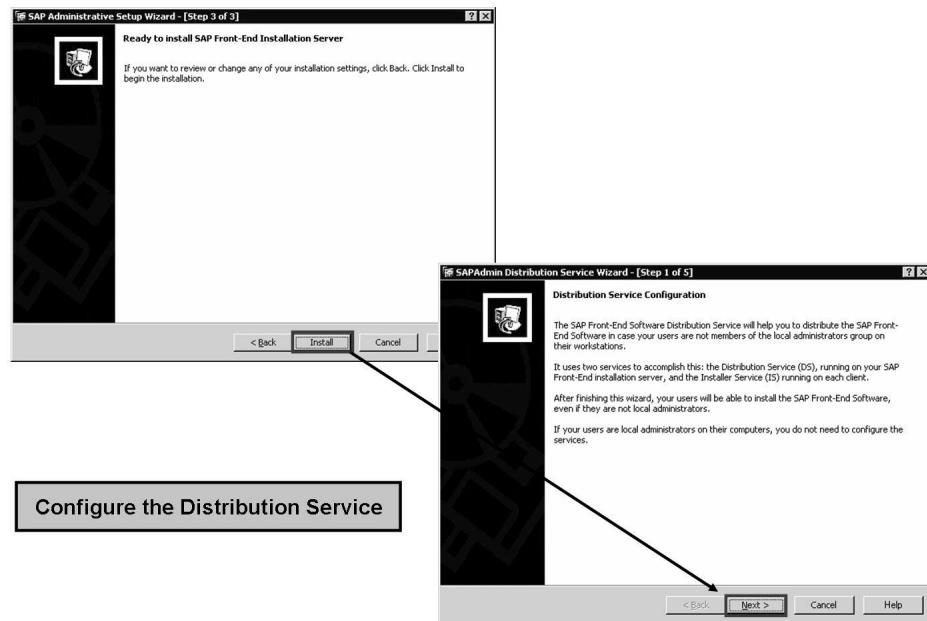
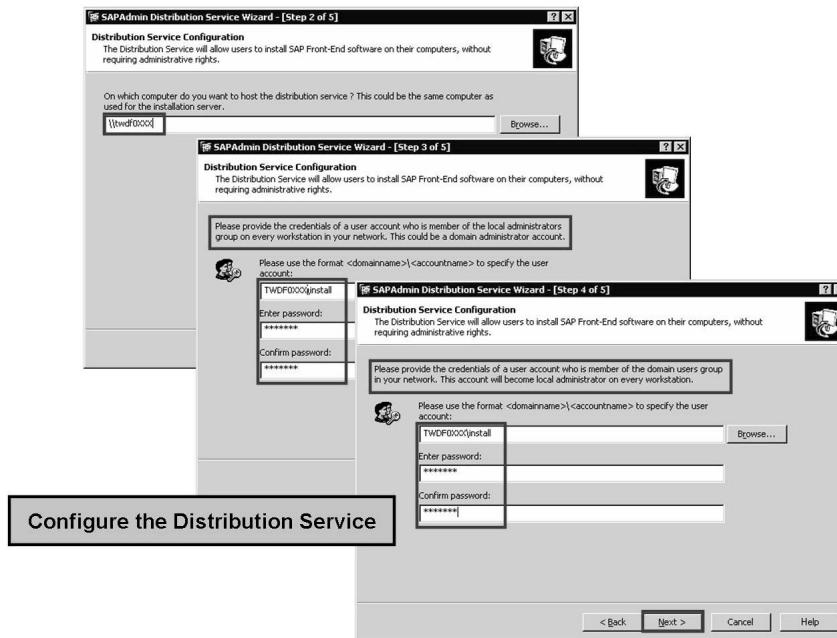


Figure 50: Installing an SAP GUI Installation Server (1/4))



**Figure 51: Installing an SAP GUI Installation Server (2/4)**

You now need to configure the **Distribution Service**.



**Figure 52: Installing an SAP GUI Installation Server (3/4)**

This Distribution Service requires users and their passwords to be used during the remote installation.

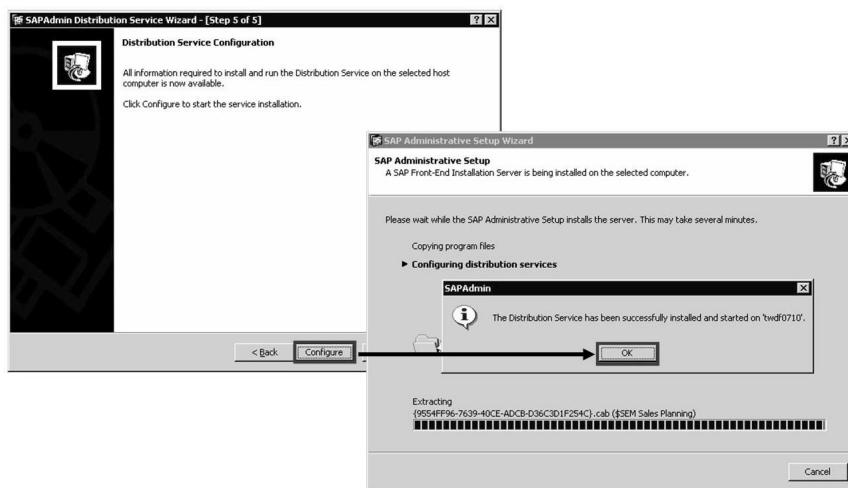


Figure 53: Installing an SAP GUI Installation Server (4/4)

### Patching the SAP GUI Installation Server

After the SAP GUI Installation Server has been installed, it can be patched using the standard SAPGUI patches found on the SAP Service Marketplace (<http://service.sap.com/patches>). The following figures will explain the patching of the SAP GUI Installation Server.

Start the SAPAdmin.exe program located in the setup directory of your Installation Server.



Figure 54: Patching the SAP GUI Installation Server (1/2)

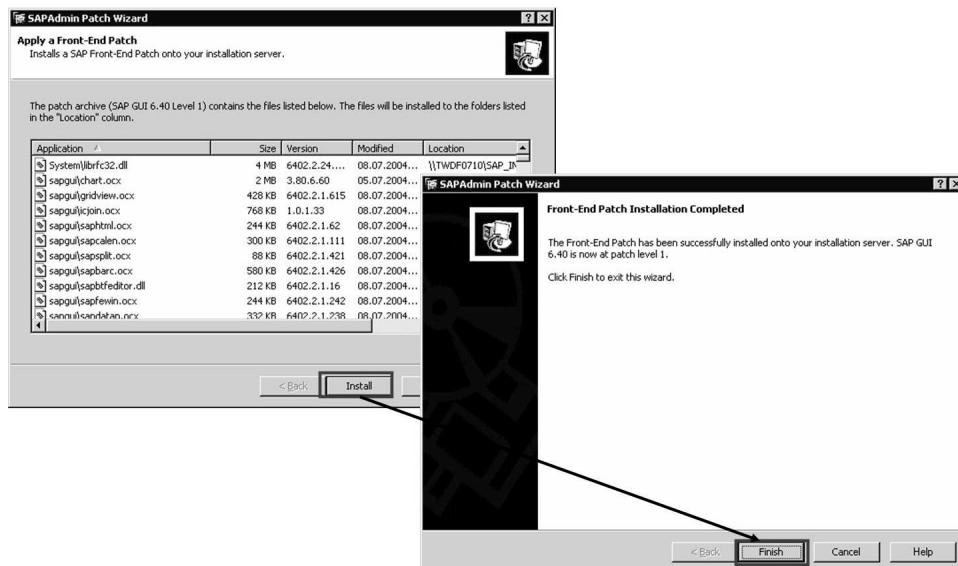


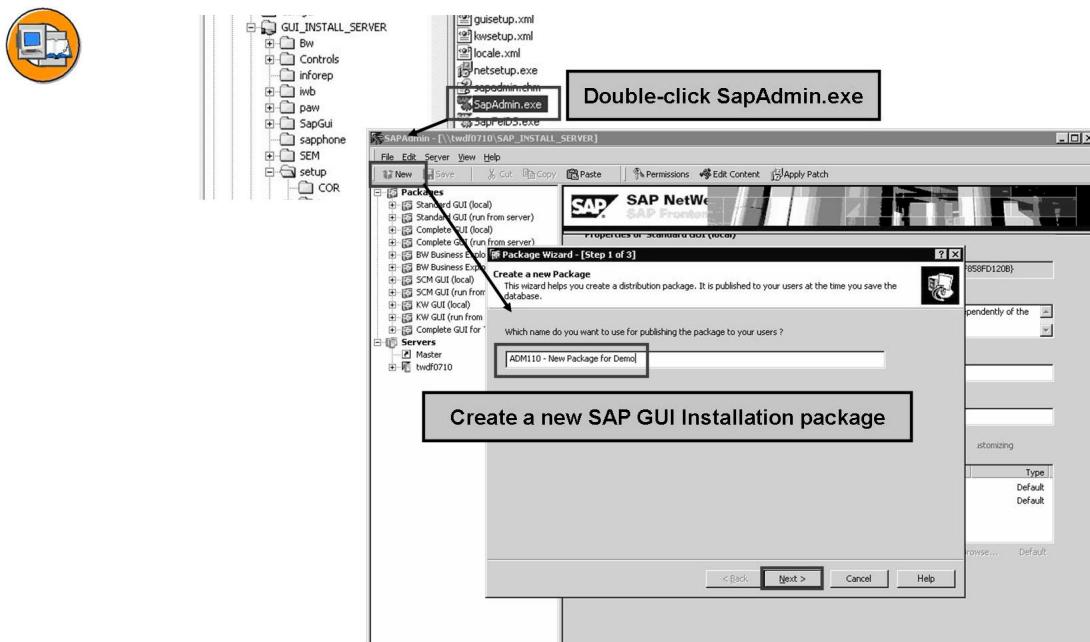
Figure 55: Patching the SAP GUI Installation Server (2/2)

After you have selected the *Install* button, the patch runs and copies all the required files to the SAP GUI Installation Server.

When you now install a SAP GUI Installation Package on a PC where SAP GUI is already installed, it will only install the patched files.

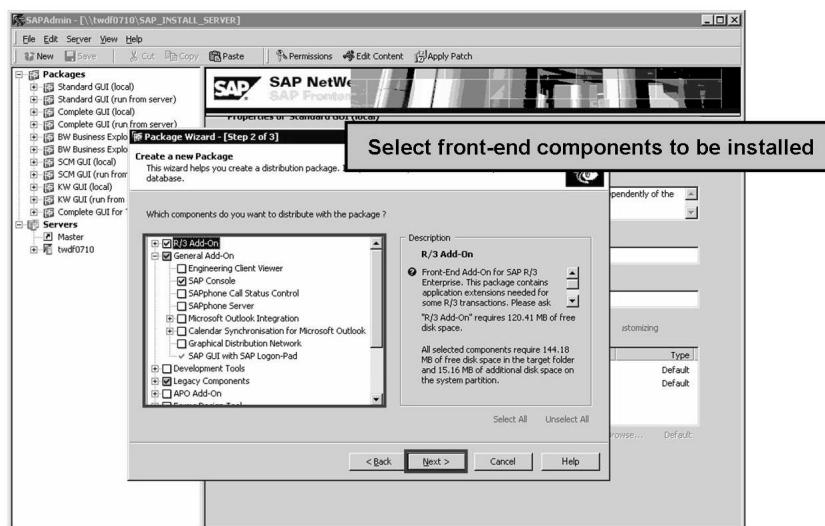
## Creating a SAP GUI Installation Package

After installation and patching of the SAP GUI Installation Server, you can start to define new SAP GUI Installation packages. Afterwards these SAP GUI Installation Packages can be distributed to the workstations.



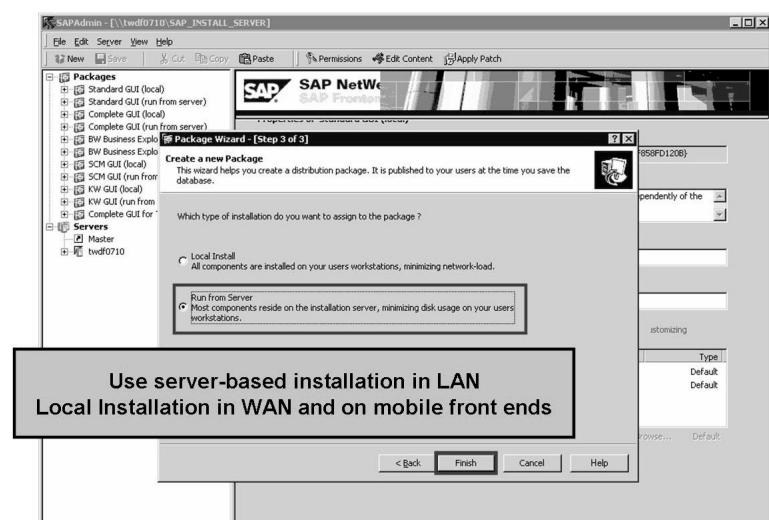
**Figure 56: Creating a SAP GUI Installation Package (1/3)**

Use SAPAdmin.exe to create new installation packages for the SAP GUI for Windows.



**Figure 57: Creating a SAP GUI Installation Package (2/3)**

You need to define the components to be included in the new package.



**Figure 58: Creating a SAP GUI Installation Package (3/3)**

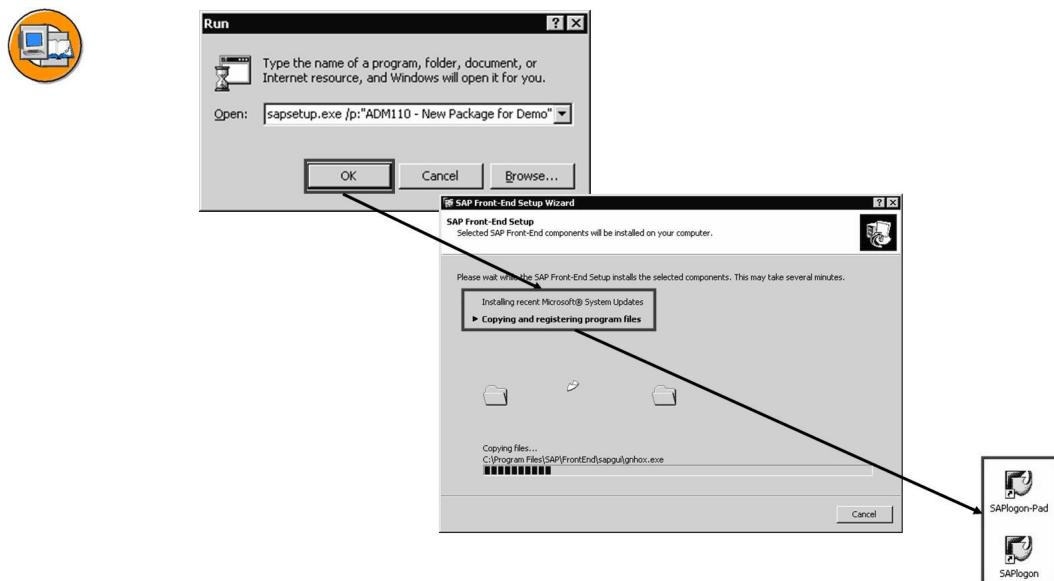
For installation packages, you have two options to define where the installation should reside:

- The local installation puts all necessary software on the front end, leaving a footprint of up to 200 MB. In this case, the amount of work to update the local installations is higher than for the second option.
- The server-based installation leaves many files on the server and places only essential files on front-end computers. Some of the files are a few MB in size. During the startup of the SAP GUI, the remaining files are transferred from the server to the front end via the network. Because the amount of data transferred is quite high, this option should be used only in LAN environments, while the first option is preferred in WAN environments.

You can update the installation server in a similar way to a stand-alone SAP GUI. The same file is used.

## Installing a SAP GUI Installation Package

The just created SAP GUI Installation Package can now be used to perform an unattended installation.



**Figure 59: Installing a SAP GUI Installation Package**

You can start the unattended installation of a SAP GUI Installation Package by running the following command:

```
\<server>\<shared folder>\setup\sapsetup.exe /p: "<package name>"
```

fro example, \\twdfXXXX\GUI\_INSTALL\_SERVER\setup\sapsetup.exe /p:  
“ADM110 - New Package for Demo”

You can carry out unattended installations and automatic patch deployment on the client. To do this, place the appropriate sapsetup.exe command line in the logon script of the client. The logon script is a program that is executed when you log on to your workstation.



## Exercise 2: Install and Update SAP GUI for Windows

Exercise Duration: 20 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install a local SAP GUI for Windows
- Patch a local SAP GUI for Windows

### Business Example

As the system administrator of ABC, which is a petrochemical company, you have to install the latest version of SAP, SAP ERP Central Component. You need to install the SAP GUI on end-user computers. You also need to update the SAP GUI with the latest patch.

#### Task 1:

Install a local SAP GUI for Windows on the server you are using for the training, such as twdf0###.

1. Start the setup.exe program from the PRES\_640C2\_1\GUI\Windows\Win32 Presentation CD folder and use the default installation directory.
2. Choose some SAP GUI components of your choice to be installed. The components should contain at least the SAP GUI with SAP Logon. Finish the installation.

#### Task 2:

Raise the patch level of your locally installed SAP GUI for Windows.

1. Check the current patch level of your SAP GUI components.
2. You find the patch to be applied at the following location:

G:\SETUP\ADM110\SAP\_GUI\_Patch

Proceed as described in this training material on the Patching the SAP GUI (2/4) and Patching the SAP GUI (3/4) pages.

3. Check the new patch level of your SAP GUI components.

## Solution 2: Install and Update SAP GUI for Windows

### Task 1:

Install a local SAP GUI for Windows on the server you are using for the training, such as twdf0###.

1. Start the setup.exe program from the PRES\_640C2\_1\GUI\Windows\Win32 Presentation CD folder and use the default installation directory.
    - a) Start the setup.exe program from the PRES\_640C2\_1\GUI\Windows\Win32 Presentation CD folder and use the default installation directory.  
Start the setup.exe program from G:\SETUP\presentation\PRES\_640C2\_1\GUI\Windows\Win32.
  2. Choose some SAP GUI components of your choice to be installed. The components should contain at least the SAP GUI with SAP Logon. Finish the installation.
    - a) Choose some SAP GUI components of your choice to be installed. The components should contain at least the SAP GUI with SAP Logon. Finish the installation.
- Follow the exercise description.

### Task 2:

Raise the patch level of your locally installed SAP GUI for Windows.

1. Check the current patch level of your SAP GUI components.
  - a) Check the current patch level of your SAP GUI components.  
Follow the directions given for Patching the SAP GUI in this lesson.
2. You find the patch to be applied at the following location:  
G:\SETUP\ADM110\SAP\_GUI\_Patch

*Continued on next page*

Proceed as described in this training material on the Patching the SAP GUI (2/4) and Patching the SAP GUI (3/4) pages.

- a) You find the patch to be applied at the following location:  
G:\SETUP\ADM110\SAP\_GUI\_Patch. Proceed as described in the Patching the SAP GUI lesson.  
Follow the exercise description.
3. Check the new patch level of your SAP GUI components.
  - a) Check the new patch level of your SAP GUI components.  
See the first step of this task.



## Lesson Summary

You should now be able to:

- Describe the different types of SAP GUI
- Perform a local SAP GUI for Windows installation
- Patch a local SAP GUI for Windows
- Perform a SAP GUI Installation Server installation
- Patch a SAP GUI installation Server
- Create a SAP GUI Installation package
- Perform a unattended SAP GUI installation using the SAP GUI Installation Server

## Lesson: Installation of SAP GUI for Java



Lesson Duration: 25 Minutes

### Lesson Overview

This lesson explains how to install the SAP GUI for Java.



### Lesson Objectives

After completing this lesson, you will be able to:

- Install the SAP GUI for Java



In this lesson, explain how to install the SAP GUI for Java.

#### Note for Exercise:

Installing the SAP GUI for Java is an optional exercise.

### Business Example

ABC Limited is a petrochemical company that uses SAP to manage its data. The company now wants to install the latest version of the SAP system, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component. You need to install the SAP GUI for end users who use Java to communicate with the SAP system.



#### Installing the SAP GUI for Java

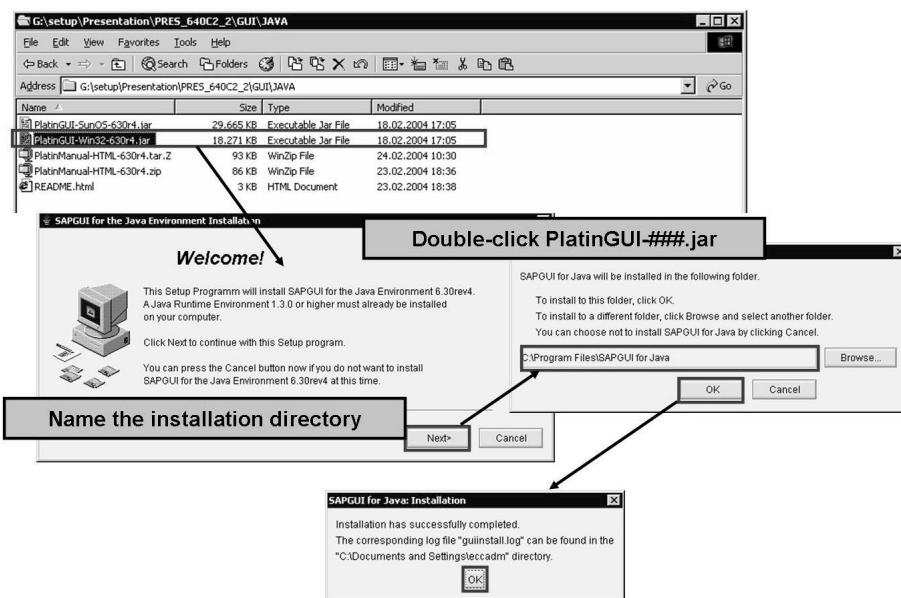
Follow the description in this lesson and read the manual mentioned in the course material.

### Steps to Install the SAP GUI for Java

The SAP GUI for Java requires that a Java Runtime Environment (JRE) is installed. For more information on the Java JRE version, please read the documentation shipped with the SAP GUI for Java.



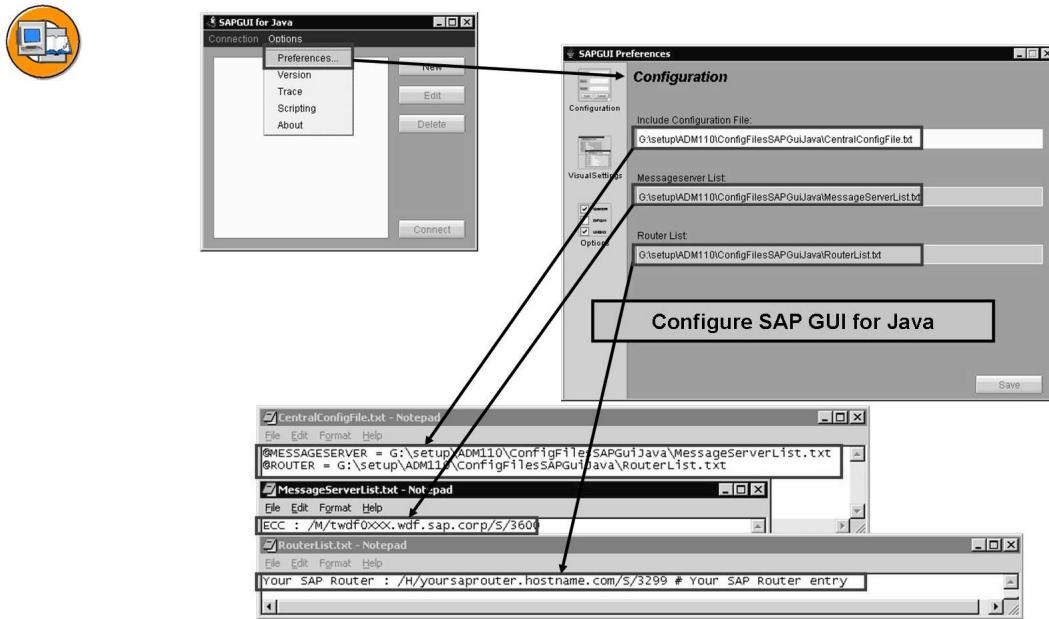
**Hint:** In Unit 3: Lesson: Further Preparation for Installation on Windows the Java SDK is installed and this Java SDK also contains a Java JRE.



**Figure 60: Installing the SAP GUI for Java**

You can download the latest version of the SAP GUI for Java from the SAP Service Marketplace (<http://service.sap.com/patches>).

Start the installation by selecting the downloaded file and proceed as shown in the previous figure.



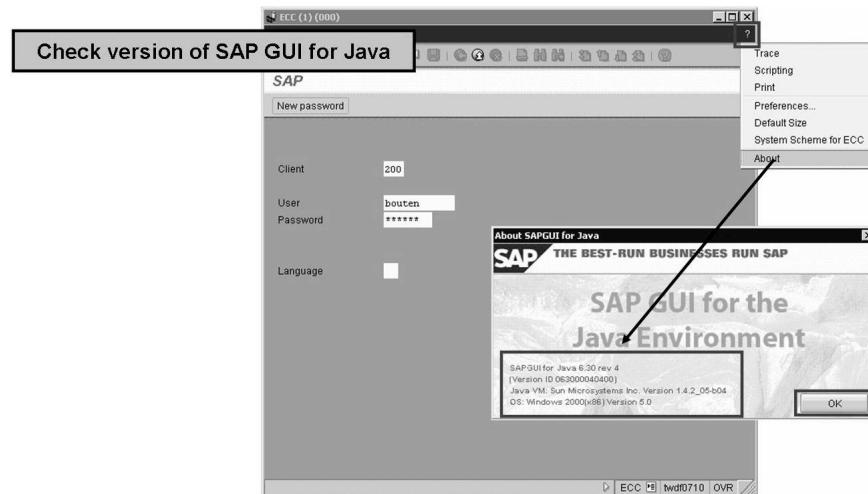
**Figure 61: Configuration of the SAP GUI for Java**

You can find the configuration details of the SAP GUI for Java in the documentation. The documentation is installed together with the SAP GUI and can be found in the folder

C:\Program Files\SAPGUI for Java\6.30rev4\doc\manual.html.



With the ready-to-use configuration files for the exercises you only have to give the name and path of the “Configuration File”. The other files are automatically entered, because the config file refers to them.



**Figure 62: Installing the SAP GUI for Java (3/3)**

To obtain information about the version of the SAP GUI for Java in use, select the question mark (?) icon in the upper-right corner of the GUI.



## Exercise 3: Install and Configure SAP GUI for Java

Exercise Duration: 10 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install the SAP GUI for Java

### Business Example

You are the system administrator of ABC, a petrochemical company. You have been given the task of installing the latest version of SAP, SAP ERP Central Component (SAP ECC). You need to install the SAP GUI for end users who use Java to communicate with the SAP system.

### Task:

Optional: Install and configure the SAP GUI for Java on the server you are using for the training, such as twdf0###.

1. Install the SAP GUI for the Java environment. You find the installation files at the following location:

G:\SETUP\Presentation\RES\_640C2\_2\GUI\JAVA

Proceed as described in the training material.

2. Configure the SAP GUI for Java with the same configuration files as described in the lesson. You have to adapt the content of the configuration files to fit your system environment (<SID>, <server>).

## Solution 3: Install and Configure SAP GUI for Java

### Task:

Optional: Install and configure the SAP GUI for Java on the server you are using for the training, such as twdf0###.

1. Install the SAP GUI for the Java environment. You find the installation files at the following location:

G:\SETUP\Presentation\PRES\_640C2\_2\GUI\JAVA

Proceed as described in the training material.

- a) Install the SAP GUI for the Java environment. You find the installation files at the following location:

G:\SETUP\Presentation\PRES\_640C2\_2\GUI\JAVA.

Proceed as described in the training material.

Follow the exercise description.

2. Configure the SAP GUI for Java with the same configuration files as described in the lesson. You have to adapt the content of the configuration files to fit your system environment (<SID>, <server>).

- a) Configure the SAP GUI for Java with the same configuration files as described in the Installing SAP GUI for Java lesson. You have to adapt the content of the configuration files to fit your system environment (<SID>, <server>). You can find the files in the directory G:\SETUP\ADM110\ConfigFilesSAPGuiJava.

Follow the exercise description.



## Lesson Summary

You should now be able to:

- Install the SAP GUI for Java



## **Unit Summary**

You should now be able to:

- Describe the different types of SAP GUI
- Perform a local SAP GUI for Windows installation
- Patch a local SAP GUI for Windows
- Perform a SAP GUI Installation Server installation
- Patch a SAP GUI installation Server
- Create a SAP GUI Installation package
- Perform a unattended SAP GUI installation using the SAP GUI Installation Server
- Install the SAP GUI for Java

### **Related Information**

- SAP Service Marketplace, <http://service.sap.com/patches> and <http://service.sap.com/ui>
- Presentation DVD, folder \press\_640C2\_1\DOCU
- SAP notes as listed in this unit



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## Test Your Knowledge

1. To set up installation packages, start the \_\_\_\_\_ program.  
*Fill in the blanks to complete the sentence.*
  
2. Which of the following is not a classical GUI variant to access the SAP system?  
*Choose the correct answer(s).*
  - A Business Explorer
  - B SAP GUI for Windows
  - C SAP GUI for HTML
  - D SAP GUI for Java
  
3. To obtain information about the version of the SAP GUI for Java in use, select the \_\_\_\_\_ icon in the upper-right corner of the GUI.  
*Fill in the blanks to complete the sentence.*



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## Answers

1. To set up installation packages, start the SAPAdmin.exe program.

**Answer:** SAPAdmin.exe

2. Which of the following is not a classical GUI variant to access the SAP system?

**Answer:** A

You use Business Explore (BEx) to access SAP BW systems.

3. To obtain information about the version of the SAP GUI for Java in use, select the question mark icon in the upper-right corner of the GUI.

**Answer:** question mark

# Unit 5



## Installing SAP ERP Central Component



The aim of this unit is to install an SAP system using the SAPinst installation tool. You start explaining how SAPinst works and then proceed with the installation of the central instance, the database instance, the dialog instance and the J2EE Add-in for the central instance. This unit has many demos. You have to decide which of the optional demos you will run. The optional demos are the installation of the J2EE Add-in for the dialog instance and the gateway instance. The added knowledge gain with the installation of a J2EE Add-in for the dialog instance is very low because the procedure is the same as the J2EE Add-in installation for the central instance. Normally, there is not enough time to show the installation of the J2EE Add-in for the dialog instance or the installation of a gateway instance.

### Unit Overview

This unit describes how SAPinst works and how to install the Oracle Database software for a SAP System. This unit also shows how to install a SAP central instance, database instance, dialog instance, and SAP J2EE Add-in for the central instance.



### Unit Objectives

After completing this unit, you will be able to:

- Explain the SAPinst architecture
- Explain the log and XML files used by SAPinst
- Install SAPinst
- Explain SAPinst GUI Handling
- Install the Oracle Database software according to the SAP specifications
- Apply an Oracle Patch using the Universal Installer
- Apply a Oracle interim patch using the OPatch tool
- Install a central instance
- Install the database instance

- Install a ABAP Dialog Instance
- Install SAP Web AS Java Central Instance
- Install a SAP Web AS Java Dialog Instance
- Install a stand-alone SAP Gateway instance

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## Lesson: Introducing SAPinst



Lesson Duration: 10 Minutes

### Lesson Overview

This lesson describes how to install and use SAPinst. Some additional information on how SAPinst works is also provided.



### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the SAPinst architecture
- Explain the log and XML files used by SAPinst
- Install SAPinst
- Explain SAPinst GUI Handling



Please treat this lesson as “nice to know” material. Don’t spend too much time on this lesson.

### Business Example

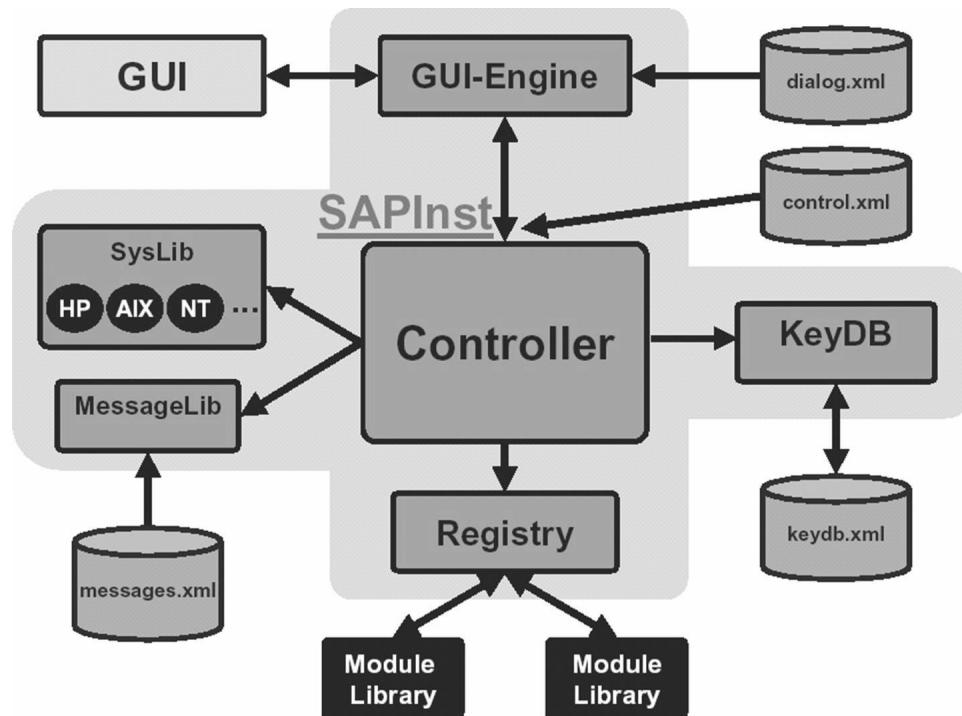
ABC Limited, a petrochemical company, uses SAP to manage its data. The company plans to install the latest version of SAP, SAP ERP Core Component, to use the functions delivered with the extension set of SAP ERP Core Component. As the system administrator of ABC, you would like to know some more details on SAPinst.

### Overview of SAPinst architecture

The SAPinst tool consists of an administrative framework, as well as functional components that provide the actual installation functionality.

The SAPinst framework, also known as installation runtime, consists of several subsystems that provide specific services to the installation process, such as showing dialogs, saving data that is collected during an installation, executing installation tasks in the order specified by the installation developer and many more. These services can be configured separately for every installation by defining XML input files.

The following figure provides an overview of the SAPinst subsystems and the way they interact during an installation.



**Figure 63: The SAPinst Subsystems**

### Services and Subsystems of the SAPinst Framework

The following are the main subsystems relevant for the installation process:

- **Controller:** The Controller is responsible for the overall execution of an installation. From the perspective of the installation development, installation components are the main input for the Controller. The components encapsulate the real doing of an Controller Module Library SAPinst Registry installation. They are defined in XML.
- **KeyDB:** The KeyDB provides a persistency mechanism. The KeyDB is configured using XML files. The XML files contain table definitions. Installation steps can access these tables during an installation using the public interface of the KeyDB.

All installation parameters (also called keys) are stored in the KeyDB, a database-like storage mechanism provided by SAPinst. When SAPinst is started, the keys are read from a set of XML files. Keys that have changed are written to the XML files when an installation step or a dialog has successfully completed.

- **GUI Engine:** The GUI Engine is the dialog processing unit of SAPinst. It supports showing dialogs in an installation, connecting dialog input fields to the persistency layer (KeyDB), and checking user input by validation functions. It also handles communication with the SAPinst Java GUI. The dialogs of the installation are also defined in XML.

The GUI Engine is responsible for those tasks that refer to managing a TCP/IP connection to the SAPinst GUI, showing dialogs and other messages as well as processing user input and delivering this input to other SAPinst subsystems.

- **MessageLib:** The MessageLib supports logging and tracing during an installation. The messages that are printed during an installation are defined in an XML file.

The MessageLib is the SAPinst mechanism for logging any kind of information regarding installation progress and program flow. An installation module creates a logbook as the source for its messages, which can be filtered and enhanced in many ways and which are finally written to a file or to the screen.

Messages can either be log or trace messages. Log messages of the type info, warning or error document the installation activities, whereas trace messages help the developer to track programming errors.

- **SysLib:** The SysLib encapsulates services in a platform-independent way that depends on the operating system, on which an installation runs. Code for creating a directory, which has been written once for an installation, can be used afterwards on all operating systems, for example.

To make an installation portable from one operating system platform to another, the installation must not directly call any API functions of the operating system. However, it must interact with the operating system. Therefore, a library is needed that provides access to operating system functionality in a portable way. It must encapsulate and hide the operating system specific API calls. This library is the SysLib. It provides the same C++ interface on every platform and can be used from within C++ code, that is by other parts of the framework and by installation modules.

- **Registry:** The Registry supports loading dynamic libraries at runtime. You can code installation-specific services using the C++ programming language and compile it into dynamic libraries.

## SAPinst output files

For release 6.20 and higher, all the trace information is logged in the sapinst.log, sapinst\_dev.log, and instgui.log files. The main SAPinst output files contain the following information:



- sapinst.log - records installation progress
- sapinst\_dev.log - records all messages (progress and error) of every installation step in detail
- instgui.log - records all SAPinst GUI messages

The log files sapinst.log and sapinst\_dev.log can be found in the current installation directory. The log file instgui.log is written on the SAPinst GUI host.

Additional log files might be written during the installation process. The additional logs are referenced in sapinst.log.

The sapinst.log can also be viewed during the installation or after an error has occurred by pressing the *Log* button.

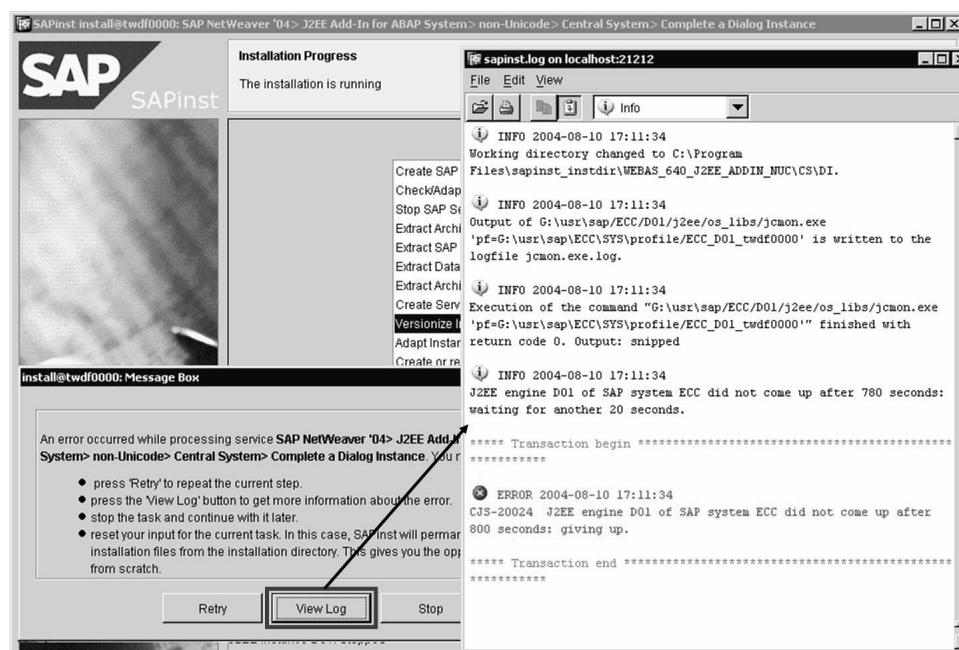


Figure 64: SAPinst Error Log

### SAPinst - XML files

SAPinst is controlled by XML files. The main XML files are:

- dialog.xml - Contains all dialogs used in the installation
- keydb.xml - SAPinst records the installation progress and user input in the keydb.xml file
- messages.xml - Contains all messages used in the installation
- control.xml - Contains the component definition used by SAPinst
- packages.xml - For software package administration

## Starting SAPinst

The following procedure starts SAPinst (Server and GUI) for Windows on a single host:

- Log on to your host as a user who is a member of the local administration group.
- Insert the SAP Master DVD in your DVD drive or mount it locally.
- Start SAPinst from the SAP Master DVD. Double-click sapinst.exe from in the directory <DVD drive>:\IM<x>\SAPINST\NT\I386

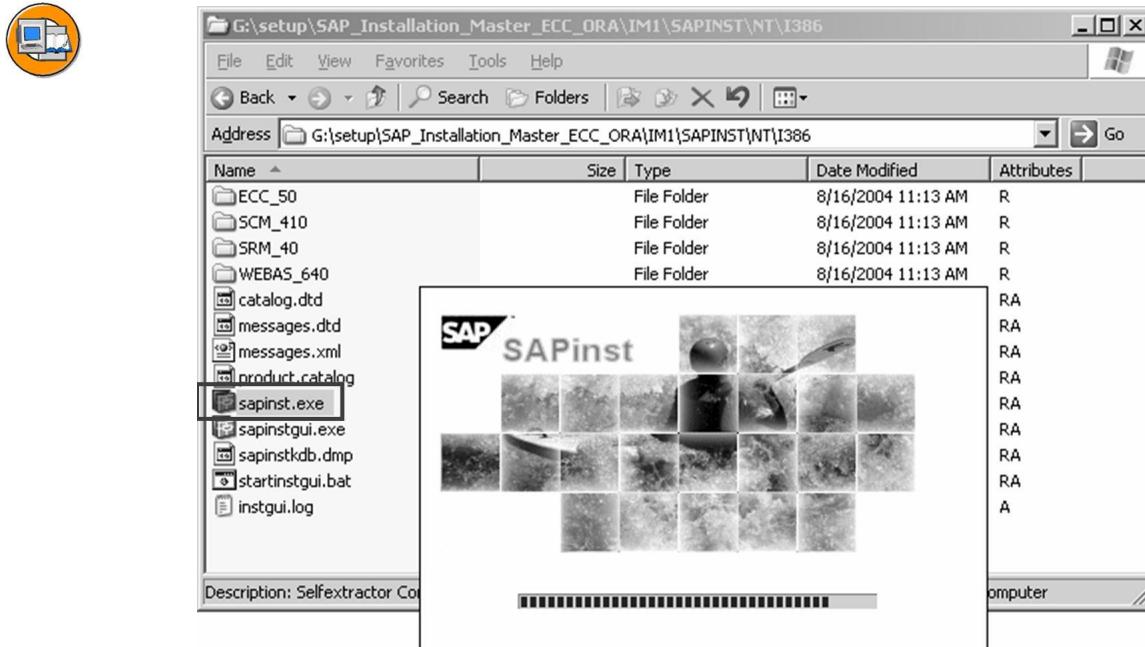
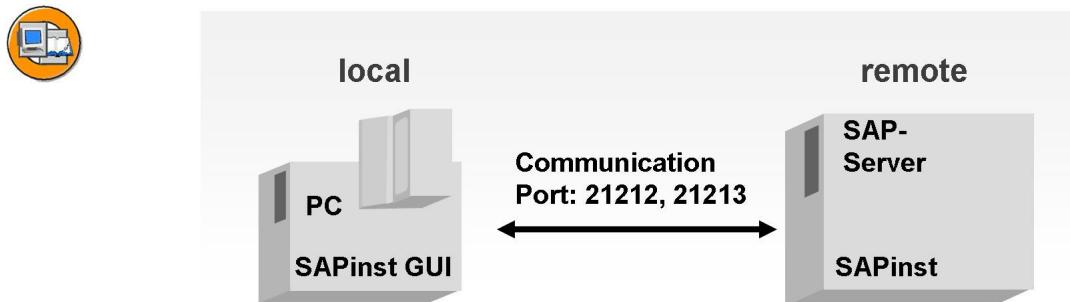


Figure 65: Start sapinst.exe

SAPinst normally creates the installation directory sapinst\_instdir directly below the Program Files directory.

### Remote Installation with SAPinst

SAPinst can also be used 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).



**Figure 66: Remote Installation with SAPinst**

Prerequisites to perform a remote installation with SAPinst are:

- Both computers are on the same LAN and can ping each other.
- SAPinst Server uses the ports 21212 and 21213 to communicate with SAPinst GUI. If one of these ports is used by another service, SAPinst aborts.

#### Starting SAPinst on the Remote Host

Start SAPinst on the remote host using the following procedure:

- Log on to your host as a user who is a member of the local administration group.
- Insert the SAP Master DVD in your DVD drive or mount it locally.
- Enter the following commands from the Windows command prompt:  
cd <DVD drive>:\IM<x>\SAPINST\NT\I386  
sapinst.exe SAPINST\_START\_GUI=false

SAPinst now starts and waits for the connection to the SAPinst GUI. You will see the following at the command prompt:

```
guiengine: no GUI connected; waiting for a connection on
host <hostname>, port <port_number> to continue with
the installation
```

If SAPinst Server fails because the default ports are in use by another service then start SAPinst with the following command line option:

```
sapinst.exe SAPINST_START_GUI=false SAPINST_DIALOG_PORT=<free port
number>
```

### Starting SAPinst GUI on the Local Host

Use this procedure to run SAPinst GUI on the local host when you want to run SAPinst as a remote installation. The local host is the host where you want to control the installation with the SAPinst GUI.

- Log on to your local Windows host.
- Insert the SAP Master DVD in your DVD drive or mount it locally.
- Enter the following commands from the Windows command prompt: cd <DVD drive>\IM<x>\SAPINST\NTI386  
startinstgui.bat

SAPinst GUI now starts and the SAP Installation GUI Connection dialog appears.

- Enter the host name of the Installation Host and the same Port as SAPinst uses on the remote host and choose *OK*.

SAPinst GUI now connects to the SAPinst server and the first dialog of the installation appears.

Prerequisites to perform a remote installation with SAPinst:

- Both computers are on a LAN and can ping each other.

### SAPinst GUI Handling

When using the SAPinst GUI, the following functions are available on the different SAPinst GUI dialogs (input screens, installation progress screen, message boxes):

Function	Description
<i>Back</i>	Displays the previous dialog for editing.
<i>Next</i>	Displays the next dialog for editing.
<i>Cancel</i>	Cancels the installation with the following options: <ul style="list-style-type: none"><li>• Stop – Stops the installation without further changing the installation files. You can continue the installation later from this point.</li><li>• Reset – Resets all installation input files. All files in the installation directory are removed from the system and no log files are saved. You must restart the installation from the beginning.</li></ul>

<i>Log Off</i>	Cancels the connection to the SAPinst GUI only. The SAPinst server keeps on running.
<i>View Log</i>	Displays the content of the sapinst.log file during the installation.
<i>Retry</i>	Performs the installation step again (if an error has occurred).
<i>Stop</i>	Stops the installation without further changing the installation files. You can continue the installation later from this point.
<i>Reset</i>	Resets all installation input files. All files in the installation directory are removed from the system and no log files are saved. You must restart the installation from the beginning.
<i>Continue</i>	Continues with the option you have chosen before.



## Facilitated Discussion

no discussion for this lesson

## Discussion Questions

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

no discussion for this lesson

---



## **Lesson Summary**

You should now be able to:

- Explain the SAPinst architecture
- Explain the log and XML files used by SAPinst
- Install SAPinst
- Explain SAPinst GUI Handling

**Lesson: Installing and Patching Oracle Database Software**

Lesson Duration: 60 Minutes

**Lesson Overview**

This lesson describes how to install and patch the Oracle Database software.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Install the Oracle Database software according to the SAP specifications
- Apply an Oracle Patch using the Universal Installer
- Apply a Oracle interim patch using the OPatch tool



During this lesson you should show the customers how to install Oracle according to the SAP specification. Also show how to patch the Oracle Software using the Universal Installer and how to apply a interim patch using the OPatch tool. All the required installation steps are explained in the screenshots.

Make sure that you read the SAP note 675940 and 617444 about the database schema IDs.

**Business Example**

A petrochemical company, ABC Limited, uses SAP to manage its data. The company now wants to install the latest version of SAP system, SAP ERP Central Component on Oracle, to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of company ABC, you need to install the Oracle Database software so that you can install SAP ERP Central Component.

**Installing Oracle using Universal Installer**

In this lesson, you are going to install the Oracle Database software needed for the SAP ECC installation. The Oracle installation will be perform according SAP specifications with Oracle Universal Installer

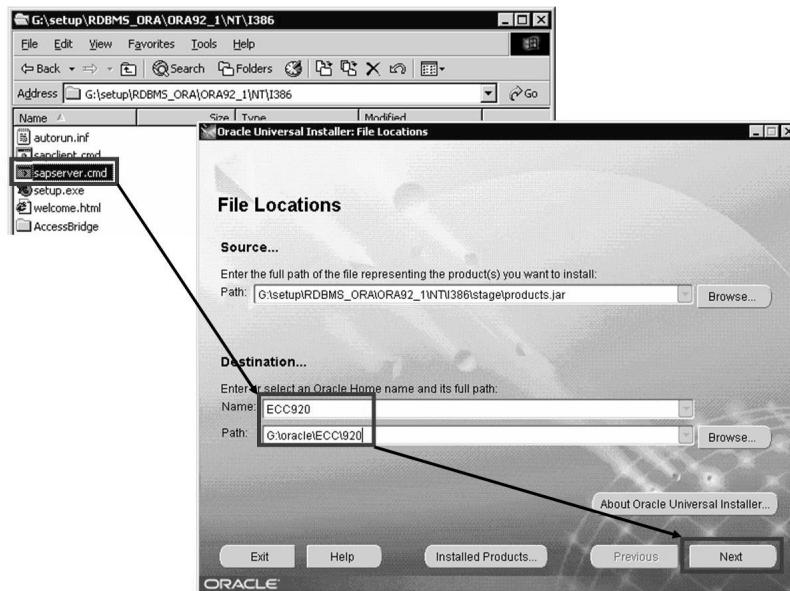


Figure 67: Installing the Oracle Database Software (1/4)

Start the Oracle Universal Installer by selecting the sapserver.cmd file in the directory <DVD drive>:\ORA92\_1\NT\I386.

The *File Locations* screen appears. In the *Name* field, enter the name for Oracle Home. In the *Path* field, enter the full path to the Oracle Home directory.

In an SAP environment, Oracle Home is called <SID>920 and the path is <DVD drive>:\oracle\<SID>\920. <SID> stands for the SAP ID you have chosen as the name of your SAP system.

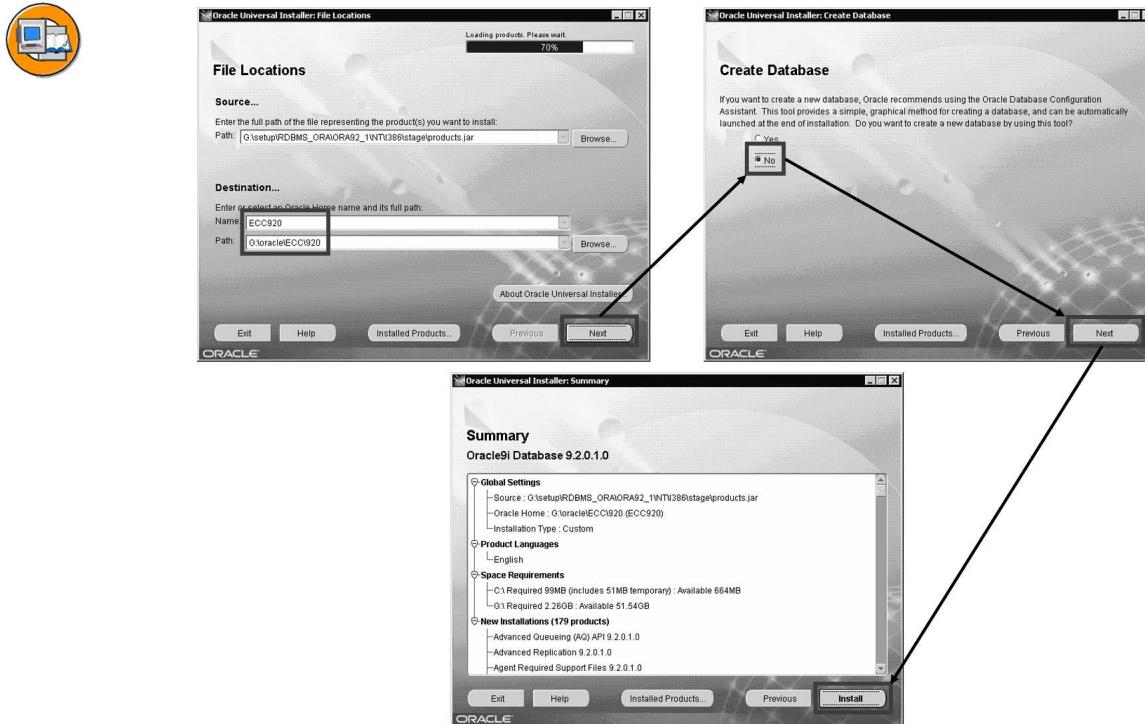
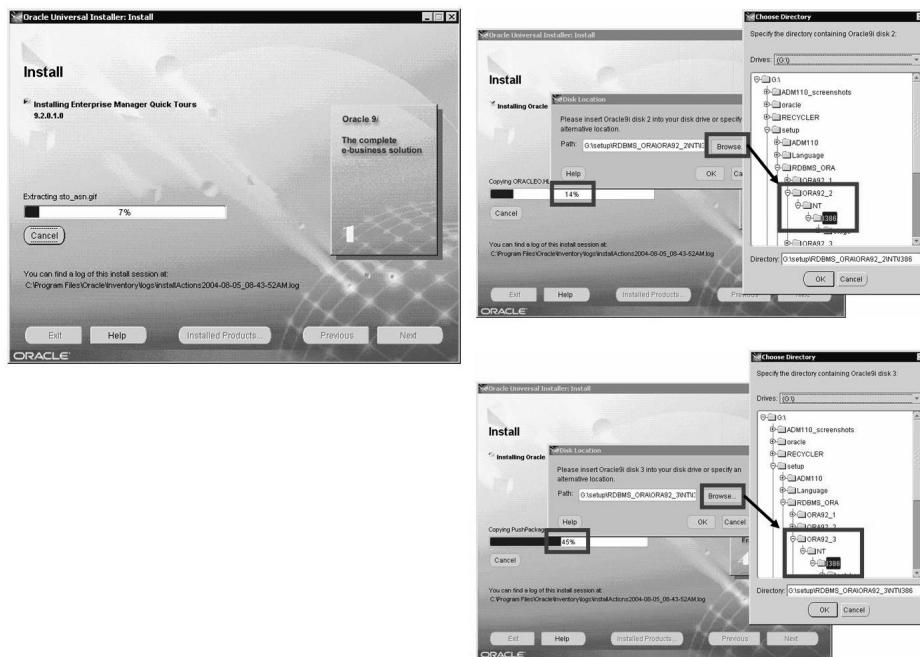


Figure 68: Installing the Oracle Database Software (2/4)

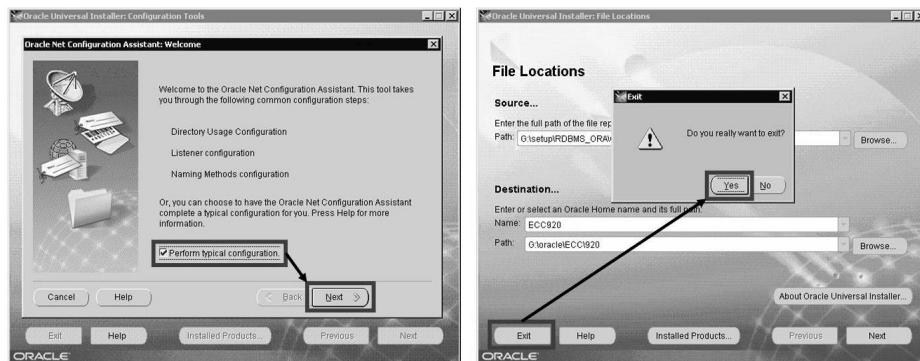
Select *NO* in *Create Database*. The Database will be created later during the installation of the SAP system. Now you are only installing the Oracle Database software.

The following screen will show an installation summary. Select *Install*.



**Figure 69: Installing the Oracle Database Software (3/4)**

The Oracle Database software is now being installed. The software is delivered on one DVD containing 3 installation CDs and the Oracle Patch CD. Around 14% and 45% Oracle Universal Installer will prompt you to change the CD. Browse to the location on CD2 and CD3.



**Figure 70: Installing the Oracle Database Software (4/4)**

In the *Oracle Net Configuration Assistant: Welcome* screen, select *Perform typical configuration* and choose *Next*.

When the Oracle Net Configuration is finished, the Oracle Database software installation is finished. You will drop back into the *File Locations* screen. Choose *Exit* and then *Yes* to leave the Oracle Universal Installer.

## Patching Oracle using Universal Installer

You have now installed the Oracle Database software. Before you can start installing the SAP software, you have to make sure that the latest Oracle patch set is installed. Only install SAP supported patch sets.

Check for the latest Oracle patch set SAP Note 578681 Installation of Newest Patch Set for Oracle 9.2.0. This SAP Note also explains how to apply the patch set. SAP Note 509314 explains how to download the patch set from the SAP Service Marketplace. The installation of the Oracle patch sets is also done with the Universal Installer. The current patch set also contains a patch for Universal Installer.

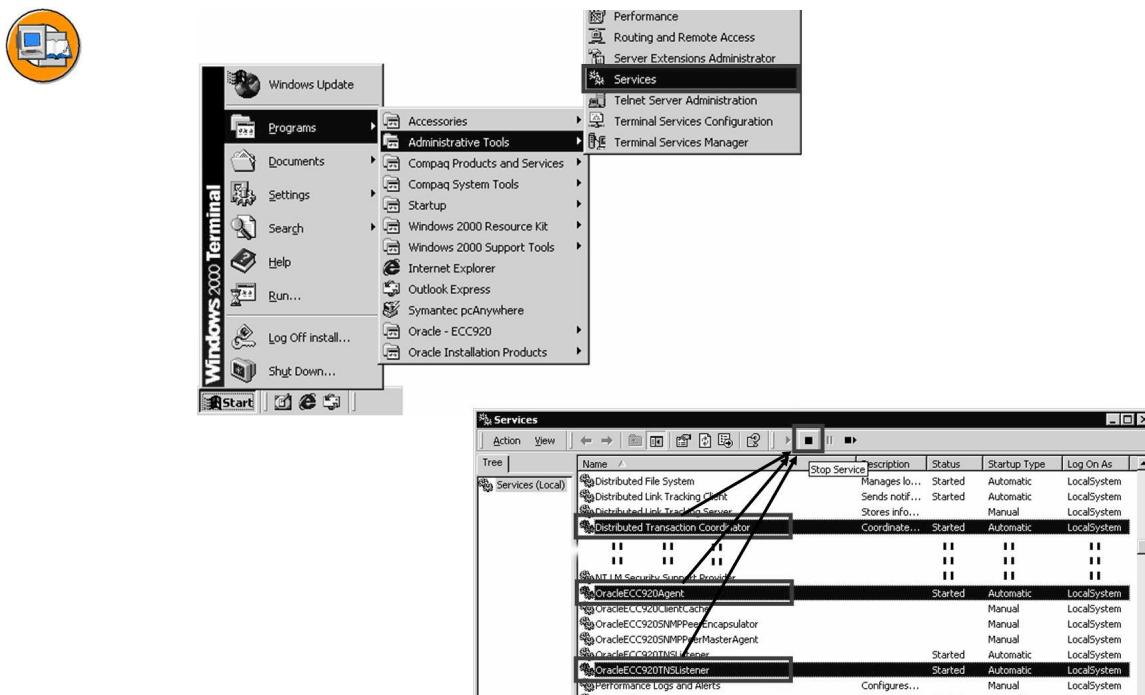


Figure 71: Patching the Oracle Database Software (1/5)

Before you can start to apply the patch set, you need to stop the following services on the Windows OS:

- Distributed Transaction Coordinator
- Oracle<SID>920Agent
- Oracle<SID>920TNSListener

<SID> is the database name you have chosen during the installation of the database software.

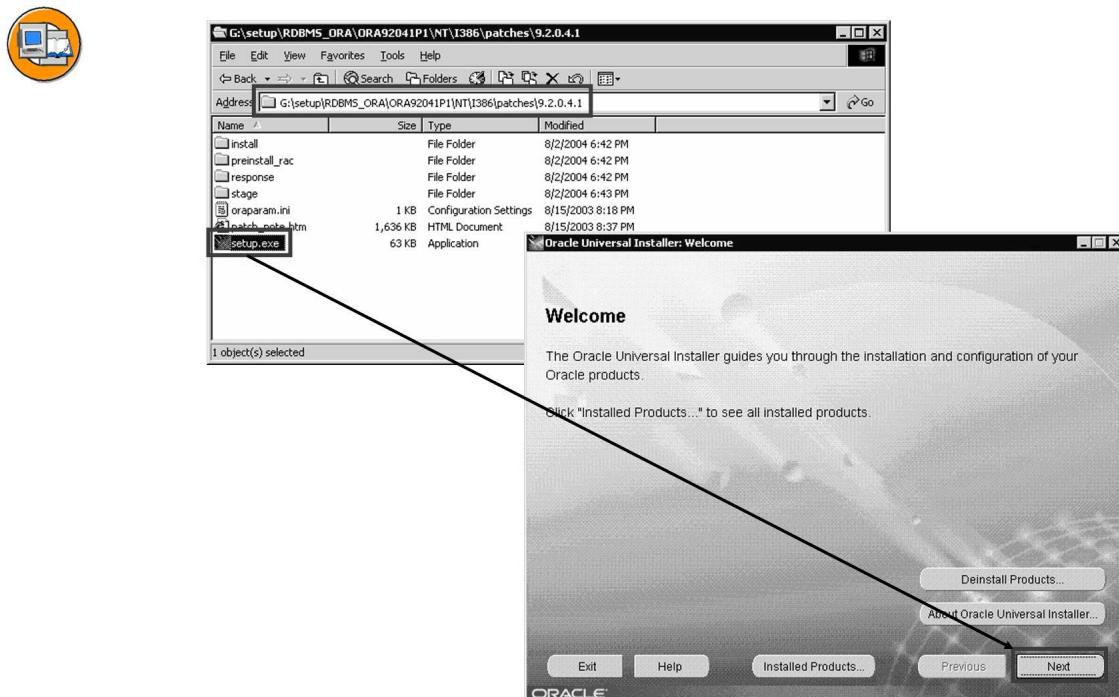
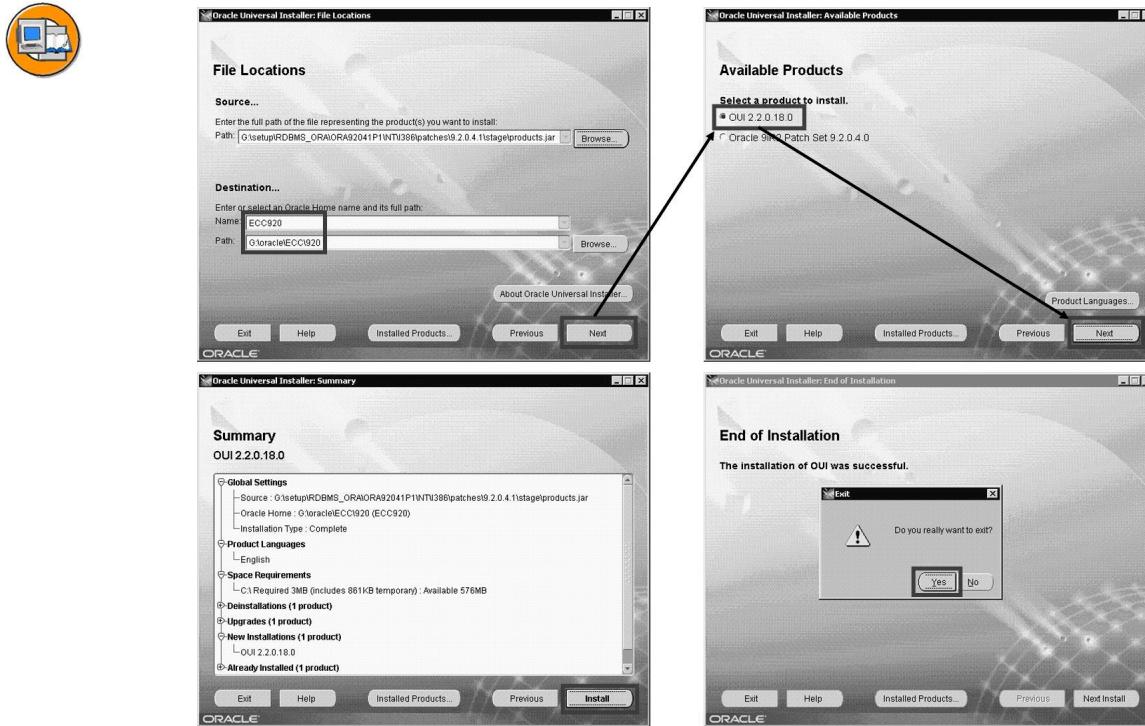


Figure 72: Patching the Oracle Database Software (2/5)

Start the Oracle Universal Installer by choosing the setup.exe file in the directory <DVD drive>:\ORA9204P1\NT\I386\patches\9.2.0.4.1. In the *Welcome* screen, select *Next*.



**Figure 73: Patching the Oracle Database Software (3/5)**

All the entries in the *File Location* screen should be the same as during the installation of the Oracle Database software.

In the *Available Products*, select *OUI 2.2.0.18.0*. This is the latest version of the Oracle Universal Installer and it has to be installed before you apply the patch set.

The next screen will show a installation summary. Choose *Install*.

When installation of the Universal Installer is finished, you will drop back into the *File Locations* screen. Select *Exit* and then *Yes* to leave the Oracle Universal Installer

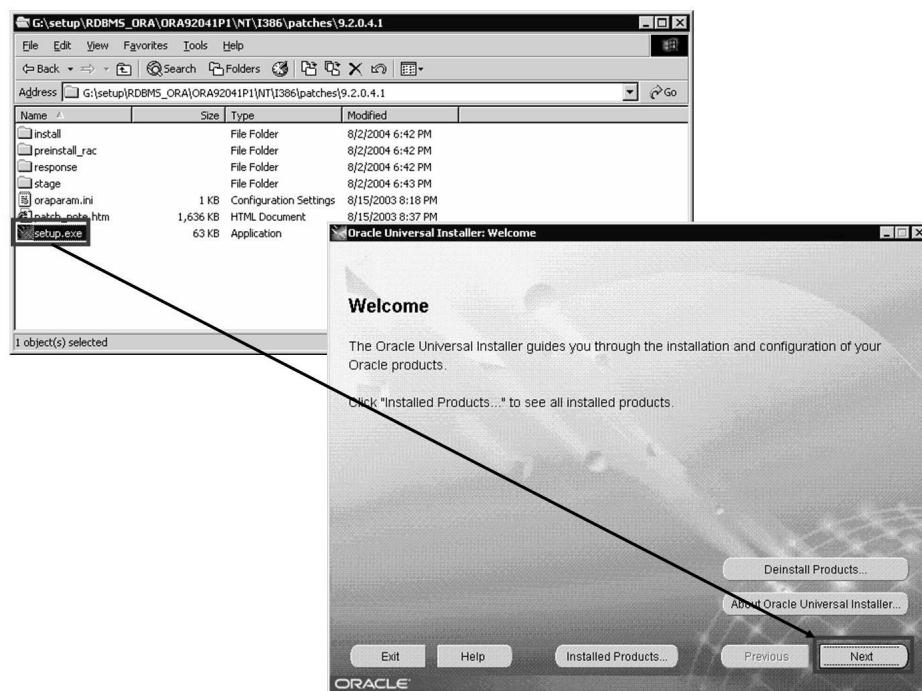
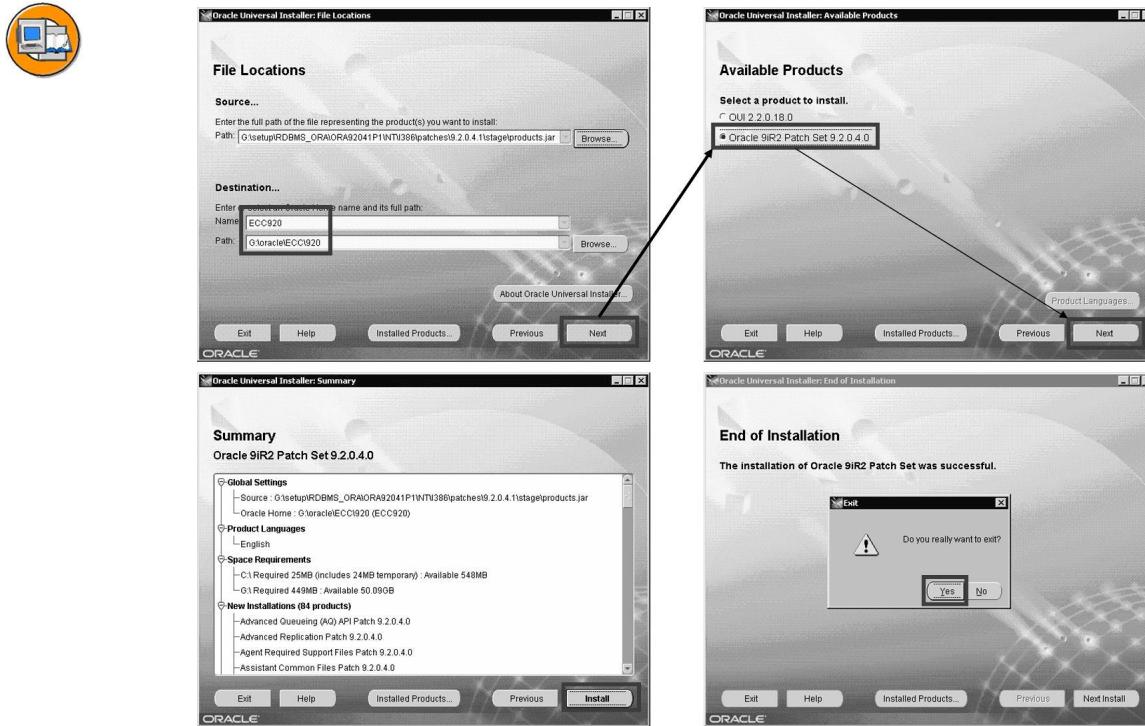


Figure 74: Patching the Oracle Database Software (4/5)

Start the Oracle Universal Installer by selecting the setup.exe file in the directory <DVD drive>:\ORA9204P1\NT\I386\patches\9.2.0.4.1. In the *Welcome* screen, choose *Next*.



**Figure 75: Patching the Oracle Database Software (5/5)**

All the entries in the *File Location* screen should be the same as during the installation of the Oracle Database software.

In *Available Products*, select *Oracle 9iR2 patch set 9.2.0.4.0*. This is currently the latest patch set. Always check SAP Note 578681 for the latest patch set.

The next screen will show a installation summary. Choose *Install*.

When installation of the Universal Installer is finished, you will go back to the *File Locations* screen. Select *Exit* and then *Yes* to leave the Oracle Universal Installer

## Patching Oracle with OPatch

Oracle also provides interim patches in between the regular patches. These patches are installed using the OPatch tool.

### OPatch versus Oracle Universal Installer

You can use the Oracle Universal Installer (OUI) to install Oracle software or Oracle patch sets, but not interim patches. The OPatch tool is only used to install/uninstall interim patches.

OPatch is an Oracle tool that supports the importing of interim patches for Oracle database software. OPatch is available as of Oracle9i Release 2 (9.2.0). You can use OPatch to install interim patches as of Oracle9i Release 2. The previous process of manually installing these kinds of patches is no longer possible as of this release and should no longer be used.

### General information on interim patches

An interim patch is only compatible with one particular Oracle version. An interim patch usually only corrects one specific software error (exception: Merge fixes). An interim patch is normally included in the following patch set. interim patches are not cumulative.

See SAP Note 306408 OPatch: Oracle Tool for Patch Installation for more information on the OPatch tool.



**Caution:** You may only import interim patches after consulting and receiving an explicit recommendation from Oracle support or if requested to do so in an SAP note.



The figure consists of two screenshots of Microsoft Windows Command Prompt windows. The top window shows the output of the command `perl -v`, which displays the Perl version (v5.6.1), build details (MSWin32-x86-multi-thread), and copyright information (1987-2001). The bottom window shows the output of the command `java -version`, which displays the Java version (1.3.1\_01), build details (Build 1.3.1\_01), and Java HotSpot Client VM details.

```
C:\WINNT\system32\cmd.exe
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\Documents and Settings\install>perl -v
This is perl, v5.6.1 built for MSWin32-x86-multi-thread
(with 1 registered patch, see perl -V for more detail)
Copyright 1987-2001, Larry Wall

Binary build 626 provided by ActiveState Tool Corp. http://www.ActiveState.com
Built 01:31:15 May 2 2001

Perl may be copied only under the terms of either the Artistic License or the
GNU General Public License, which may be found in the Perl 5 source kit.

Complete documentation for Perl, including FAQ lists, should be found on
this system using 'man perl' or 'perldoc perl'. If you have access to the
Internet, point your browser at http://www.perl.com/, the Perl Home Page.

C:\Documents and Settings\install>_

C:\Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

C:\>java -version
java version "1.3.1_01"
Java(TM) 2 Runtime Environment, Standard Edition (build 1.3.1_01)
Java HotSpot(TM) Client VM (build 1.3.1_01, mixed mode)
C:\>_
```

Figure 76: Patching the Oracle Database Software Using OPatch (1/4)



**Caution:** When the Oracle Database Software is installed, also a JRE is installed in the Oracle directory. In the Path variable this JRE is written near the beginning. Thus if you check the java version as given above you will probably get a different one as installed during the JDK installation. This is normal and very important for the Oracle software to run. SAPinst and SAP Web AS Java therefore need the JAVA\_HOME variable set correctly!

OPatch needs the following software to be installed on your server:

- A Java Runtime Environment (JRE). For more information on Java, see <http://java.sun.com/>.
- At least Perl version 5.005\_03. For more information on Perl, see <http://www.perl.org/>.

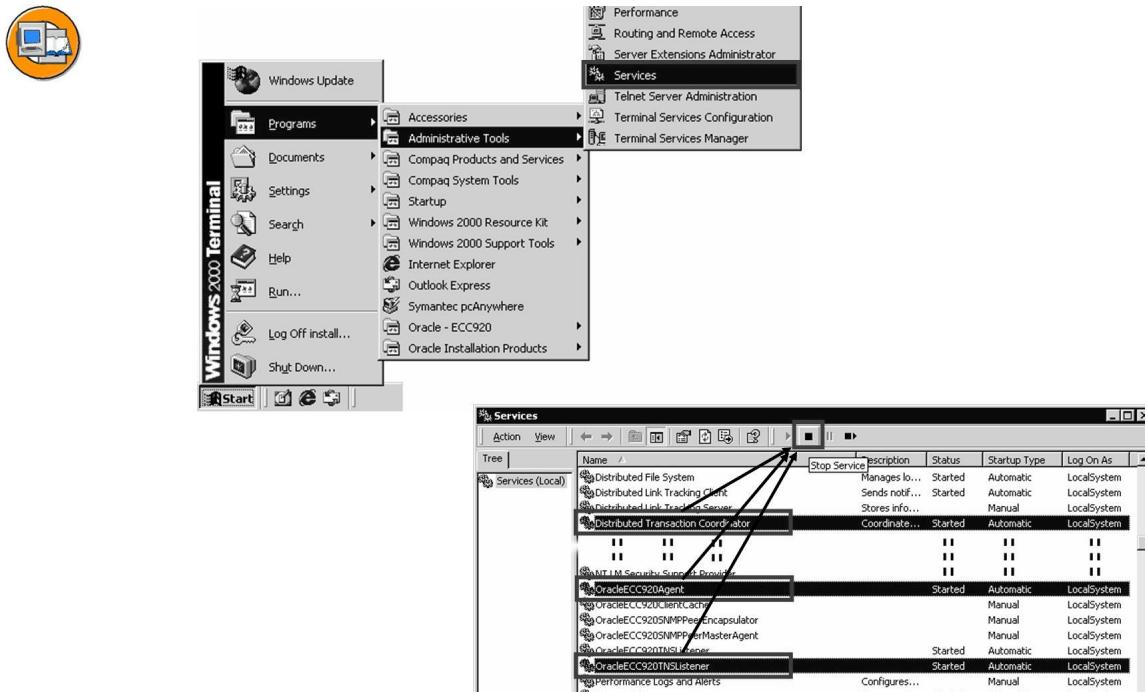


Figure 77: Patching the Oracle Database Software Using OPatch (2/4)

Before you can start to apply the patch set, you need to stop the following services on the Windows OS:

- Distributed Transaction Coordinator
- Oracle<SID>920Agent
- Oracle<SID>920TNSListener

<SID> is the database name you have chosen during the installation of the database software.



```
G:\setup\ADM110\Oracle_patch2
File Edit View Favorites Tools Help
Back Search Folders X
Address G:\setup\ADM110\Oracle_patch2
Name Size Type Modified
3160576 File Folder 8/6/2004 2:19 PM
C:\WINNT\system32\cmd.exe - perl OPatch/opatch.pl apply G:\setup\ADM110\Oracle_patch2\3160576
G:\setup\ADM110\OPatch>set ORACLE_HOME=G:\oracle\ECC\920
G:\setup\ADM110\OPatch>perl OPatch/opatch.pl apply G:\setup\ADM110\Oracle_patch2\3160576
OPatch Version 1.0.0.0.48
Perl Version 5.006001
Oracle Home = G:\oracle\ECC\920
Location of Oracle Inventory = C:\Program Files\oracle\inventory
Oracle Universal Installer shared library = C:\Program Files\Oracle\oui\bin\win32\OraInstaller.dll
Path to Java = "C:\Program Files\Oracle\jre\1.3.1\bin\java.exe"
Location of Oracle Inventory Pointer = N/A
Location of Oracle Universal Installer components = C:\Program Files\Oracle\oui
Required Jar File under Oracle Universal Installer = jlib\OraInstaller.jar

Please shut down Oracle instances running out of this ORACLE_HOME
<Oracle Home = g:\oracle\ecc\920>
Is this system ready for updating?
Please respond Y\N >
Y
Patching...
Updating inventory...
OPatch/opatch.pl version: 1.0.0.0.48
Copyright <c> 2001,2002,2003 Oracle Corporation. All Rights Reserved.

OPatch succeeded.
G:\setup\ADM110\OPatch>
```

Figure 78: Patching the Oracle Database Software Using OPatch (3/4)

To start the OPatch tool, the following steps have to be performed:

- Open a command prompt and change to the OPatch directory.  
In your training system, this is: `cd G:\setup\ADM110\OPatch.`
- Set the ORACLE\_HOME environment variable to the Oracle home directory.  
In your training system, this is: `set ORACLE_HOME=G:\oracle\<SID>\920`
- Start the OPatch tool with the command: `perl OPatch/opatch.pl apply <path to the interim patch>`.  
In our training system this is: `perl OPatch/opatch.pl apply G:\setup\ADM110\Oracle_patch2\3160576`
- OPatch starts to check if the system is ready for updating. Press *Y* and *Enter* to start updating.

When OPatch is chosen, it displays the text **OPatch succeeded**.



```

C:\Command Prompt
G:\setup\ADM110\OPatch>perl OPatch/opatch.pl lsinventory
Get inventory loc. from C:\Program Files...
Parsing C:\Program Files\oracle\inventory\ContentsXML\comps.xml
Found "oracle.swd.oui" version "2.2.0.18.0"
on "C:\Program Files\Oracle\oui"
Oracle Home = G:\oracle\ECC\920
Location of Oracle Inventory = C:\Program Files\oracle\inventory
Oracle Universal Installer shared library = C:\Program Files\Oracle\oui\bin\win32\OraInstaller.dll
Path to Java = "C:\Program Files\Oracle\jre\1.3.1\bin\java.exe"
Location of Oracle Inventory Pointer = N/A
location of Oracle Universal Installer components = C:\Program Files\Oracle\oui
Required Jar File under Oracle Universal Installer = jlib\OraInstaller.jar

accessing inventory... This may take up to 300 seconds.
(retry 10 times, delay 30 seconds each time)
"C:\Program Files\Oracle\jre\1.3.1\bin\java.exe" -classpath "C:\Program Files\Oracle\oui\lib\oraInstaller.jar;C:\Program Files\Oracle\oui\lib\srvm.jar;OPatch\jlib\opatch.jar;G:\oracle\ECC\920\jlib\share.jar;" -Dpatch.retry=10 -Dpatch.delay=30 opatch\lsInventory "G:\Program Files\Oracle\oui" "G:\oracle\ECC\920" opatch.pl 1.0.0.48 FALSE
Retrieving inventory.

Installed Patch List:
=====
1> Patch 3160576 applied on Tue Aug 10 09:18:12 CEST 2004
   l  base bugsz: 2774736 2986228 2991842 2489781 2870605 2964015 2799139 254
9186 3071843 2825036 2615473 2740481 2740805 2596292 3120033 3119025 3105912 299
4216 2988739 3131210 3019273 3174874 2829873 3010012 2987501 3192983 2608044 307
7778 3086883 2968709 3109223 3028021 2900761 3039491 3078144 3138734 3157284 319
7856 3068795 3127957 2758287 3114490 3118055 3185622 2715491 2827119 2420940 289
9668 3004610 2978512 3041411 3001020 2968572 3210292 3119366 3018017 3079678 316
7234 2794250 2820295 2906001 2997536 3035115 3161209 2355645 2167574 3112212 298
2297 2926080 3123038 2819504 3031083 2980400 2971801 3039078 2736734 2827898 313
4829 2684459 2768327 3063241 2121126 3121872 2839655 2620541 1

OPatch\opatch.pl version: 1.0.0.0.48
Copyright (c) 2001,2002,2003 Oracle Corporation. All Rights Reserved.

OPatch succeeded.
G:\setup\ADM110\OPatch>

```

**Figure 79: Patching the Oracle Database Software Using OPatch (4/4)**

To test if the interim patch was applied successfully, execute the following command:

`perl OPatch/opatch.pl lsinventory`

Patch 3160576 should be listed in the Installed Patch List.



## Exercise 4: Installing and Patching the Oracle Database Software

Exercise Duration: 45 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install and patch the Oracle Database software

### Business Example

ABC is a petrochemical company that wants to run the SAP ERP Central Component system on an Oracle Database. As the system administrator of ABC Limited, you need to install and patch the Oracle Database software according to the SAP specifications.

### Task 1: Install the Oracle Database software

Install the Oracle Database software with Universal installer.

1. Start the Oracle Universal Installer and install the Oracle Database as described in the lesson.

### Task 2: Patch the Oracle Database software

After you have installed the Oracle Database software, you want to apply the latest patch set.

1. Stop the Oracle Services as described in the section Patching Oracle using Universal Installer.
2. Start the Oracle Universal Installer and apply the patch set 9.2.0.4 as described in the lesson.

### Task 3: Apply the latest interim patch

According to a SAP Note, you need to install a interim patch.

1. Start the OPatch tool and apply interim patch 3160576 as described in the section Patching Oracle with OPatch.

## Solution 4: Installing and Patching the Oracle Database Software

### Task 1: Install the Oracle Database software

Install the Oracle Database software with Universal installer.

1. Start the Oracle Universal Installer and install the Oracle Database as described in the lesson.
  - a) Start the sapserver.cmd command in the directory G:\setup\RDBMS\_ORA\ORA92\_1\NT\I386 and follow the instructions as explained in the Installing and patching Oracle Database software lesson.

### Task 2: Patch the Oracle Database software

After you have installed the Oracle Database software, you want to apply the latest patch set.

1. Stop the Oracle Services as described in the section Patching Oracle using Universal Installer.
  - a) See Exercise description.
2. Start the Oracle Universal Installer and apply the patch set 9.2.0.4 as described in the lesson.
  - a) Start setup.exe in the directory G:\setup\RDBMS\_ORA\ORA9204P1\NT\I386\patches\9.2.0.4.1 and follow the instructions as explained in the Installing and Patching Oracle Database software lesson.

### Task 3: Apply the latest interim patch

According to a SAP Note, you need to install a interim patch.

1. Start the OPatch tool and apply interim patch 3160576 as describe in the section Patching Oracle with OPatch.
  - a) Check/Set the environment variable ORACLE\_HOME.
  - b) Open a command box and change to the directory G:\setup\ADM110\OPatch and type the following command:perl OPatch/opatch.pl apply G:\setup\ADM110\Oracle\_patch2\3160576
  - c) Check if the patch is applied correctly by typing the command:perl OPatch/opatch.pl lsinventory



## Lesson Summary

You should now be able to:

- Install the Oracle Database software according to the SAP specifications
- Apply an Oracle Patch using the Universal Installer
- Apply a Oracle interim patch using the OPatch tool

## Related Information

- More information on Oracle can be found at the SAP Service Marketplace (<http://service.sap.com/platforms>. *Platform Specific Information → Oracle*)

## Lesson: Central Instance Installation



Lesson Duration: 45 Minutes

### Lesson Overview

This lesson describes how to install a central instance.



### Lesson Objectives

After completing this lesson, you will be able to:

- Install a central instance



In this lesson, explain how to install the central instance.

### Business Example

ABC Limited, a petrochemical company, uses SAP to manage its data. The company plans to install the latest version of SAP, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component. You have installed SAPinst. Now, you need to install the central instance.



### System Demo

Perform the installation of an SAP system by following the information given in the course material. Start with installing SAPinst and then install the central instance.



**Note:** You and your learners have to start the installation at the first day of the course. At the end of the first day, all learners should be at a point where the database installation is running.

### Known problems:

Sometimes SAPinst does nothing over a long time (and it only takes a short time for other learners). In that case close all SAPinst screens and restart SAPinst.

### Multinational Language Support (non Unicode)

MNLS support is only required if you plan to use multiple code pages in your SAP system. For more information on implementing an additional code page, see SAP note 73606 and its attachment. The pdf-document (attachment) describes the usage of the RSCPINST report.

## Installing the Central Instance

Start sapinst.exe as explained in the lesson Introducing SAPinst. The SAPinst Welcome screen displays the different installation components, such as SAP ERP 2004 or SAP SRM 4.0.

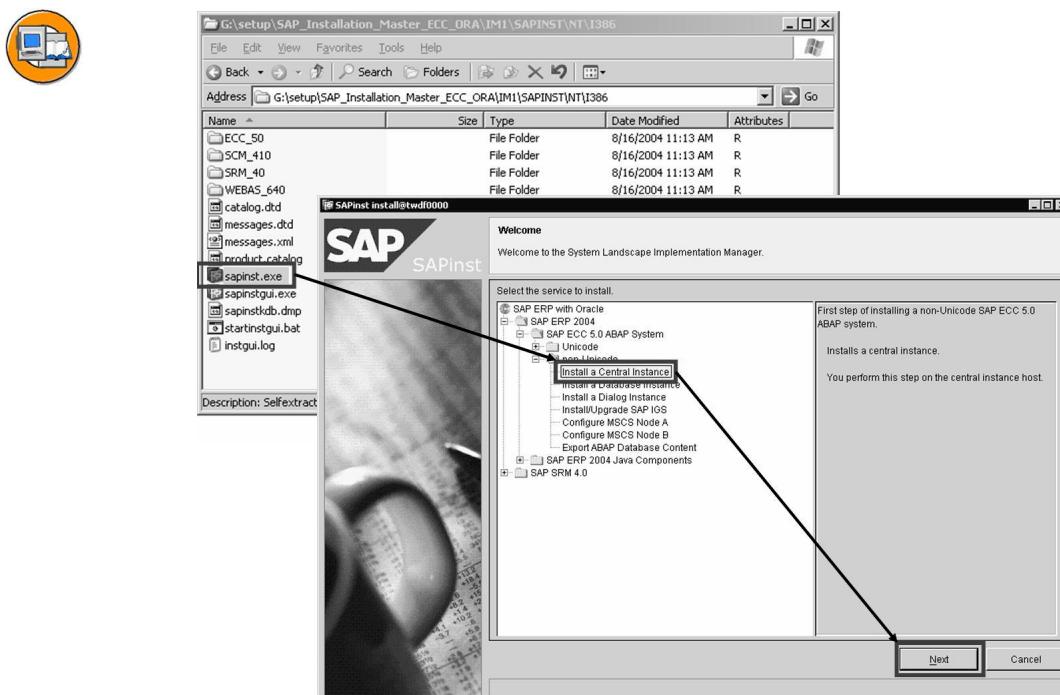
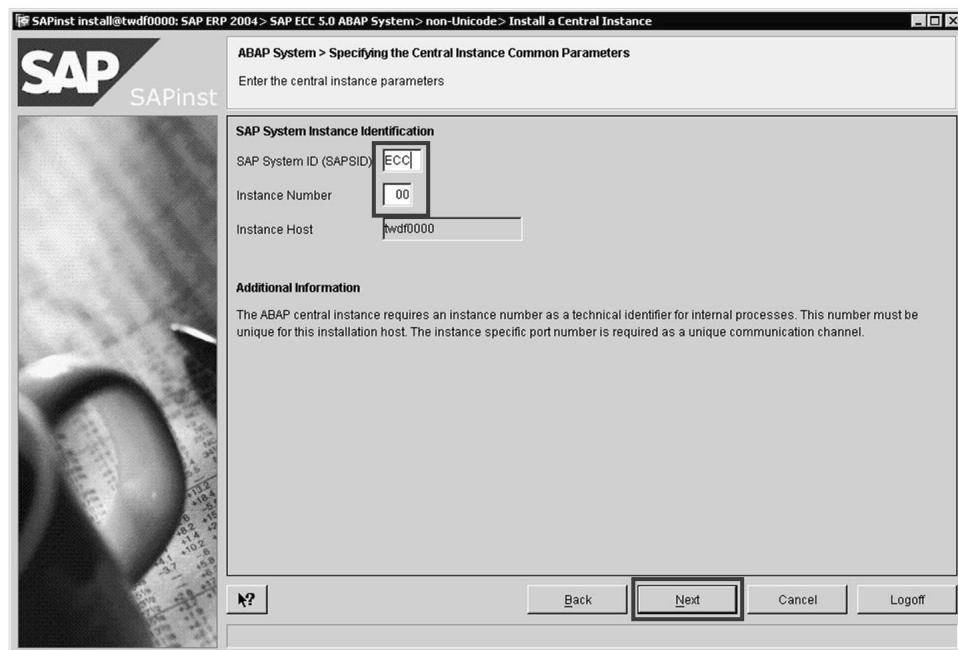


Figure 80: Start SAPinst

To start installing the Central Instance of a non-Unicode SAP ECC 5.0 ABAP system follow the path *SAP ERP with Oracle* → *SAP ERP 2004* → *SAP ECC 5.0 ABAP System* → *non-Unicode* → *Install a Central Instance*



**Figure 81: SAP System ID, Central Instance Number**

Enter the SAP system ID <SAPSID>, such as C11.

The ID of your SAP system (<SAPSID>) and your database system (<DBSID>) must be unique throughout your organization and consist of exactly three alphanumeric characters. Only upper-case letters are allowed. The first character must be a letter and not a digit.

Because the following IDs are reserved, you cannot assign them to your SAP system:

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



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

Instance number: Enter the instance number of the central instance.

The number must be two digits and unique to the host. Assign a value from 0 to 97. Ports 98 and 99 are reserved for SAProuter.

For Windows installations, do not use ports 25, 43, 60, 72 or 89 because there are known problems with other applications, such as Windows Terminal Server Manager, which also use these ports. SAPinst does not check for occupied ports during the installation.

Previously installed instances are not affected. If an instance works properly, there is obviously no port conflict.



### Database Parameter

- SAP recommends that you choose the same IDs for the database instance and the SAP system. On some platforms, you can choose a database ID that is different from the SAP system ID.
- MSSQL-Server: If you install the SAP system in a new database, the name is predefined and cannot be changed.
- Oracle: The Oracle database SCHEMA ID <SCHEMA-ID> and the <DBSID> can be different from the SAP system ID <SAPSID>. See also the planning unit!

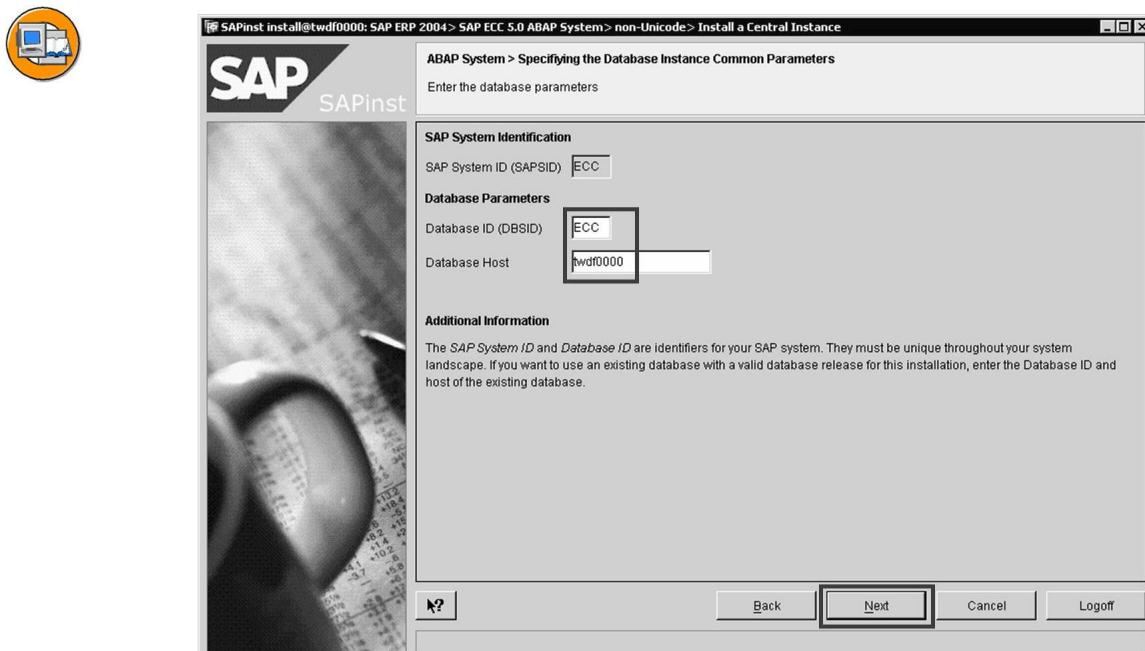


Figure 82: Database parameters

Enter the ID (<DBSID>) of the database instance. SAP recommends that you use the same IDs for the database system and the SAP system. However, it is possible to use a database instance ID that is different from the SAP system ID.

In the *Database host* field, enter the hostname of your database server. Make sure that you use a hostname according to SAP Note 611361.

To find out the host name, enter the hostname at the command prompt of the database host.



## Windows Domain Information and RAM

RAM:

- UNIX: Note 146528

A swap space size of 3 to 4 times the RAM size is recommended, even though a swap space of 10 GB or more might have to be created. The virtual memory available for a process is divided into "shared memory" and "local memory".

All processes of an instance can access the shared memory, while only one process can access the local memory. Most memory used in the R/3 environment is shared memory. Experience has shown that the memory used is divided into 80% shared memory and 20% local memory. In individual cases, there might be exceptions to this rule. Shared memory restrictions by the operating system affect the configuration options of the R/3 System drastically. The shared memory includes all R/3 buffers, such as program, table, roll buffers and R/3 extended memory. The local memory includes the local memory of the work processes or heap.

In the 32-bit technology used so far, it is theoretically possible to address a maximum of 4 GB of memory from one process. Since a lot of memory cannot be used at all due to fragmentation effects, the memory that is actually available to an R/3 work process is much smaller in practice. The following sections specify the restrictions for some operating systems.

With the 64-bit technology, the above problems are solved. In 64-bit technology, an address space of many terabytes is available to a work process. To be able to use the 64-bit technology, you need a 64-bit operating system, a 64-bit version of the database software, and a 64-bit version of the R/3 kernel.

Compared to the 32-bit version, the 64-bit R/3 kernel has no new functions. Compared to the 32-bit version, using the 64-bit version remains the same for users and administrators. Memory management becomes considerably simpler when you use the 64-bit kernel as compared to the 32-bit version. Details can be found in Note 146289.

The following 64-bit products are currently released:

a) Databases:

- Oracle 8.0.5, see also Notes 123366 and 126137

- Informix 7.30FC6, see also Notes 76862 and 111876

b) R/3 kernel:

R/3 Release 4.0 and higher: Also see under the different operating systems

A 64-bit version of the R/3 kernel for R/3 Release 3.0/3.1 is not planned.

Information on released 64-bit products can be found in R/3 notes of the XX-SER-SWREL component or in SAP Marketplace under <http://service.sap.com/platforms>.



**Note:** If you want to use 64-bit databases or 64-bit R/3, you must at least provide a development or test system, which you also change to 64-bit technology. All upgrades of operating systems and databases or the use of a new R/3 kernel must always be carried out in a development or test system before productive use. This does not specifically apply to using the 64-bit kernel but should be a precondition for all changes to the system.

- NT: Note 88416

To supply enough resources to the database, you should restrict the amount of memory being used by the R/3 System. As a rule of thumb, SAP/DB = 70/30 is valid. Set the PHYS\_MEMSIZE parameter to approximately 70% of the installed main memory.

If additional application servers operate with this database, you may have to increase the share of memory for the database.

- 546361:

How large is the address space on Windows NT or Win2000?

As on all 32-bit operating systems, the address space is limited to 4 GB. 2 GB of this is available for a process on Windows NT or Windows Server operating systems.

With the "NT Enterprise Edition" or "Windows 2000 Advanced Server" version, a 3 GB address space can be made available by setting the /3 GB option on a process (note 110172).

- Oracle, SAP Note 441663

**Windows Domain:**

- **Granting User Rights for the Installation**

The installation of SAP ECC and the SAPinst tool is only possible with certain rights and privileges that authorize the execution of installation steps. Without these rights and privileges, any attempt to install the system aborts. The rights you need depend on whether you intend to perform a domain or local installation.

- **Local Installation**

To perform a local installation, you need to 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 host in the system. To obtain these rights, the system administrator must enter you as a member of the Local Admins group.

- **Domain Installation**

To perform a domain installation, you need to have domain administration rights. In a domain installation, user information is stored centrally on the domain controller and is accessible to all hosts in the system. To obtain these rights, the system administrator must enter you as a member of the Domain Admins group. If, for any reason, you are unable to obtain domain administrator rights for the installation, you can also perform the installation as a domain user with local administration rights (see the “Performing a Domain Installation Without Being a Domain Administrator” section in the installation guide)

---

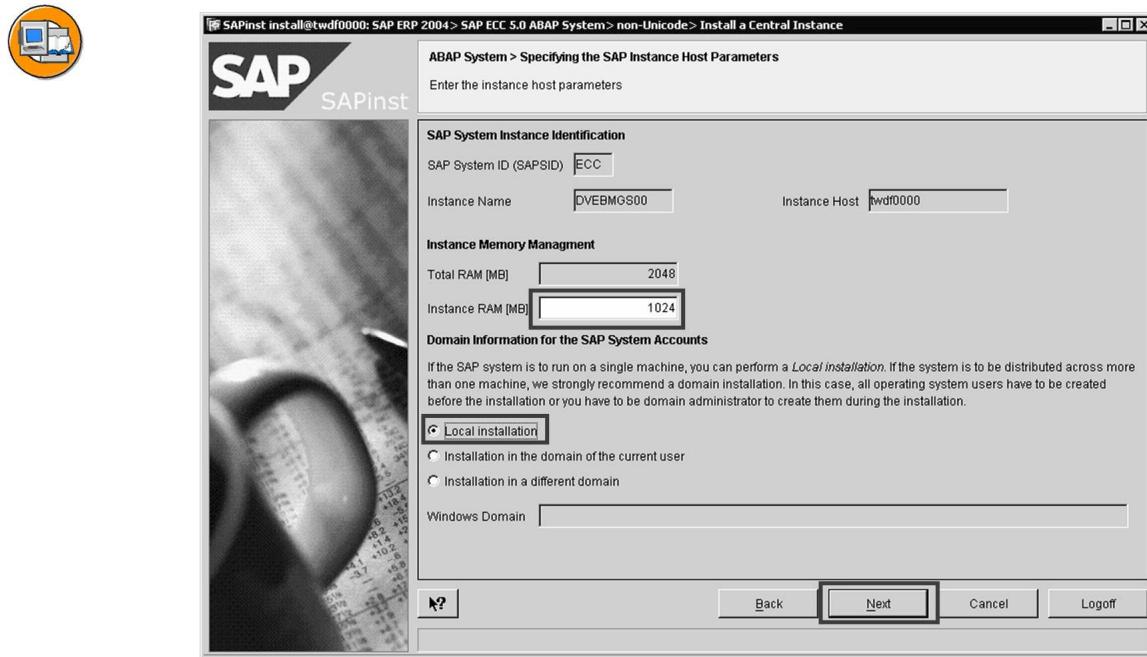


Figure 83: Windows Domain Information and Memory

### Random Access Memory (RAM) and swap space for the central instance

- For a ABAP only system, the default value is the entire RAM or swap space. Reserve some RAM for the database instance. As a rule of thumb, SAP/DB = 70/30 is valid. Be sure to reserve at least the minimum values required for the instance, which is at least 512 MB for a non-Unicode SAP system and at least 1 GB for a Unicode SAP system.
- For a ABAP+JAVA system, the default value is the entire RAM or swap space. Reserve some RAM for the database instance. As a rule of thumb, SAP/DB = 70/30 is valid. Be sure to reserve at least the minimum values required for the instance, which is at least 768 MB for a non-Unicode SAP system and at least 1,2 GB for a Unicode SAP system.
- The required Paging File Size on Windows:
  - 32-bit: 1 GB plus 3 times RAM. Maximum required is 10 GB.
  - 64-bit: At least 20 GB is recommended for standard installations (for more information, see SAP Note 153641).
- The required swap space on Unix:
  - 32-bit: 3 \* RAM, minimum 3 GB
  - 64-bit: At least 20 GB is recommended for standard installations (for more information, see SAP Note 153641).

For installations on the Windows operating system, use the following information

- Domain information for SAP system accounts:
  - Local installation: All Windows accounts and user information is stored locally. Perform a local installation for an SAP system to run on a single host. Authorization problems can occur for a distributed system.
  - Installation in a different domain.
  - Installation in the domain of the current user.
- In a domain installation, user information is stored centrally on the domain controller and is accessible from all hosts in the system. If the system is to be distributed across multiple computers, SAP strongly recommends a domain installation.

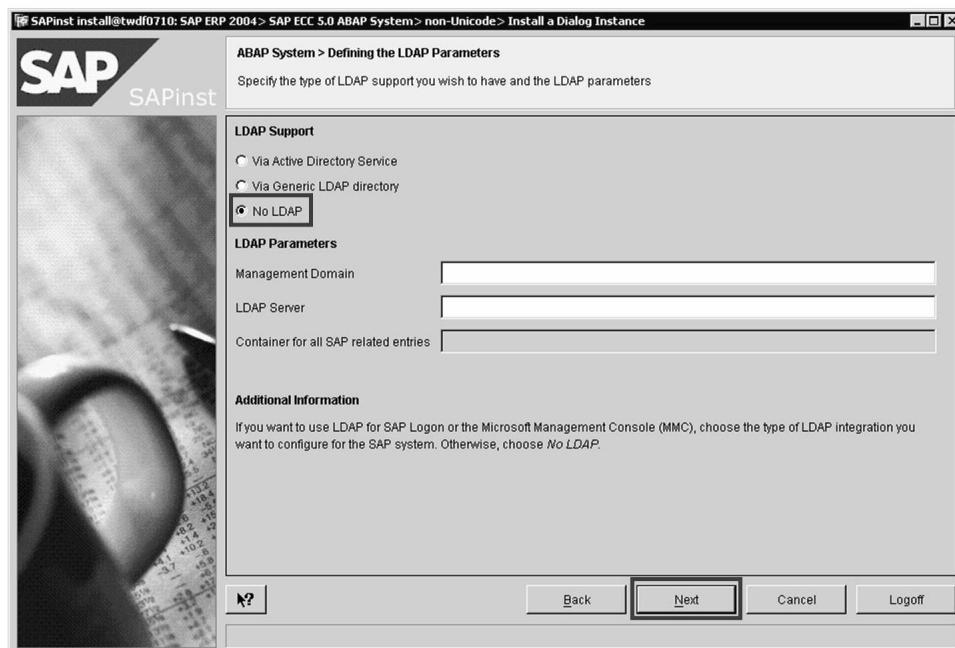


### LDAP (Lightweight Directory Access Protocol)

If you choose LDAP support, the installation routine performs some necessary LDAP configuration changes for an existing directory server. The installation of a directory server is not a part of SAP ECC installation. The LDAP configuration here is used to store SAP logon and the Microsoft Management Console (MMC) information. This has nothing to do with the LDAP chapter in the ADM102!!!



**Caution:** If you selected *Local Installation* in the previous screen then the *LDAP Configuration* screen will **NOT** appear.



**Figure 84: LDAP Configuration**

Select *No LDAP* if this screen appears.

LDAP allows you to centrally store important information within a corporate network on a server where it can be easily accessed and administered. If an LDAP directory is available on the corporate network, you can configure SAP ERP Central Component to use this feature. For example, to store SAP logon and the Microsoft Management Console (MMC) information.

A SAP Web Application Server can be configured to read/write SAP User information from a directory server. ADM102 explains how to configure a SAP Web AS to connect to a directory server.

Active Directory: Select this option to integrate Windows 2000 Active Directory services.

- Active Directory is a feature of Windows 2000 and is automatically available on all domain controllers.
- To enable an SAP system to use the features offered by Active Directory, you must configure both Active Directory and the SAP system. You must decide whether you want to use Active Directory before the installation because it influences the installation process.

### Generic LDAP Directories

- Select this option to configure the system to support the LDAP directories running on Windows or UNIX computers.
- The process of preparing the SAP system to use generic LDAP services involves a number of manual steps. Both the LDAP directory and the SAP system must be configured.

Select *No LDAP* if you do not want to use LDAP at all.

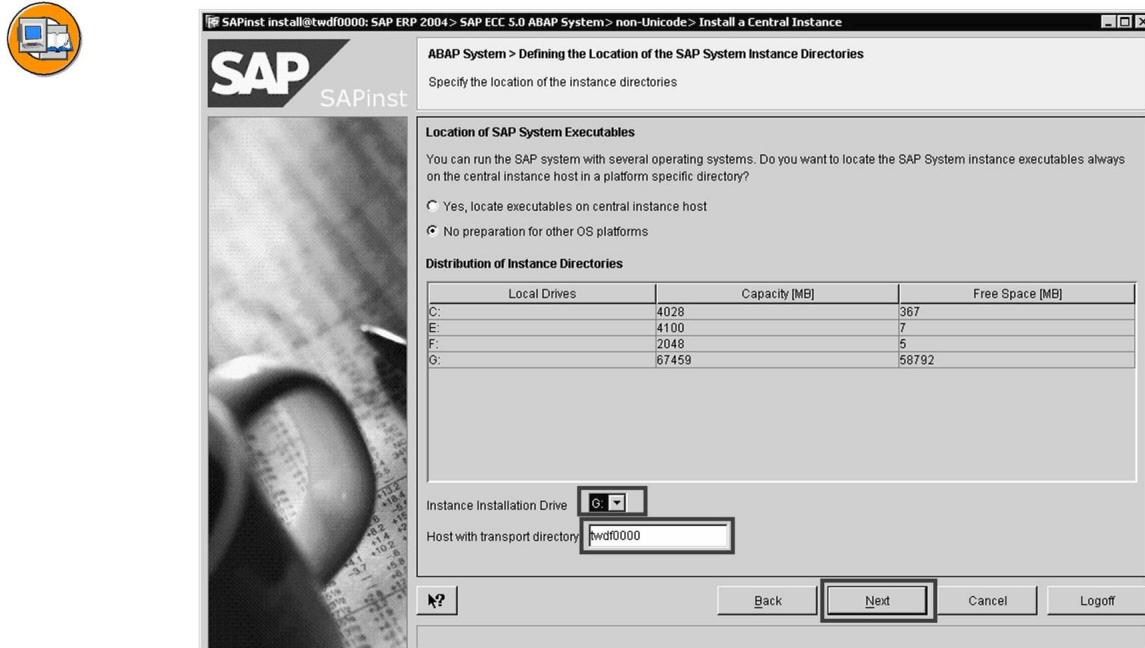
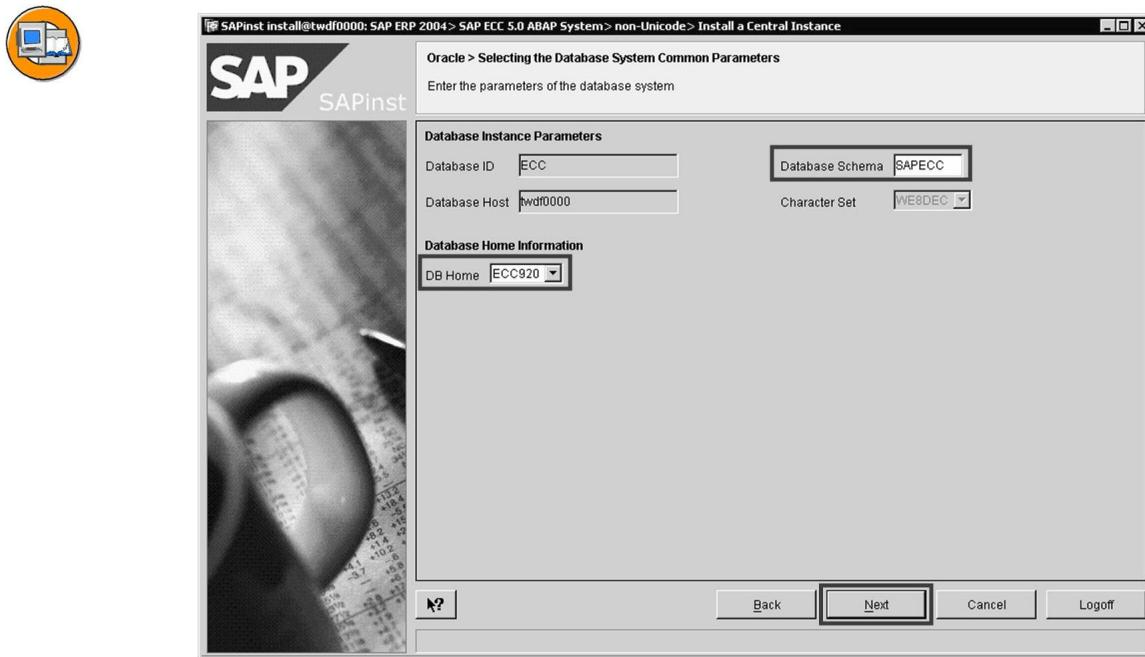


Figure 85: Instance Installation Drive and saptranshost

For Windows operating systems, select the drive for the SAP base directory tree. For example, selecting G: creates the \usr\sap\ directory under drive G:. If saploc already exists, you cannot select the local instance directories.

For UNIX, enter or confirm the base directory for SAP ERP Central Component. Do not add <SAPSID> as a subdirectory because the system automatically creates this directory. That is, if you enter "/sapmnt", the system creates the /sapmnt/<SAPSID> directory.

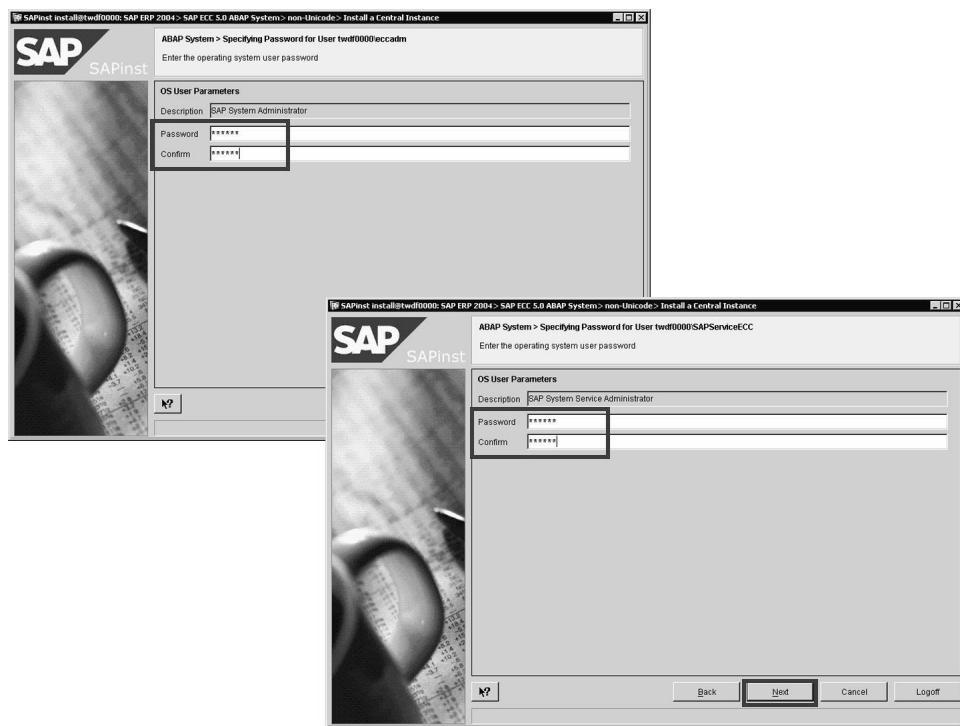
Host with transport directory: You must enter the name of the host where the central transport directory is located.



**Figure 86: Database Schema and DBHOME Parameters**

Enter the name of the database schema (SAP<SCHEMA\_ID>, whereas <SCHEMA\_ID> must be exactly three characters long).

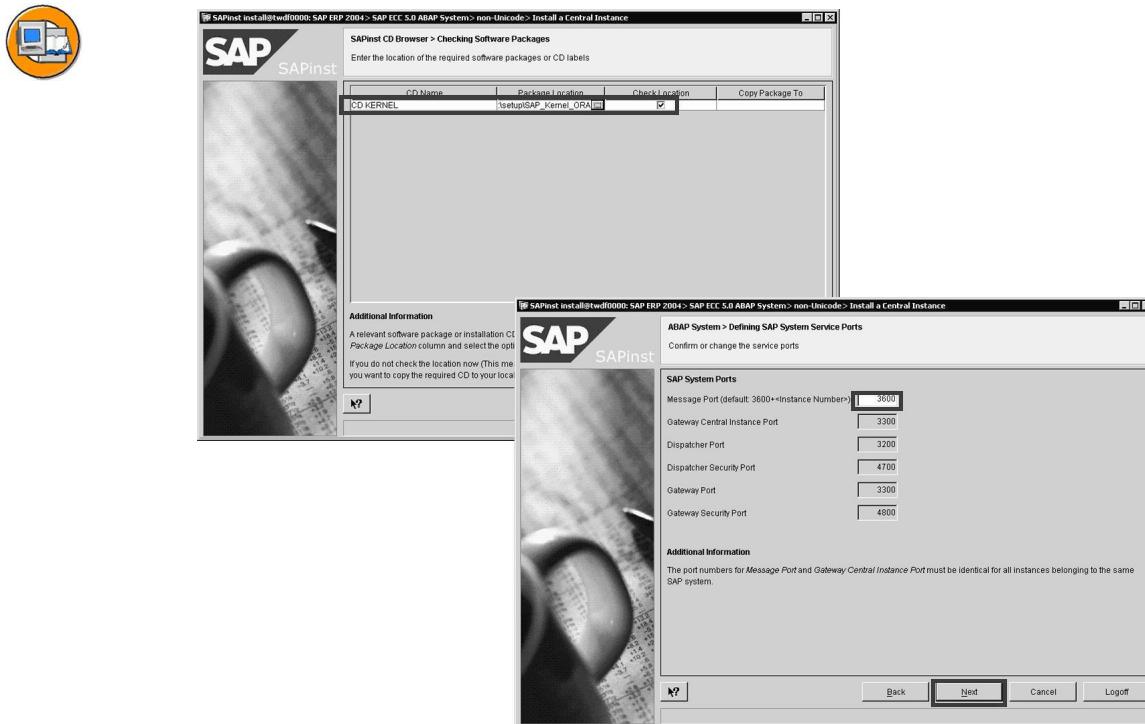
Enter the name of the Oracle Home. In an SAP environment, this is normally <drive letter>:\oracle\<SID>\920



**Figure 87: Set Password for Operating System Users**

Enter and confirm the password for the SAP system administrator <sapsid>adm.

Enter and confirm the password for the SAP system administrator SAPService<sapsid>.



**Figure 88: CD Browser and Message Server Port**



### CD Browser: Kernel CD

- During the installation use the SAPinst dialog CD browser. There you can check the entered location and then copy the entire CD to the path you entered in the Copy Package to column.
- If you do not enter any Package Location and leave the Check Location flag cleared, SAPinst skips the check and you can continue the installation procedure. However, SAPinst later asks for the missing LABEL.ASC.
- If you enter the path of the Package Location and leave the Check Location flag cleared, SAPinst skips checking the label location, but your entered package locations are used later for the installation. SAPinst asks for a missing LABEL.ASC if the package location is incorrect.
- If you enter the path of the Package Location and select the Check Location flag, SAPinst checks the label location and displays an error message if the location is incorrect. If all locations are correct, SAPinst does not ask for LABEL.ASC files.

During the installation procedure, SAPinst first checks and then verifies the availability and location of the required installation CDs. SAPinst does this by displaying the CD Browser window, asking for the LABEL.ASC file that contains information about the software package to be installed.

SAPinst checks the availability of the software package. You can recognize this situation by the **Check Location** flag displayed in the CD Browser window.

Enter the port number of the message server. The default value is 36## where ## stands for the instance number of the central instance. The port number must be identical for all instances belonging to the same SAP system.



**Caution:** In our training environment the services file is maintained. So for some SAP system IDs a port number is already given in the services file. For example sapmsDEV is assigned to port 3603. If you now choose DEV as your new system ID, SAPinst will enter this port into the screen above.

This is not a bug, but a nice feature. The customer has to maintain the service file on all his hosts with all the system IDs of his SAP systems. In this case he will notice at latest at this point, that the system ID is already used in his company, or at least he should check this!

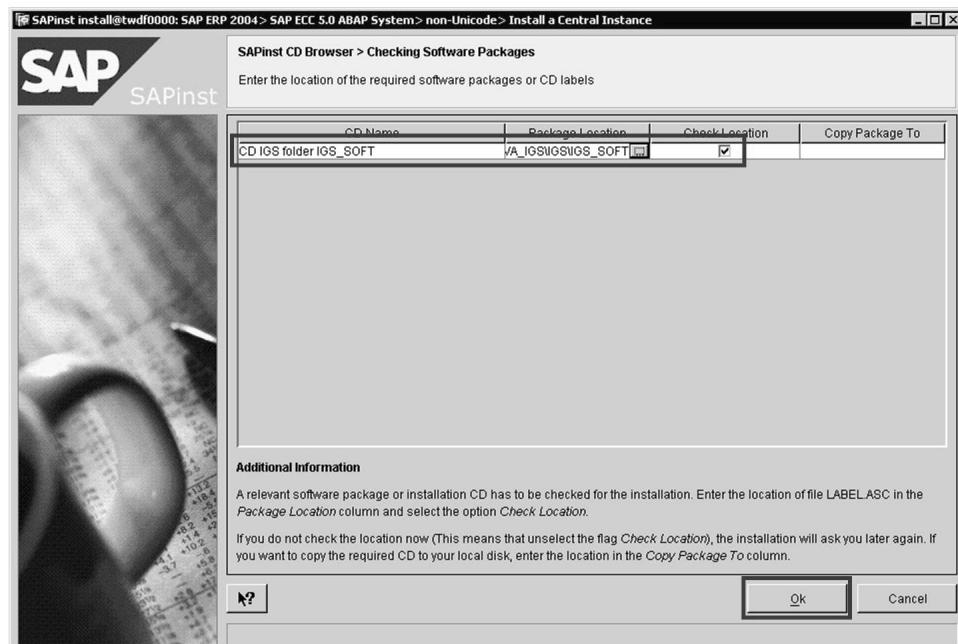
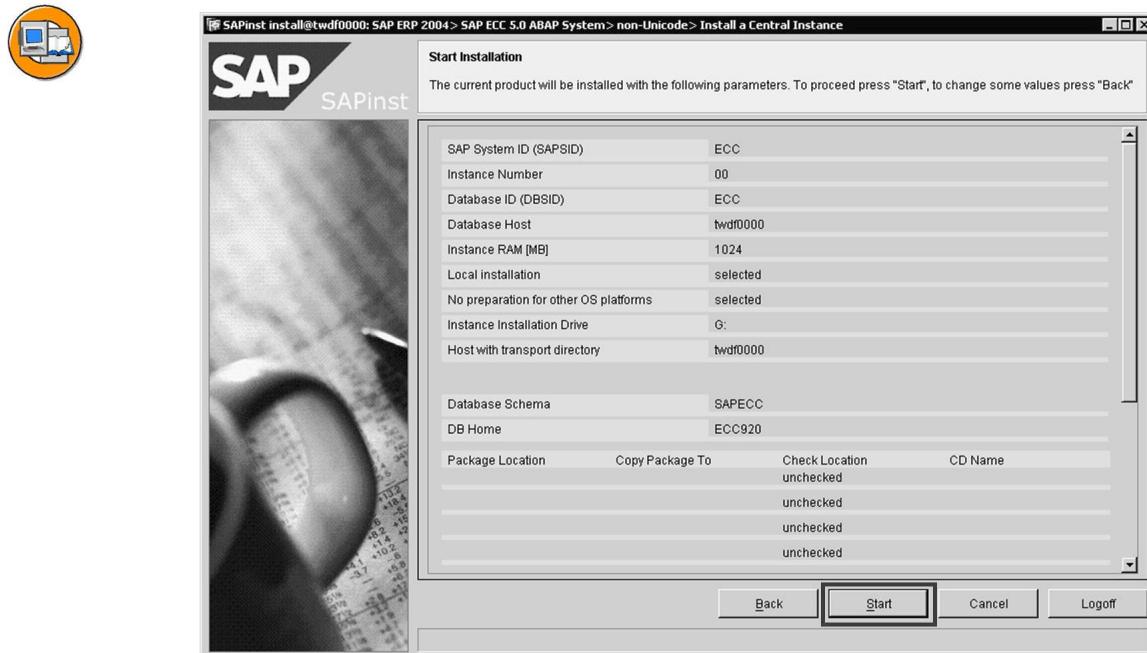


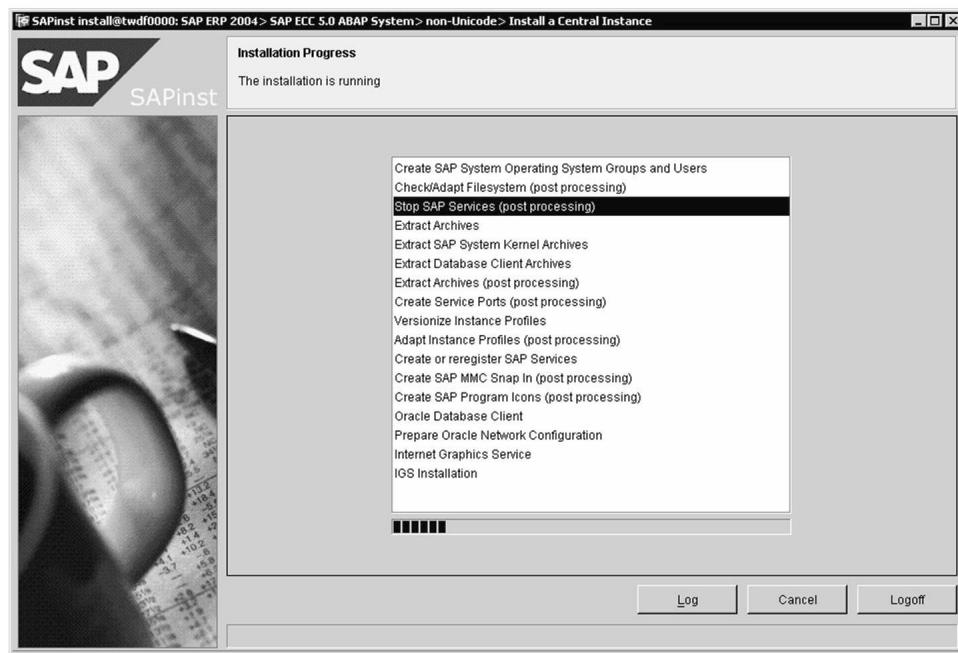
Figure 89: Location of IGS\_SOFT Directory

As of SAP Web AS 6.40, the installation of the SAP Internet Graphic Server (IGS) is integrated into the installation of SAP Web Application Server 6.40. Enter the location of the IGS\_SOFT directory. This can be found on the SAP Web AS JAVA DVD in the directory \IGS\IGS\_SOFT \



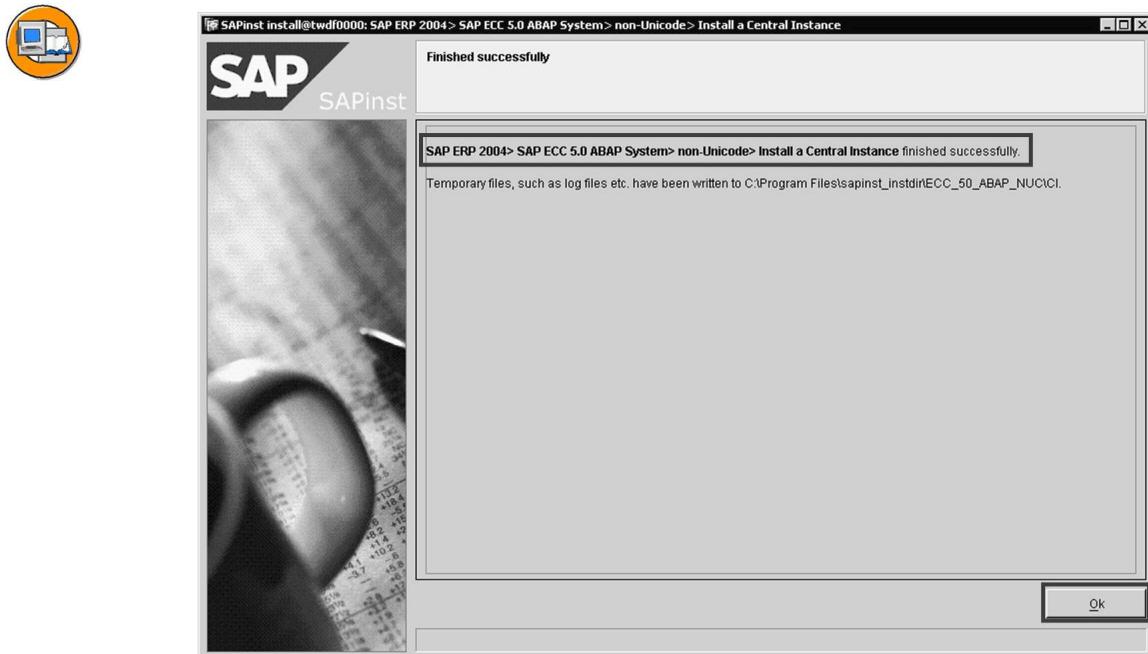
**Figure 90: Central Instance Summary**

Check your input in the *Summary* screen and start the installation.



**Figure 91: Installation Progress**

SAPinst displays the progress of the installation by highlighting the currently active installation phase.



**Figure 92: The Central Instance Installation Finished Successfully**

**Congratulations!!** You have just installed a Central Instance





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## Exercise 5: Install a Central Instance

Exercise Duration: 10 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install a central instance

### Business Example

ABC is a petrochemical company that wants to install SAP ERP Central Component (SAP ECC). You, as the system administrator of ABC Limited, have installed SAPinst. Now, you need to install a central instance.

#### Task:

Install the central instance on the server you are using for the training, for example, on twdf0###.

1. On the *Welcome* screen, select *Install a Central Instance* to start the installation.
2. Install the central instance. Use the following information to perform the installation:



**Note:** Always use drive G: to install the software.

You can select the following parameters freely with respect to the restrictions mentioned in the training material:

Parameter	Value or Description
SAP System ID	
Instance number	
Password for user <sid>adm	
Password for user SAPService<SID>	

Make a note of the parameters because they are needed later on.

Select the values for the following parameters as indicated:

*Continued on next page*

Parameter	Value or Description
Instance to install	Central Instance
Database System ID	= SAP System ID
Database Host	Host name of your server twdf####
Domain Information for the SAP System	Local Installation
Instance RAM	1024MB
Drive for SAP System directory	G:
Host with Transport Directory	Host name of your server twdf####
Kernel CD	G:\SETUP\SAP_Kernel_DVD_ORA
Message port	3600 + central instance number
RDBMS CD	G:\SETUP\RDBMS_ORA

## Solution 5: Install a Central Instance

### Task:

Install the central instance on the server you are using for the training, for example, on twdf0###.

1. On the *Welcome* screen, select *Install a Central Instance* to start the installation.
  - a) On the *Welcome* screen, select *Install a Central Instance* to start the installation.
- Follow the exercise description.

2. Install the central instance. Use the following information to perform the installation:



**Note:** Always use drive G: to install the software.

You can select the following parameters freely with respect to the restrictions mentioned in the training material:

Parameter	Value or Description
SAP System ID	
Instance number	
Password for user <sid>adm	
Password for user SAPService<SID>	

Make a note of the parameters because they are needed later on.

Select the values for the following parameters as indicated:

Parameter	Value or Description
Instance to install	Central Instance
Database System ID	= SAP System ID
Database Host	Host name of your server twdf#####
Domain Information for the SAP System	Local Installation
Instance RAM	1024MB

*Continued on next page*

Drive for SAP System directory	G:
Host with Transport Directory	Host name of your server twdf#####
Kernel CD	G:\SETUP\SAP_Kernel_DVD_ORA
Message port	3600 + central instance number
RDBMS CD	G:\SETUP\RDBMS_ORA

- a) Install the central instance.

Proceed as described in the lesson.



## Lesson Summary

You should now be able to:

- Install a central instance

## Lesson: Database Instance Installation



Lesson Duration: 60 Minutes

### Lesson Overview

This lesson explains how to prepare and install a database instance.



### Lesson Objectives

After completing this lesson, you will be able to:

- Install the database instance



In this lesson, explain how to install a database instance.

The exercise lasts about 20 minutes on the first day and 15 minutes on the second day.



**Note:** The database instance install takes around 3.5hrs. Participants should start the installation on the first day and the last screen should be “Installation Progress; The installation is running”. They should finish the database installation on the second day.

### Business Example

ABC Limited, a petrochemical company, uses SAP to manage its data. The company now wants to install the latest version of SAP , SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. You, as the system administrator of ABC, need to install SAP ERP Central Component. You have already installed SAPinst, a central instance and a dialog instance. Now you need to install a database instance.

### Database Instance Installation



#### System Demo

Continue with the installation of the database. Follow the content in the course material.



**Note:** The installation of the database lasts for some hours. You should start the installation on the first day and the last screen should be “Installation Progress; The installation is running”.

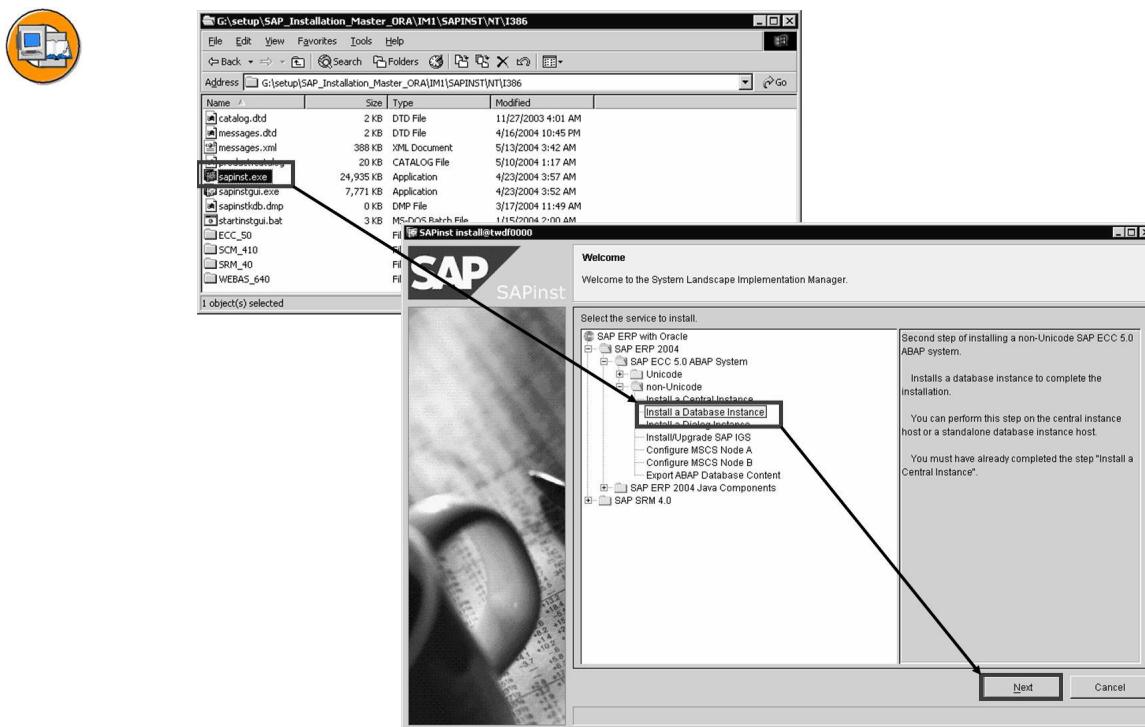
You should finish the database installation on the second day.

Known problems:

When SAPinst does nothing over a long time, while it takes only a short time for the other learners, close all SAPinst screens and restart SAPinst.

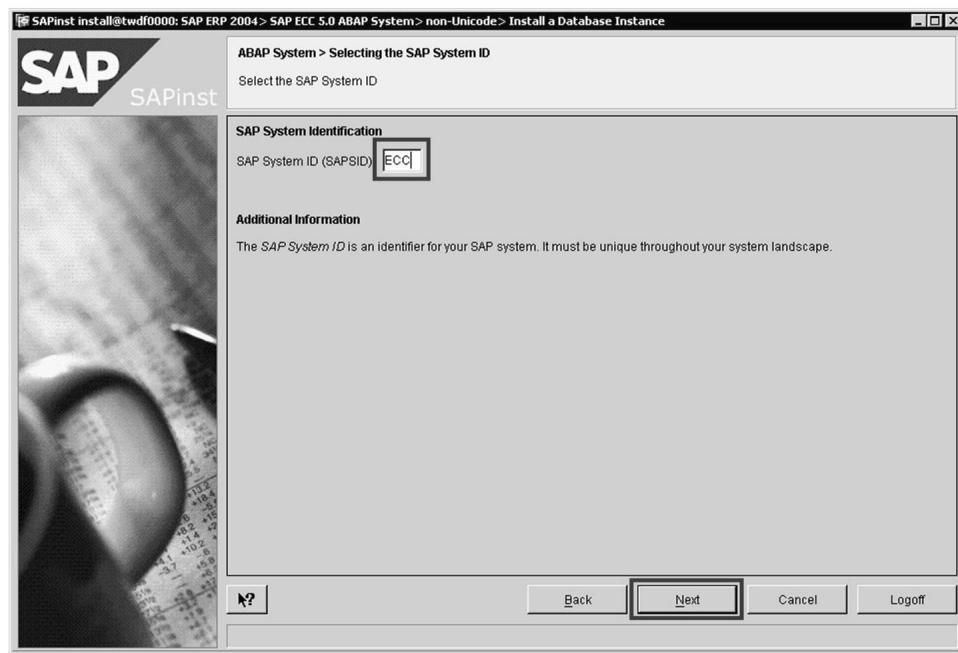
Learners should finish the database installation on the second day.

Start sapinst.exe as explained in the Introducing SAPinst lesson. The SAPinst *Welcome* screen displays the different installation components, such as SAP ERP 2004 or SAP SRM 4.0.



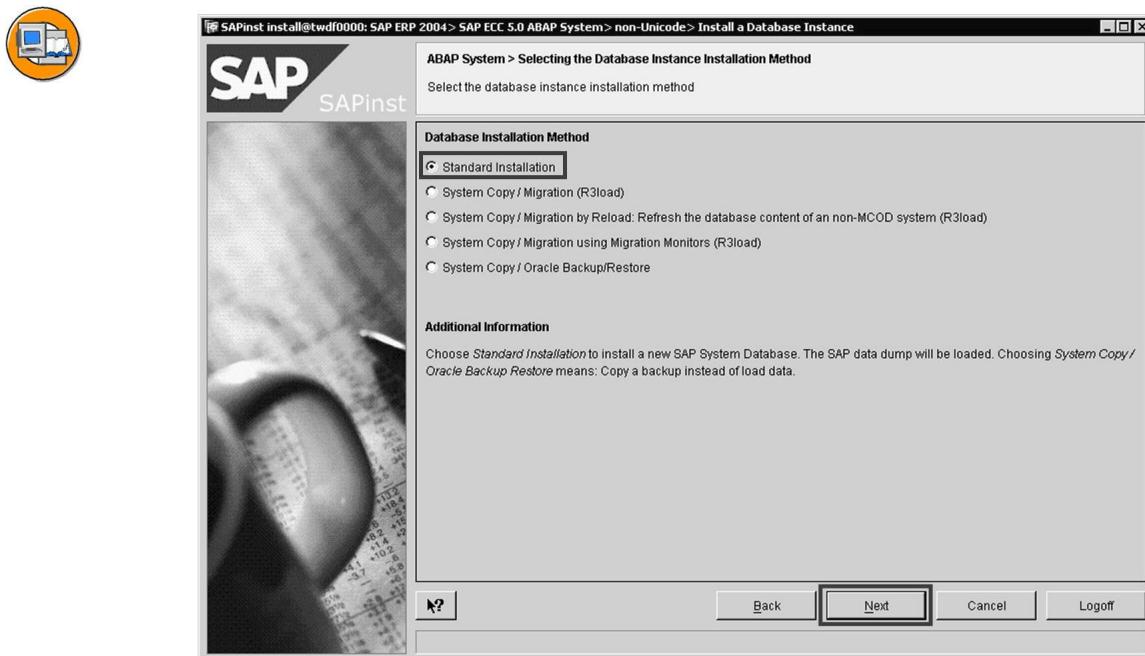
**Figure 93: Start sapinst.exe**

To start installing the Central Instance of a non-Unicode SAP ECC 5.0 ABAP system, follow the path *SAP ERP with Oracle* → *SAP ERP 2004* → *SAP ECC 5.0 ABAP System* → *non-Unicode* → *Install a Database Instance*.



**Figure 94: Enter SAP SID**

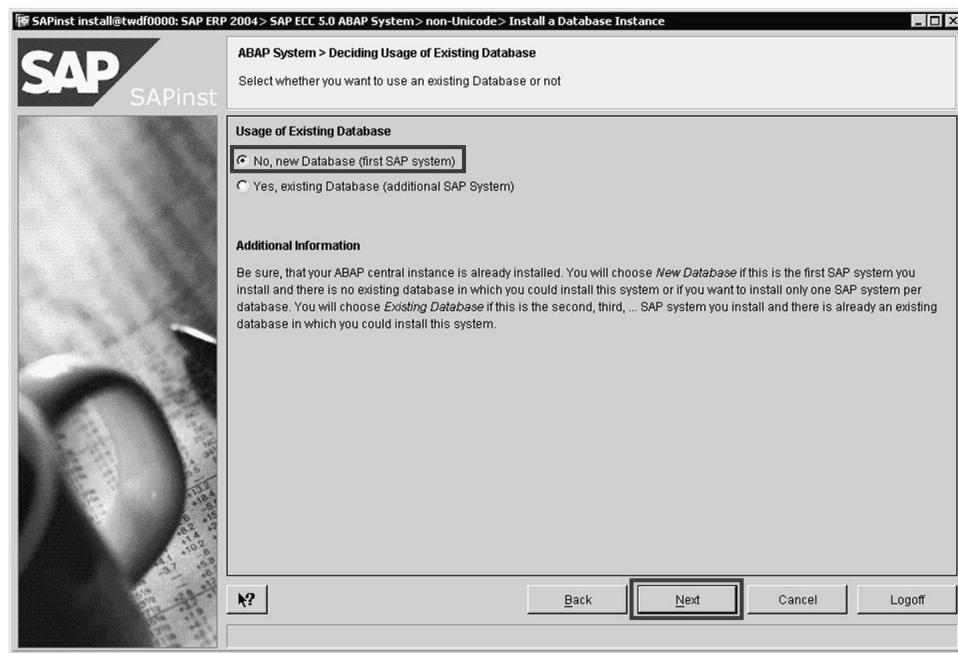
Enter the SAP system ID that you used during the Central Instance installation.



**Figure 95: Select Database Installation Method**

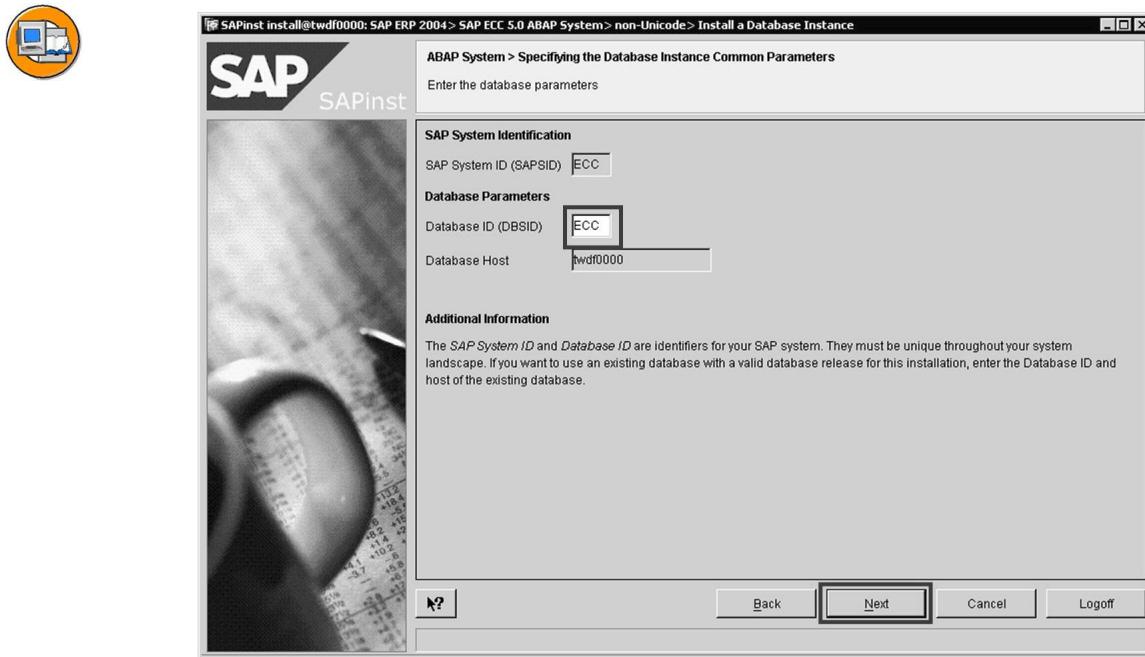
In the *Database Instance installation method* screen there are several options displayed to install or copy/migrate a SAP system.

If you want to copy or migrate an existing SAP system, select one of the *System Copy/Migration* options. For more information on the different copy/migration options, see the documentation SAP NetWeaver '04 Installation Guide Homogeneous and Heterogeneous System Copy for SAP Systems Based on SAP Web Application Server 6.40. This installation guide can be found on the SAP Service Marketplace (<http://service.sap.com/instguides>). For a standard SAP ECC installation, choose Standard Installation.



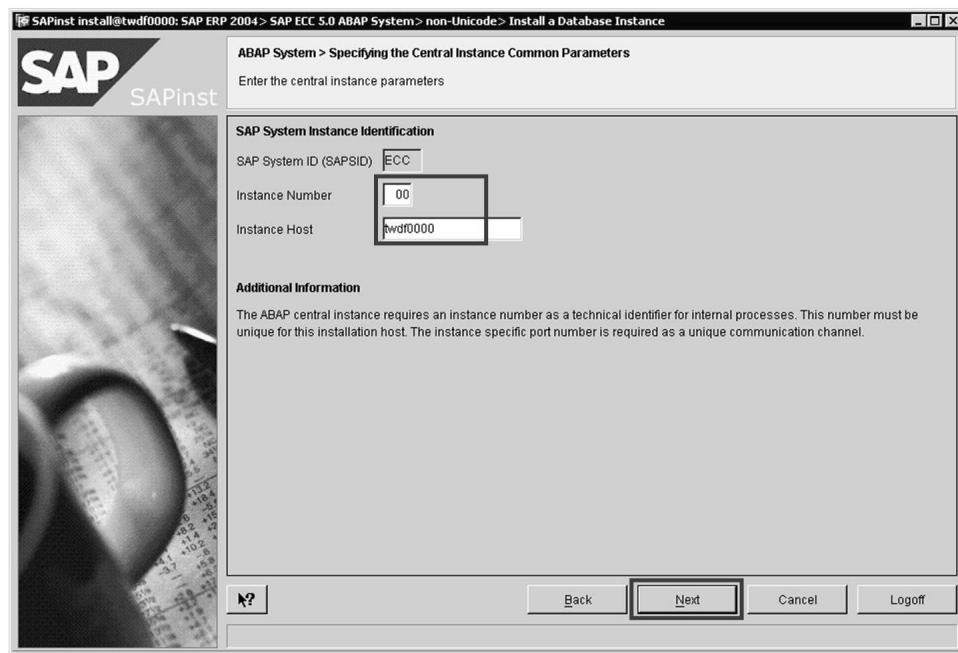
**Figure 96: Use Existing Database**

If you install a system on an existing database (MCOD), select *Yes, existing Database (additional SAP System)*. In all other cases, select *No, new Database (first SAP system)*.



**Figure 97: Database Parameters**

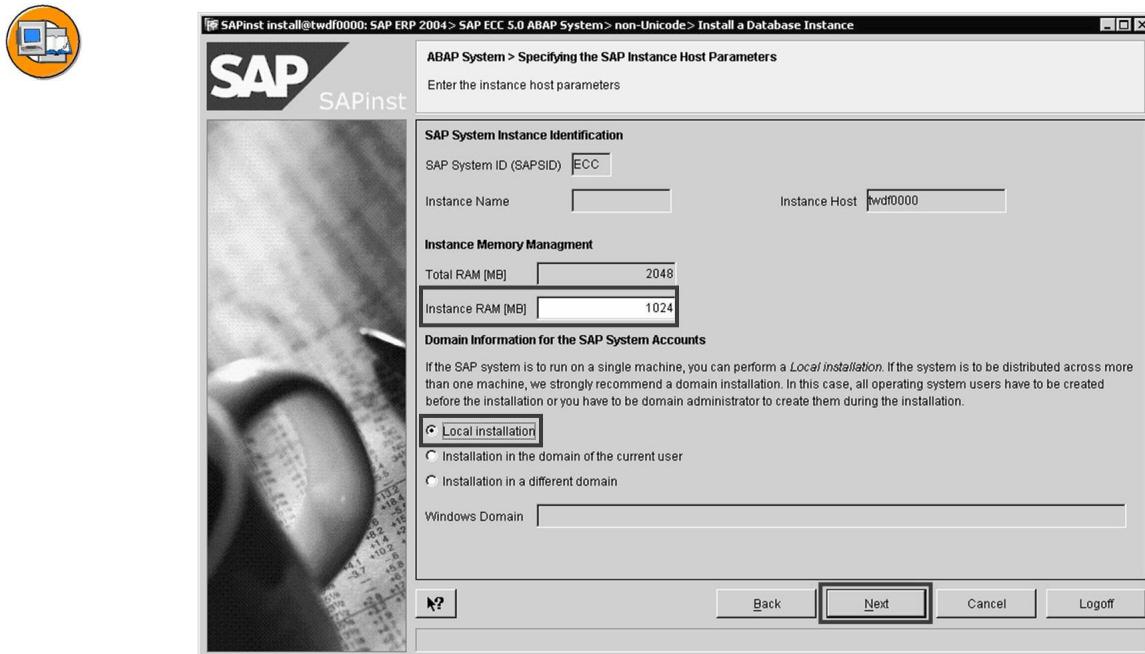
Enter exactly the same ID of the database instance <DBSID> that you entered during the central instance installation.



**Figure 98: Enter Central Instance Parameters**

Enter exactly the same instance number that you entered during the Central Instance installation. To find out the number, look under the `\usr\sap\<SAPSID>\DVEBMGS<##>` SAP directory. The `<##>` value is the number assigned to the Central Instance.

Enter exactly the same name of the Central Instance host that you entered during the Central Instance installation.



**Figure 99: Windows Domain Information and Memory**

Enter exactly the same memory value as that you entered during the Central Instance installation.

For installations on the Windows operating system, use the following information:

- Domain information for SAP system accounts:
  - Local installation: All Windows accounts and user information is stored locally. Perform a local installation for an SAP system to run on a single host. Authorization problems can occur for a distributed system.
  - Installation in a different domain.
  - Installation in the domain of the current user.
- In a domain installation, user information is stored centrally on the domain controller and is accessible from all hosts in the system. If the system is to be distributed across multiple computers, SAP strongly recommends a domain installation.



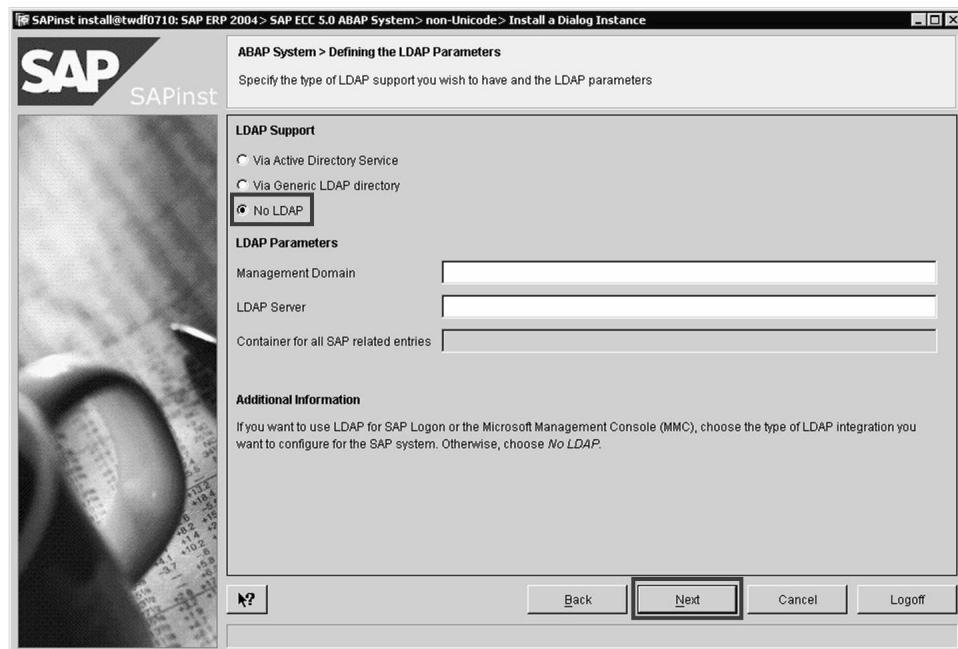
### LDAP (Lightweight Directory Access Protocol)

If you choose LDAP support, the installation routine performs some necessary LDAP configuration changes for an existing directory server. The installation of a directory server is not a part of SAP ECC installation. The LDAP configuration here is used to store SAP logon and the Microsoft Management Console (MMC) information. This has nothing to do with the LDAP chapter in the ADM102!!!



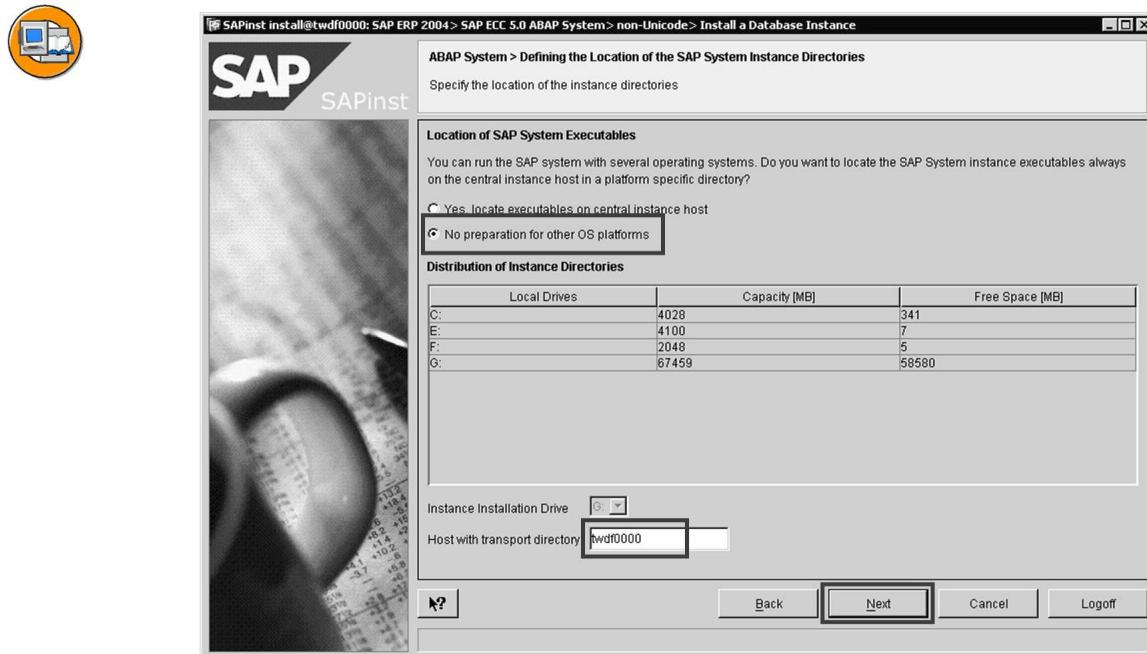
**Caution:** If you selected *Local Installation* in the previous screen then the *LDAP Configuration* screen will **NOT** appear.

Select *No LDAP* if this screen appears.



**Figure 100: LDAP Configuration**

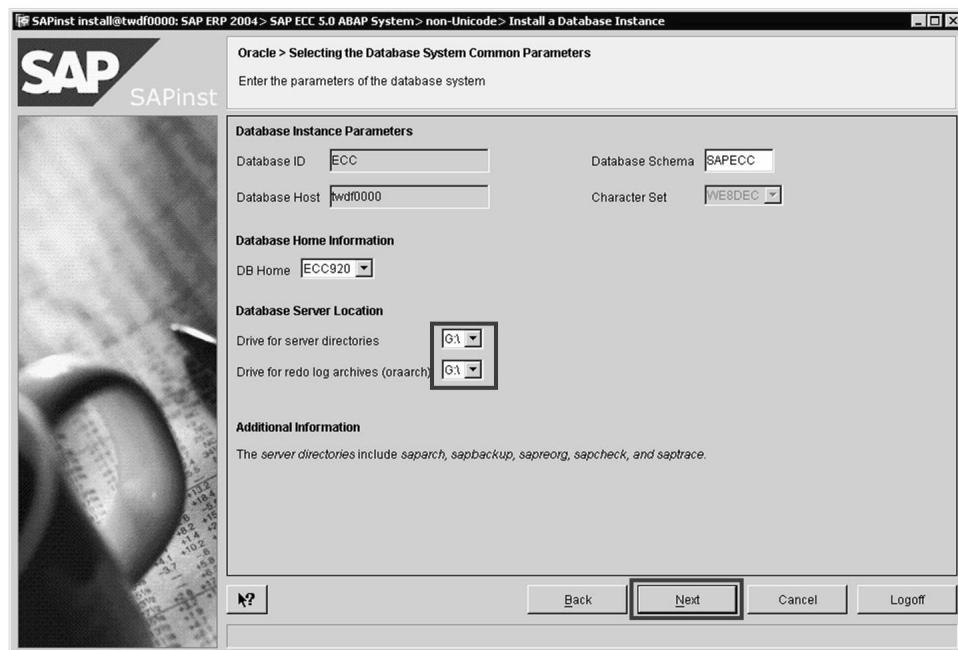
Select *No LDAP* if this screen appears.



**Figure 101: Check Instance Installation Drive and Host for Transport Directory**

In the *Host with transport directory* field, enter the name of the host where the central transport directory is located.

Check if the name of the host where the \usr\sap\trans is located is correct.



**Figure 102: Enter Database Instance Parameters**

Enter the name of the database schema (SAP<SCHEMA\_ID>, whereas <SCHEMA\_ID> must be exactly three characters long).

Enter the name of the Oracle Home. In an SAP environment this is normally <drive letter>:\oracle\<SID>\920

Enter the drive for the Database Server directory and the drive for the Oracle redo log archives (oraarch).



**Caution:** The redo log archive should **NOT** be placed on the same drive as the directories sapbackup, sapreorg, sapdata<x> etc. In a **productive system**, this should **NEVER** be the case.

During the course, you select for both the drives, the G: drive.

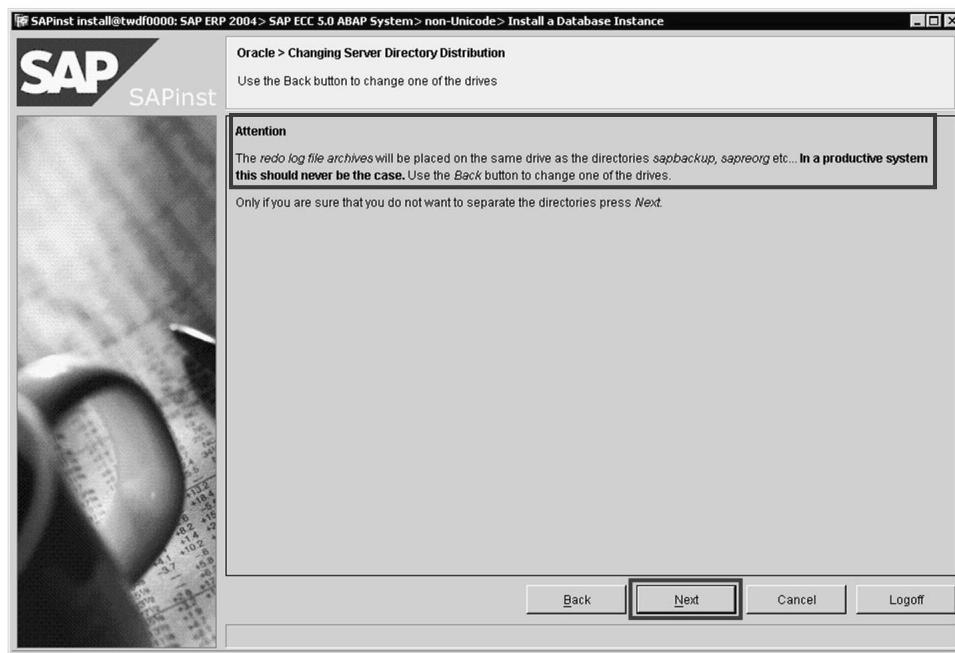
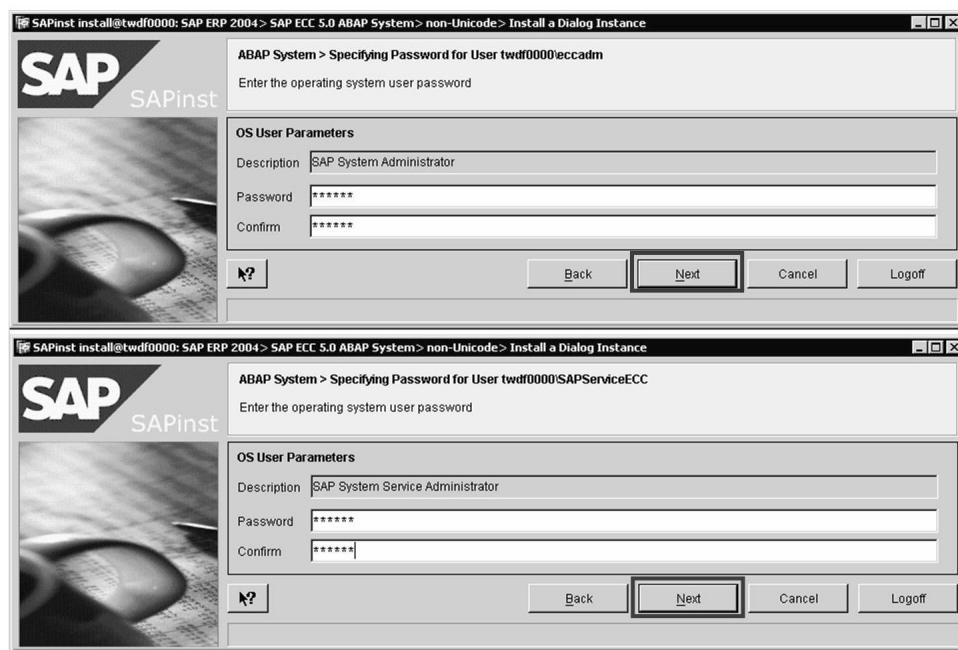


Figure 103: Redo Log Files on Same Drive as sapbackup



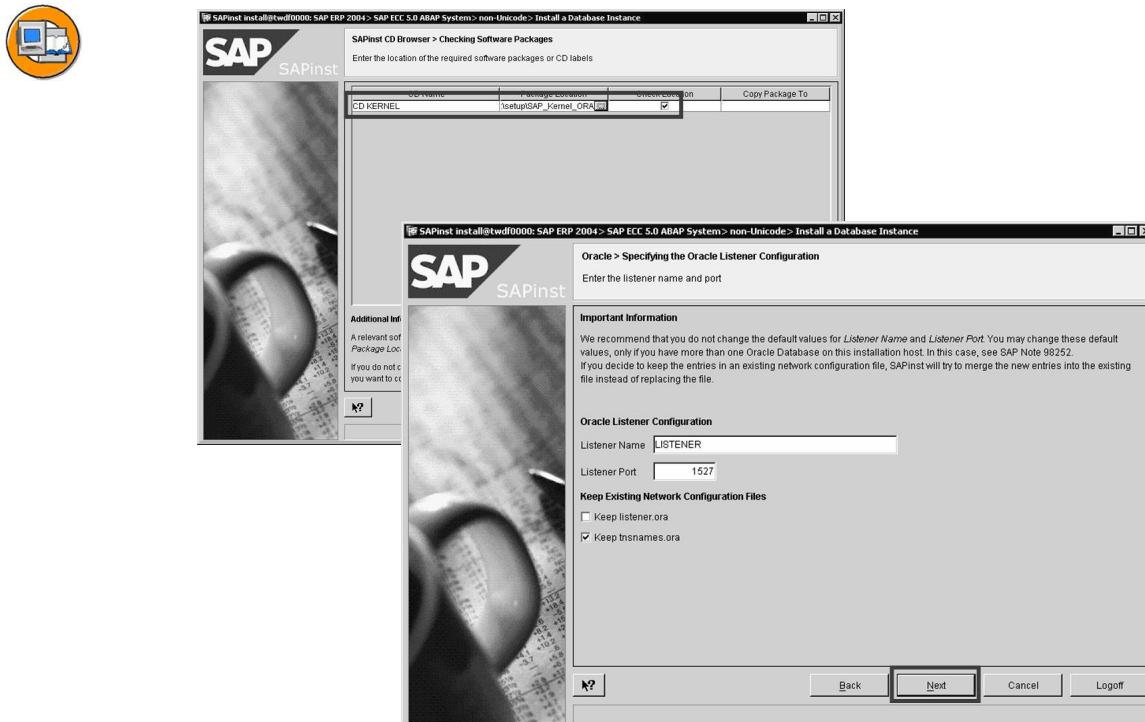
**Caution:** This screen only appears if you selected the same drive for the redo log archives and the directories sapbackup, sapreorg etc..



**Figure 104: Enter Passwords for Operating System Users**

Enter and confirm the password for the SAP system administrator <sapsid>adm.

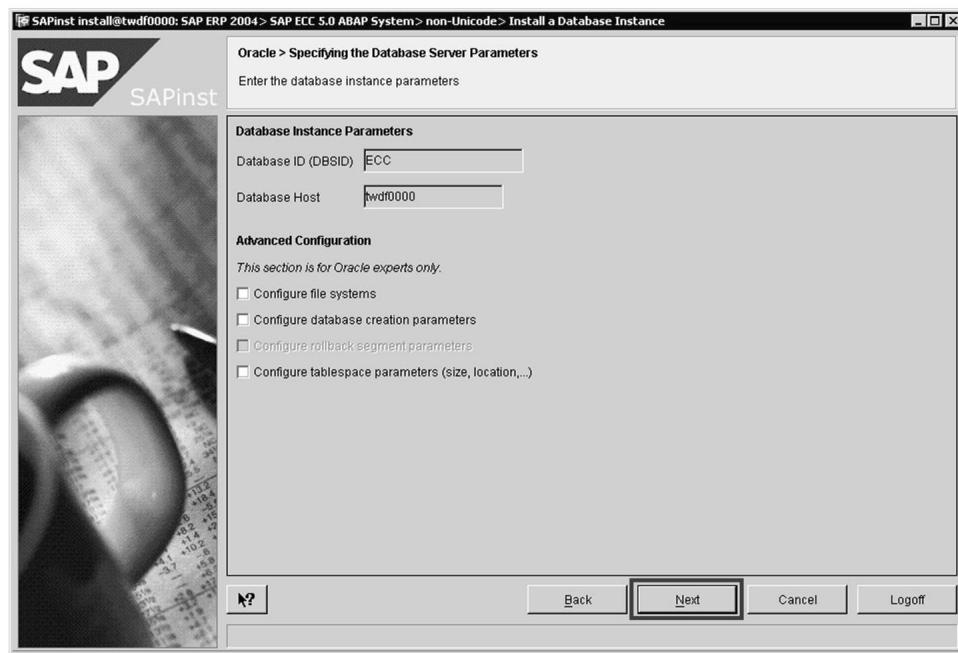
Enter and confirm the password for the SAP system administrator SAPService<sapsid>.



**Figure 105: Select SAP Kernel CD and Check Oracle Listener Port Number**

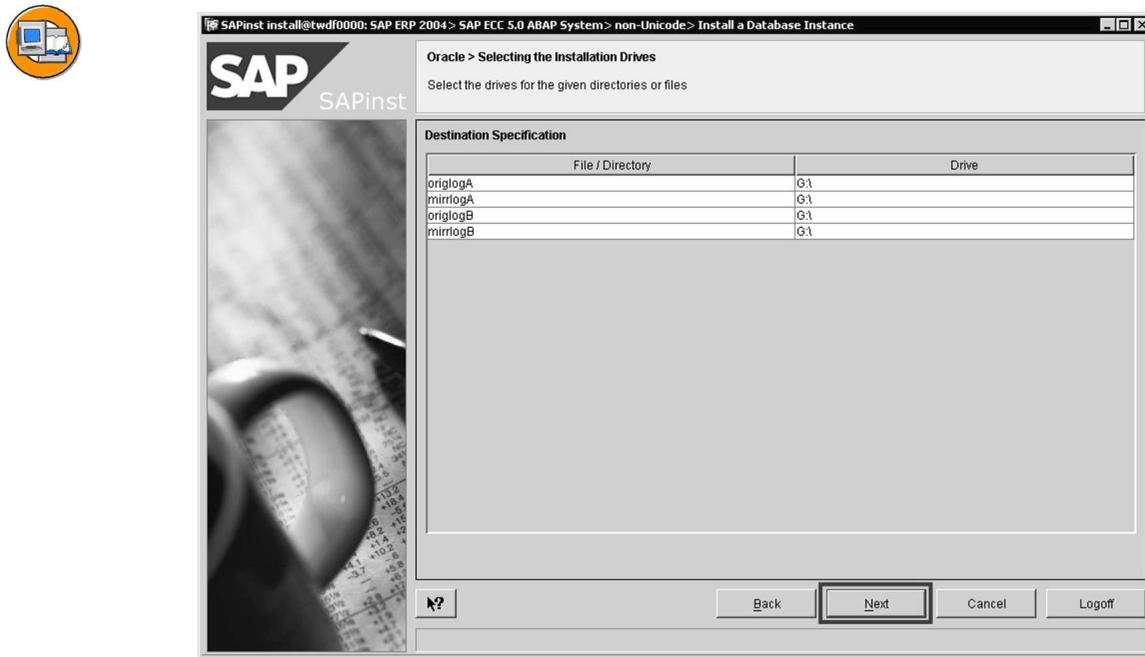
Use the CD browse window to select the location of the SAP Kernel CD.

Check the name and port number of the Oracle Listener. The default values should not be changed.



**Figure 106: Database Parameter Expert Mode**

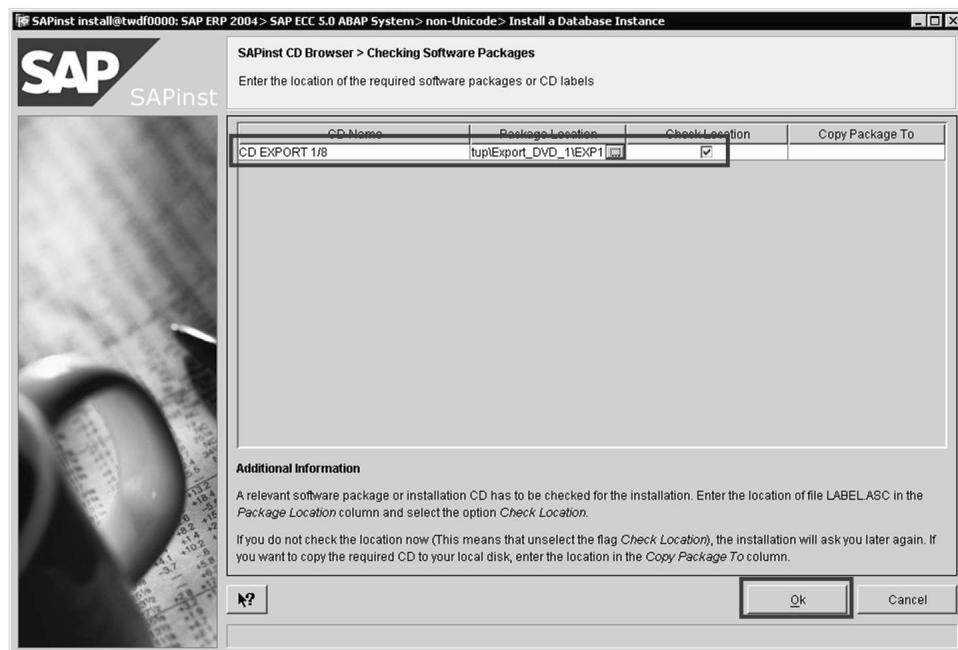
If you want to use the SAP default values for the Oracle Database then select *Next*. If you want to change or configure the file system, database creation parameters or the size/location of the table spaces then mark the appropriate checkbox.



**Figure 107: Select the Location of the Redo Log Files**

Enter the drive letter for the location of the online redo log files. For performance reasons, you should **NOT** place the origlogA and origlogB and mirrlogA and mirrlogB on the same drive.

During the course, you select the G: drive for origlogA, origlogB, mirrlogA, and mirrlogB.

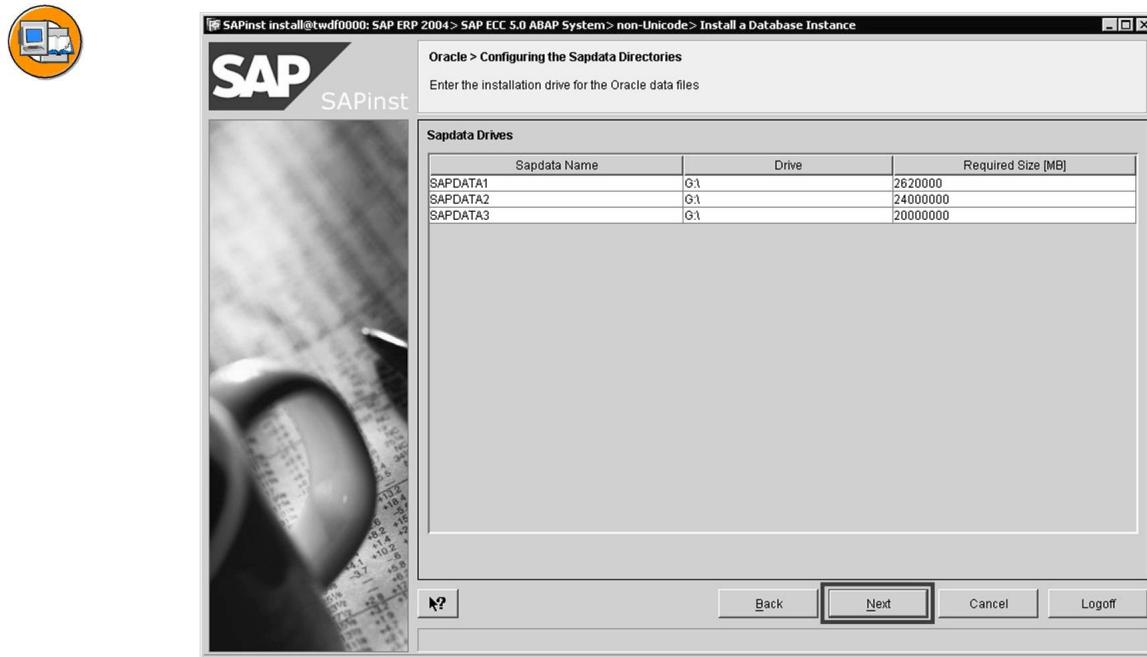


**Figure 108: Select Location Export CD 1**

Use the CD browse window to select the location of the Export CD 1. The SAPinst tool will automatically find the Export CD 2 to 6 in the same path.

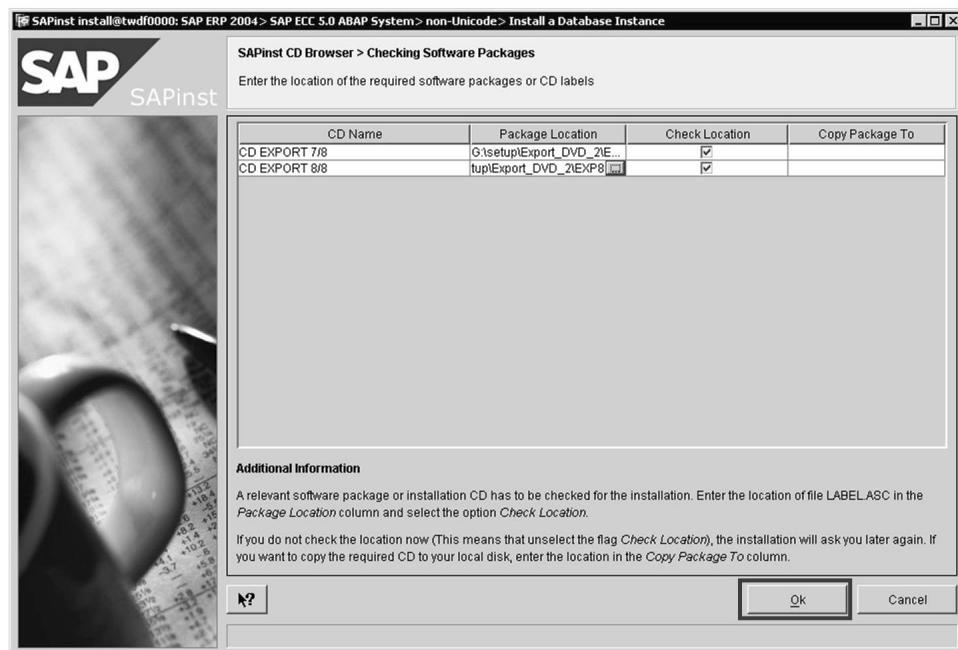


SAP delivers the export CDs on two DVDs. The first DVD contains export CD 1 to 6 and the second DVD contains export CD 7 and 8. SAPinst will automatically detect export CD 2 to 6 when you specify the path to export CD1. SAPinst will prompt you later during the installation for Export CD 7 and 8.



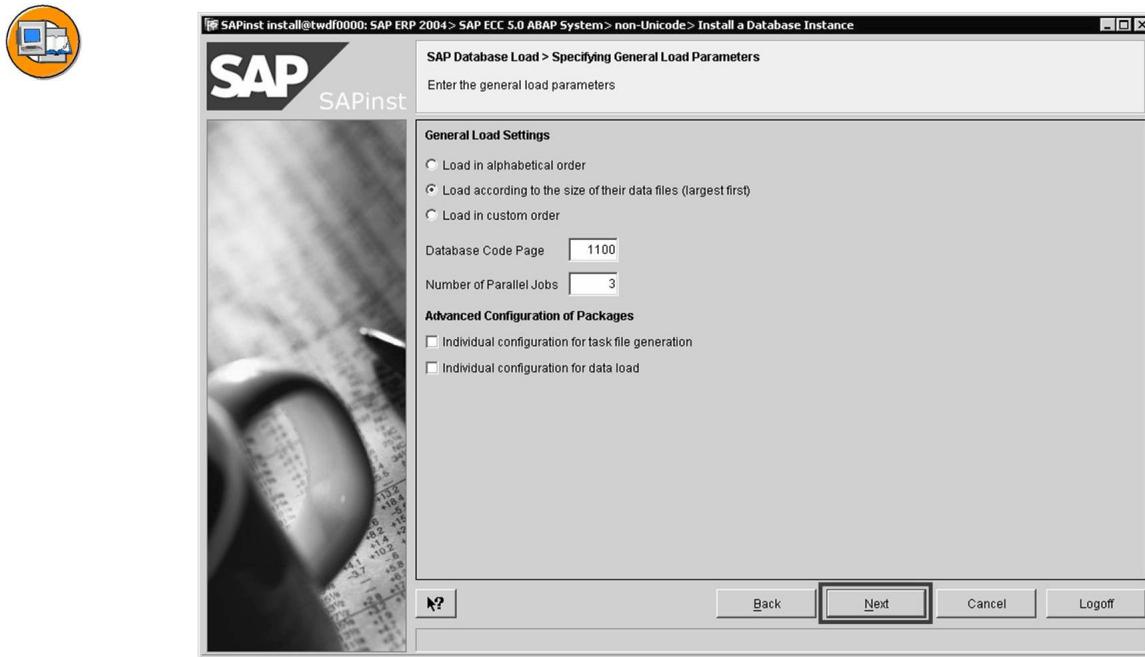
**Figure 109: Database Datafile Summary**

SAPinst displays a summary of the size and location of the tablespaces. If you didn't select the expert mode to configure the file system, database creation parameters or change the size/location of the table spaces then this screen will display the default values. If you changed some settings, please check if the displayed information is correct.



**Figure 110: Select Location Export CD 7 and 8**

Use the CD browse window to select the location of the Export CD 7 and Export CD 8

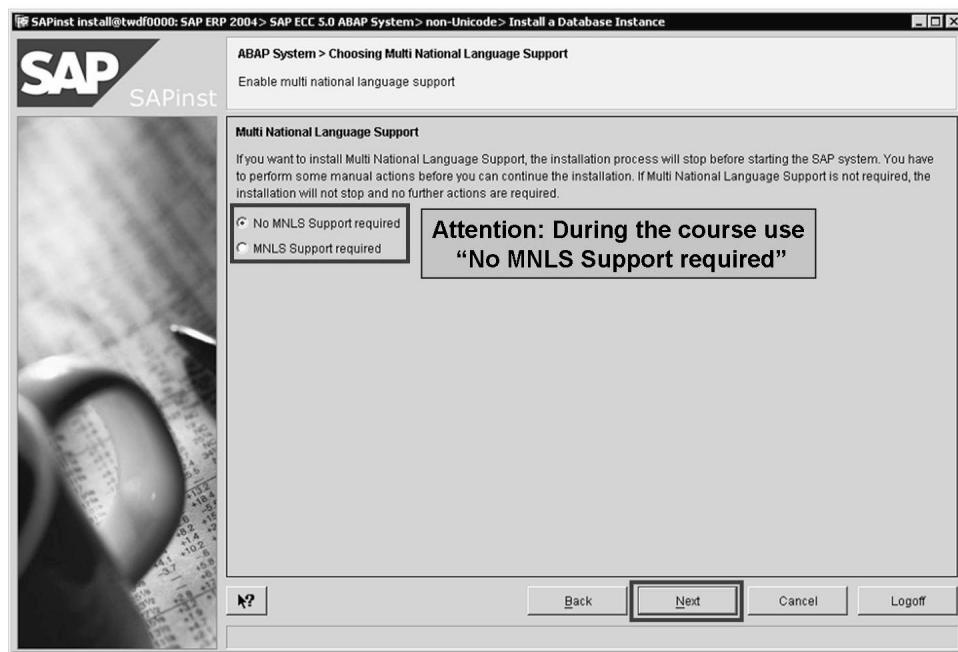


**Figure 111: Enter Database Load Parameters**

The default settings are in most cases suitable and don't have to be changed.

Select how you want to load packages and the database code page. Enter how many parallel jobs you want to run. For the *Number of parallel jobs*, SAP recommends that you enter the number of processors of the server.

Only certified database administrators should perform advanced database configuration. SAP recommends that you use the default settings, if possible.



**Figure 112: Select If MNLS is Required**

You need an SAP system with multinational language support if you plan to work with multiple code pages in your SAP system.



**Caution:** Always select *No MNLS Support required*, even if you want to use multinational language support.

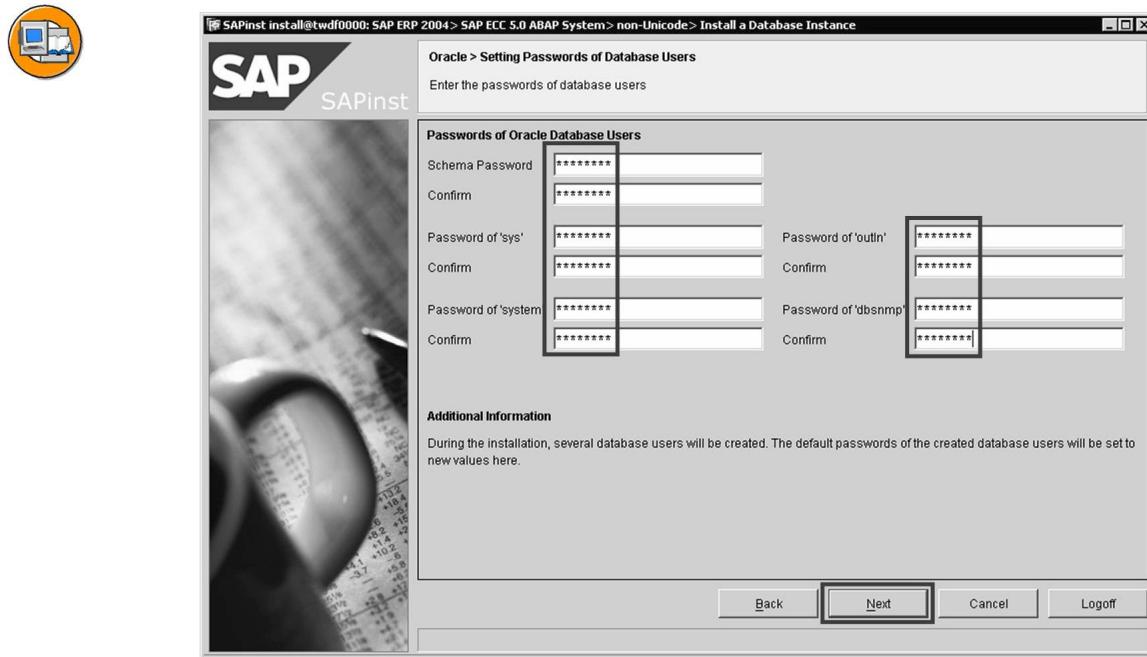
The necessary steps will be done completely afterwards the installation. If you need multinational language support read SAP note 73606 and 42305 for more information.



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In the final ECC installation (SR1) the MNLS screen will not appear, because the necessary steps should be done after the installation. The above given notes contain more information.

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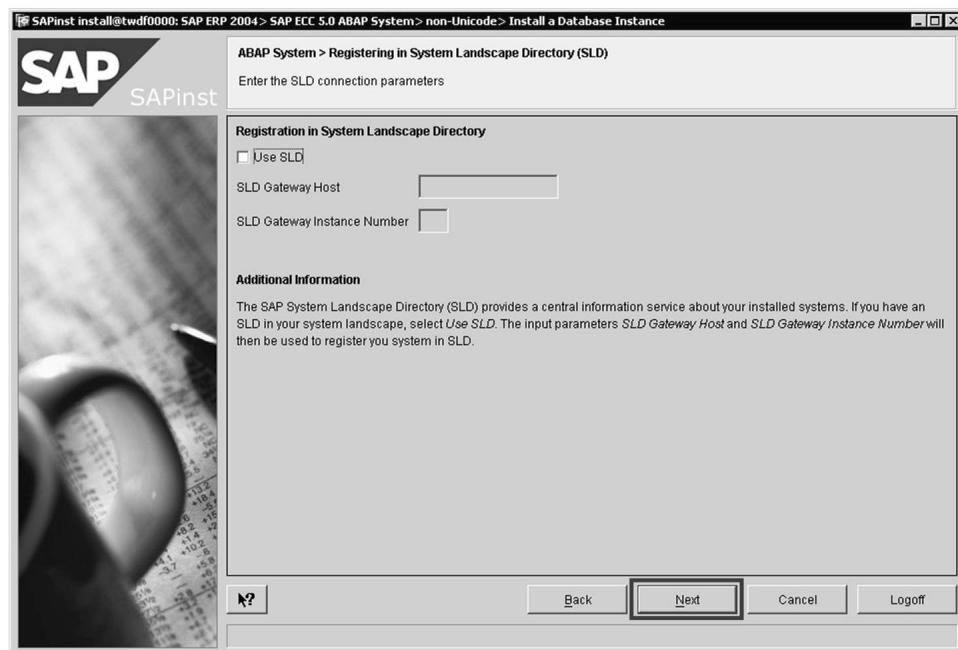


**Figure 113: Enter Password for All Database Users**

During the installation of the database, several database users will be created. Please enter the passwords for these users.

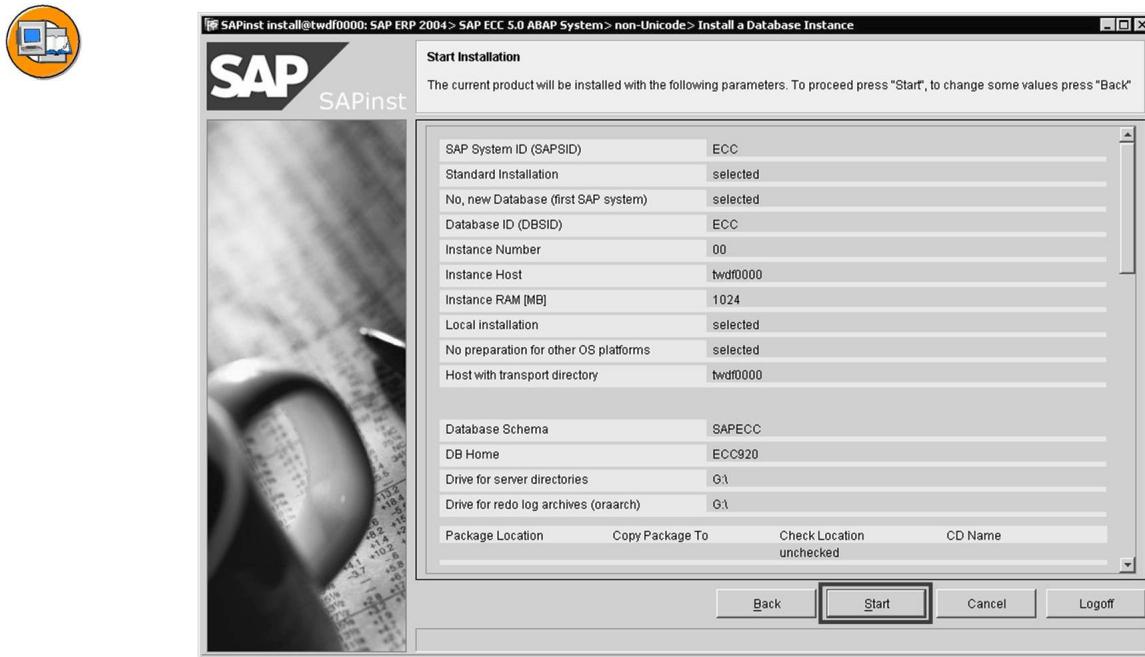


**Hint:** The minimum password length is 8 characters.



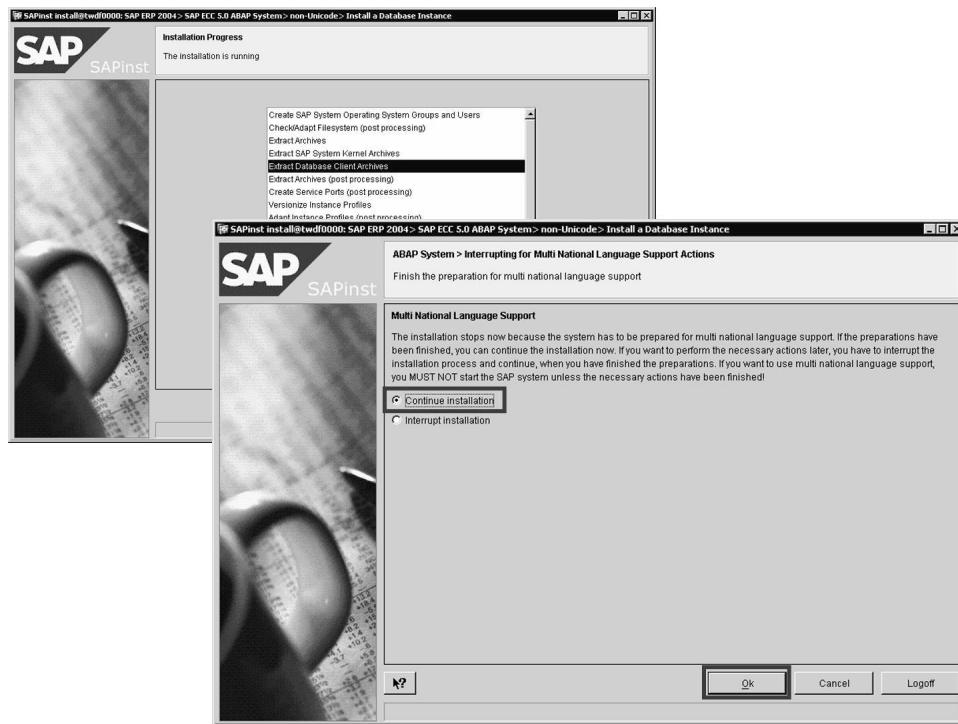
**Figure 114: Enter SLD Parameters**

Specify if you want to use a SAP System Landscape Directory (SLD). The SAP SLD provides a central information service where information about your installed systems is stored. SAP recommends that you should setup a SLD. If you do not have a SLD installed yet then uncheck the *Use SLD* box.



**Figure 115: Database Instance Installation Summary**

Check your input in the *Summary* screen and start the installation.



**Figure 116: Installation Progress**

SAPinst displays the progress of the installation by highlighting the currently active installation phase.

If you have chosen *MNLS Support required* in the input phase, this screen will come up. Always choose *Continue Installation*, even if you want to use multinational language support.

The necessary steps will be done completely afterwards the installation. If you need multinational language support read SAP note 73606 and 42305 for more information.



In the final ECC installation (SR1) the MNLS screen will not appear, because the necessary steps should be done after the installation. The above given notes contain more information.

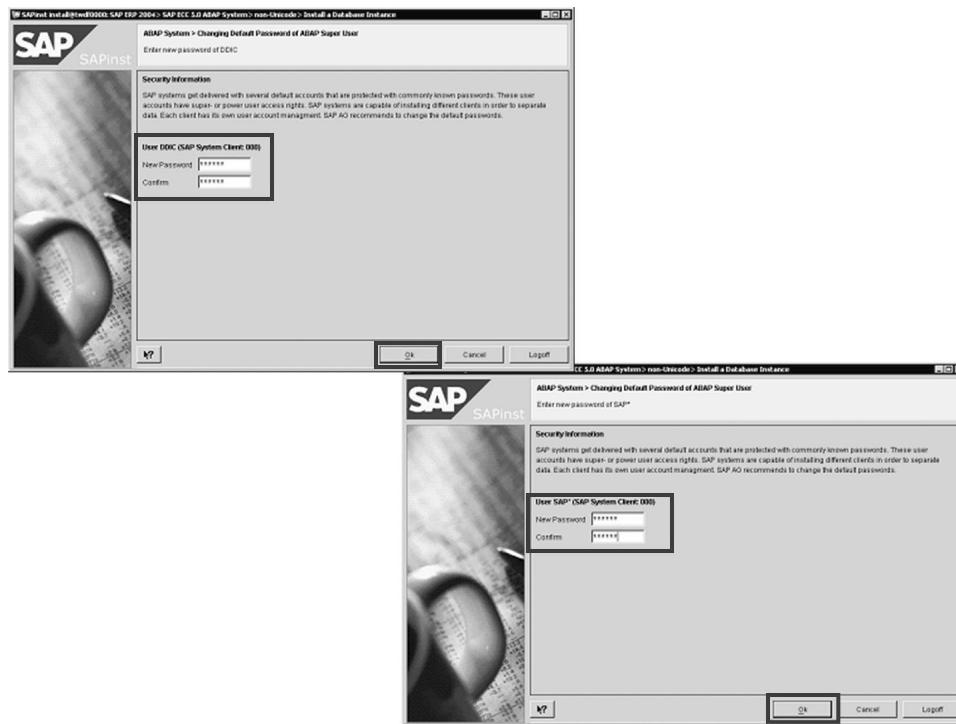


Figure 117: Enter DDIC and SAP\* Password

Enter the passwords for the users DDIC and SAP\* in client 000.



**Caution:** The passwords you enter for the users DDIC and SAP\* are only valid for client 000. The clients 001 and 066 still have the SAP default password for these users.

- SAP\* - 06071992 (client 001 and 066)
- DDIC - 19920706 (client 001 only)

You will be asked for a new password as soon as you log on to the SAP system using these users in client 001 and 066.



**Figure 118: Database Instance Installation Finished Successfully**

**Congratulations!!** You have just installed a Database Instance.

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## Exercise 6: Install Database Instance

Exercise Duration: 35 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install a database instance

### Business Example

You are the system administrator of ABC Limited, a petrochemical company. You have to install SAP ERP Central Component (SAP ECC). You have already installed SAPinst, a central and a dialog instance. Now you need to install a database instance.

#### Task:

Install the database instance on the server you are using for the training, for example, on twdf0###.

1. Restart SAPinst.
2. On the welcome screen, select *Install a Database Instance* to start the installation.
3. Install the database instance. Use the following information to perform the installation:



**Note:** Always use drive G: to install the software.

You can select the following parameters freely with respect to the restrictions mentioned in the training material:

Password for user DDIC (client 000)	
Password for user SAP* (client 000)	

Make a note of the parameters because they are needed later on.

Select the values for the following parameters as indicated:

*Continued on next page*

Parameter	Value
SAP System ID	Same <SID> as for central instance installation
Instance to install	Database Instance
Database Installation Method	Select Standard Installation
Database Installation Type	Install (first) SAP system into a new database
Database System ID	= SAP System ID
Instance number	Enter instance number of previously installed central instance
Instance Host	Host name of your server twdf####
Domain Information for the SAP System accounts	Select Local Installation
Instance RAM	800MB (= RAM for central Instance)
Host with Transport Directory	Host name of your server twdf####
Database Schema	SAP<SID>
DB Home	<SID>920
Password for user <sid>adm	Same password you used for central instance installation
Password for user SAPService<SID>	Same password you used for central instance installation
Kernel CD	G:\SETUP\SAP_Kernel_DVD_ORA
RDBMS CD	G:\SETUP\RDBMS_ORA
Export CDs (1 to 6)	G:\SETUP\Export_DVD_1
Drive for the client software installation	G:
Export CDs (7 - 8)	G:\SETUP\Export_DVD_2
Prepare multinational language support	Choose <i>Continue installation</i>

## Solution 6: Install Database Instance

### Task:

Install the database instance on the server you are using for the training, for example, on twdf0###.

1. Restart SAPinst.
  - a) Proceed as described in the lesson.
2. On the welcome screen, select *Install a Database Instance* to start the installation.
  - a) On the welcome screen, select *Install a Database Instance* to start the installation.

Follow the exercise description.

3. Install the database instance. Use the following information to perform the installation:



**Note:** Always use drive G: to install the software.

You can select the following parameters freely with respect to the restrictions mentioned in the training material:

Password for user DDIC (client 000)	
Password for user SAP* (client 000)	

Make a note of the parameters because they are needed later on.

Select the values for the following parameters as indicated:

Parameter	Value
SAP System ID	Same <SID> as for central instance installation
Instance to install	Database Instance
Database Installation Method	Select Standard Installation
Database Installation Type	Install (first) SAP system into a new database
Database System ID	= SAP System ID

*Continued on next page*

Instance number	Enter instance number of previously installed central instance
Instance Host	Host name of your server twdf#####
Domain Information for the SAP System accounts	Select Local Installation
Instance RAM	800MB (= RAM for central Instance)
Host with Transport Directory	Host name of your server twdf#####
Database Schema	SAP<SID>
DB Home	<SID>920
Password for user <sid>adm	Same password you used for central instance installation
Password for user SAPService<SID>	Same password you used for central instance installation
Kernel CD	G:\SETUP\SAP_Kernel_DVD_ORA
RDBMS CD	G:\SETUP\RDBMS_ORA
Export CDs (1 to 6)	G:\SETUP\Export_DVD_1
Drive for the client software installation	G:
Export CDs (7 - 8)	G:\SETUP\Export_DVD_2
Prepare multinational language support	Choose <i>Continue installation</i>

- a) Install the database instance.

Proceed as described in the lesson.



## Lesson Summary

You should now be able to:

- Install the database instance

## Lesson: Dialog Instance Installation



Lesson Duration: 20 Minutes

### Lesson Overview

This lesson describes how to install a ABAP Dialog Instance.



### Lesson Objectives

After completing this lesson, you will be able to:

- Install a ABAP Dialog Instance



In this lesson, explain how to install the ABAP Dialog Instance.

### Business Example

ABC Limited, a petrochemical company, uses SAP to manage its data. The company plans to install the latest version of SAP , SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component . As the system administrator of ABC, you need to install SAP ERP Central Component . You have installed SAPinst and the ABAP Central Instance. Now you need to install the ABAP Dialog Instance.



### Installing Local Executables with Automatic Adjustment

This section describes how to store executables locally for an SAP instance and automatically keep them up-to-date with the central copies in a Unix environment.

Ensure that each host server that will use local SAP executables has several hundred megabytes (depending on the SAP release) of free disk space for the executables.

### Procedure

Carry out the following actions using the user <sid>adm

1. Change the name of the standard directory containing the variables from /usr/sap/<SID>/SYS/exe/run to /usr/sap/<SID>/SYS/exe/ctrun by entering the command:  
`mv /usr/sap/<SID>/SYS/exe/run sr/sap/<SID>/SYS/exe/ctrun` where <SID> is the SAP SID of your SAP system.
2. Ensure that the central SAP executables directory /sapmnt/<SID>/exe is accessible via /usr/sap/<SID>/SYS/exe/ctrun  
A standard installation usually contains a symbolic link or soft link from /usr/sap/<SID>/SYS/exe/ctrun to the local directory /usr/sap/<SID>/SYS/exe/dbg. The directory /usr/sap/<SID>/SYS/exe/dbg, in turn, has a symbolic link to the central directory /sapmnt/<SID>/exe
3. On each host system that is to use local executables, create the local directory with the command `mkdir /usr/sap/<SID>/SYS/exe/run`  
The directory must be local to each host system. That is, it must be located on a disk that is physically connected to the host system.
4. Copy the script sapstart to the local executables directory with the command:  
`cp /usr/sap/<SID>/SYS/exe/ctrun/startsap /usr/sap/<SID>/SYS/exe/run/startsap`
5. Start the dialog instance with the command `startsap`.

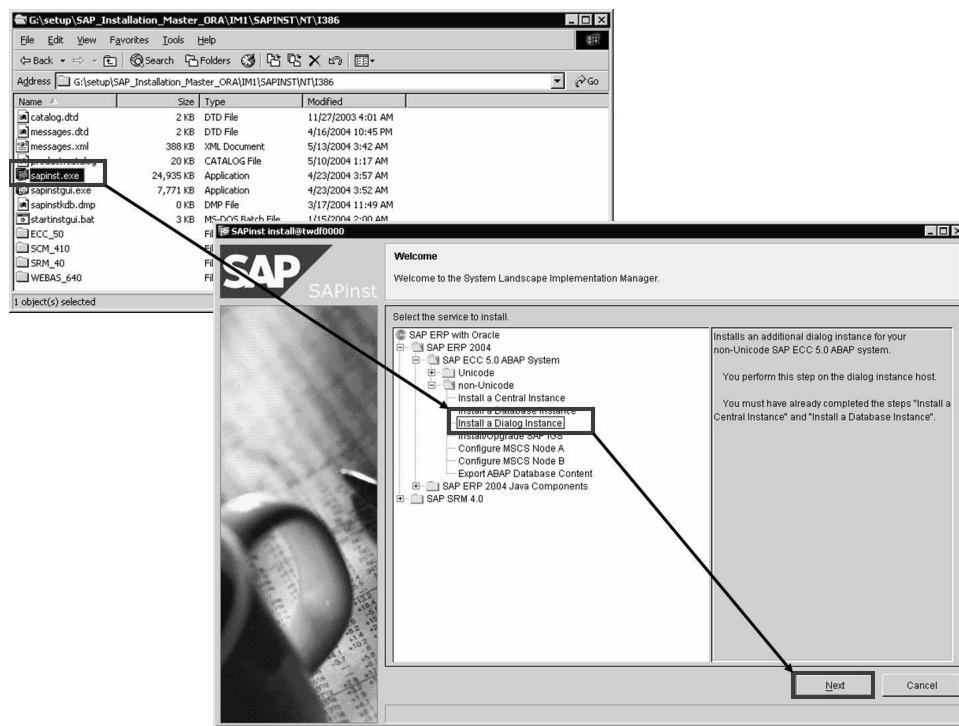
## Installing a Dialog Instance

Start sapinst.exe as explained in the Introducing SAPinst lesson. The SAPinst Welcome screen displays the different installation components, such as SAP ERP 2004 or SAP SRM 4.0.



### Hint: Installation of the Client Software (MS SQL Server, Oracle)

If you use MS SQL Server and Oracle as a database and you want to install one or more dialog or gateway instances for your SAP system, you first have to install the database client software on the respective host. It enables the communication between a host and the database. For all other databases referred to in this documentation, the client software installation is integrated in the SAPinst installation.



**Figure 119: Start SAPinst**

To start installing the Central Instance of a non-Unicode SAP ECC 5.0 ABAP system, follow the path *SAP ERP with Oracle* → *SAP ERP 2004* → *SAP ECC 5.0 ABAP System* → *non-Unicode* → *Install a Dialog Instance*

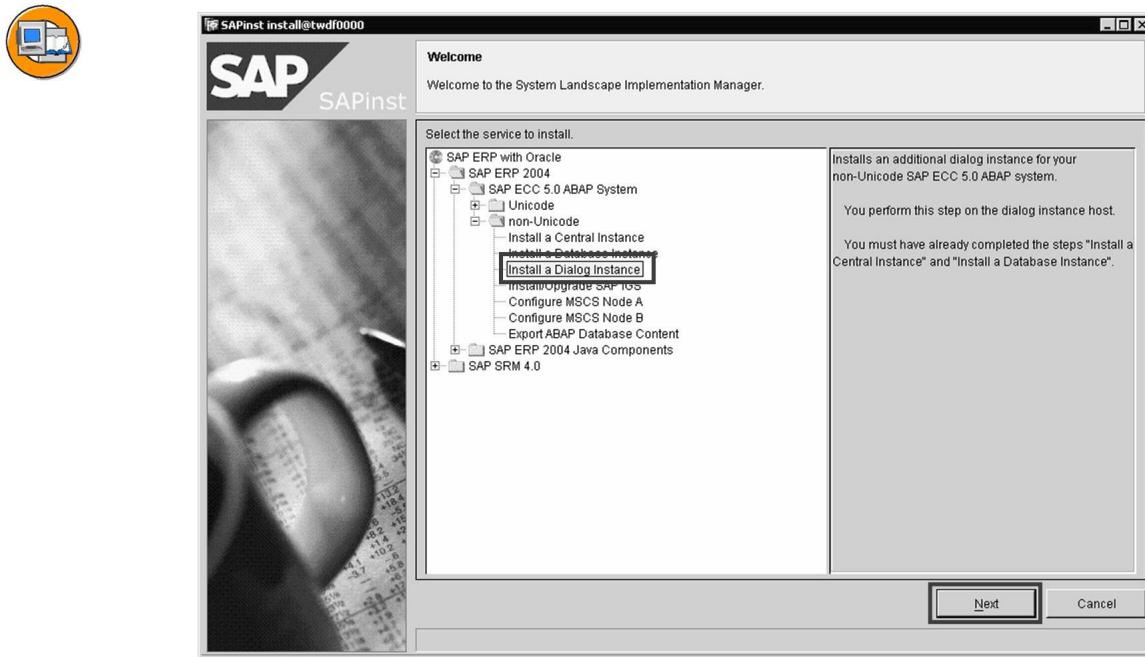


Figure 120: Select *Install a Dialog Instance*

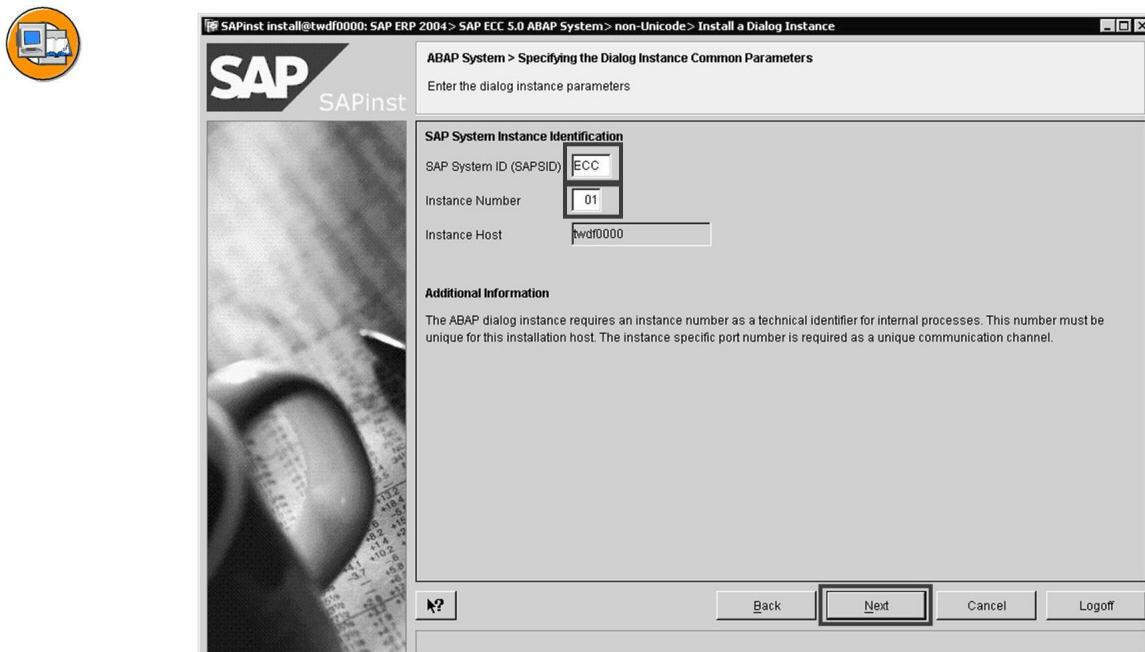
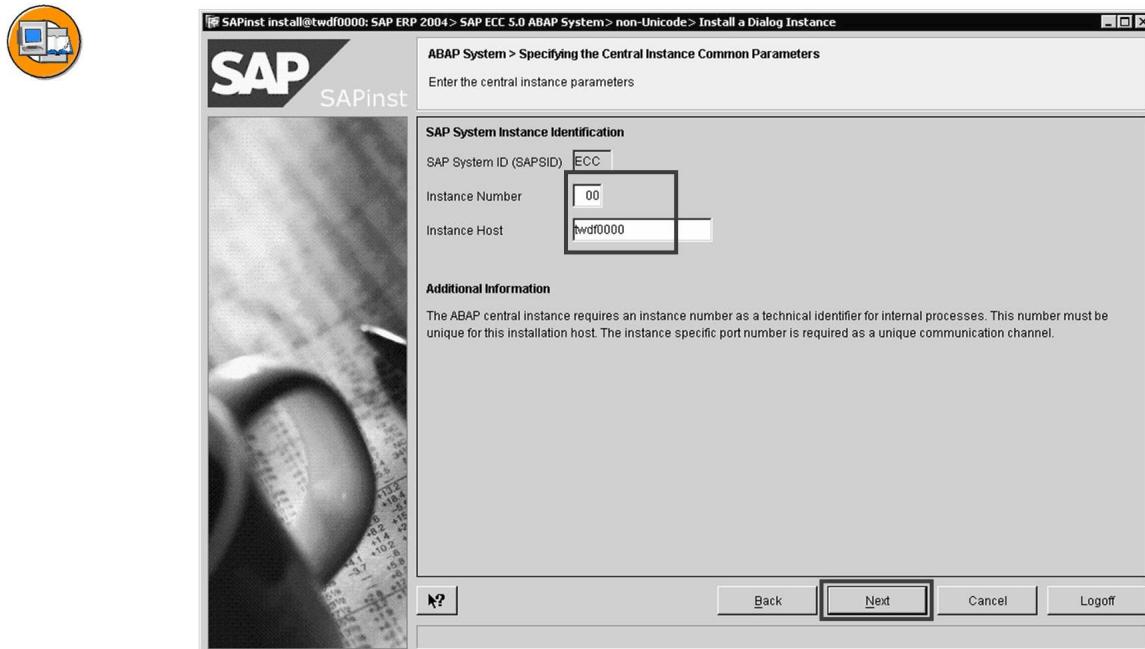


Figure 121: SAP System ID, Dialog Instance Number

Enter exactly the same name of the SAP system <SAPSID>that you entered during the Central Instance installation.

Enter an instance number for the **Dialog Instance**. The number must be two digits. If multiple SAP instances run on the same host, both instances must be assigned different numbers. Assign a value from 0 to 97. Ports 98 and 99 are reserved for SAProuter.

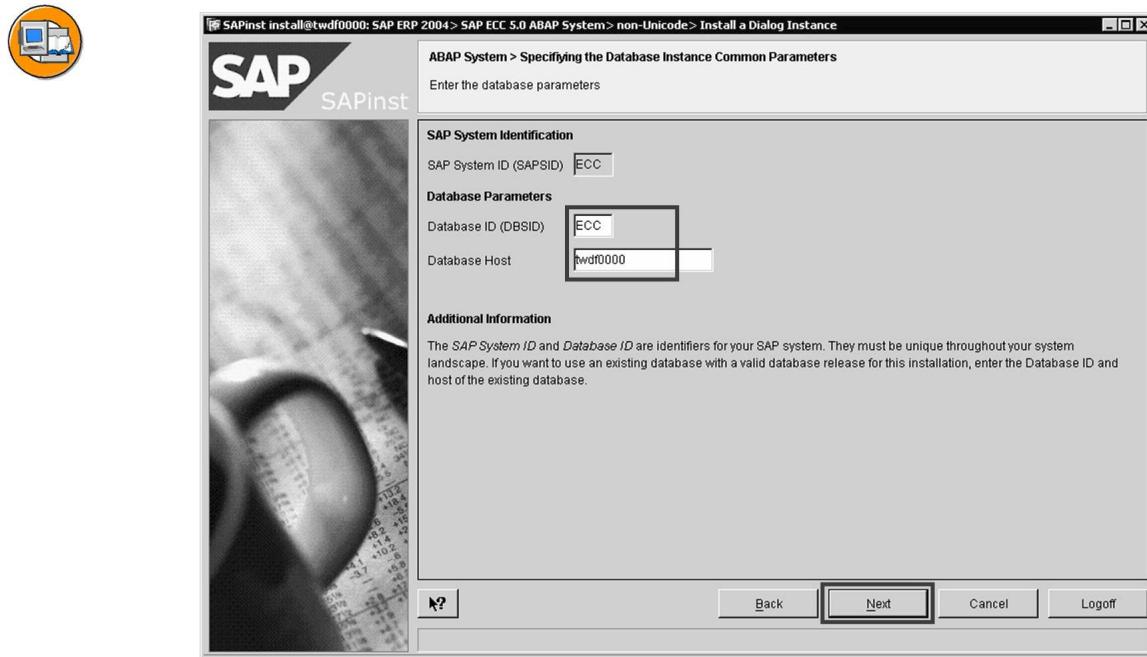
For Windows installations, do not use ports 25, 43, 60, 72, or 89 because there are known problems with other applications, such as Windows Terminal Server Manager, which also use these ports. SAPinst does not check for occupied ports during the installation.



**Figure 122: Enter Central Instance Number and Hostname**

Enter exactly the same instance number of the central instance. To find out the number, look under the SAP directory <DRIVE>:\usr\sap\<SAPSID>\DVEBMGS<##>. The <##> value is the number assigned to the central instance.

Enter exactly the same name of the central instance host that you entered during the central instance installation. To find out the host name, enter **Hostname** at the command prompt of the central instance host.



**Figure 123: Enter Database SID and Hostname**

Enter exactly the same name of the <DBSID> database instance that you entered during the central instance installation.

Enter exactly the same name of the database instance host that you entered during the central instance installation.

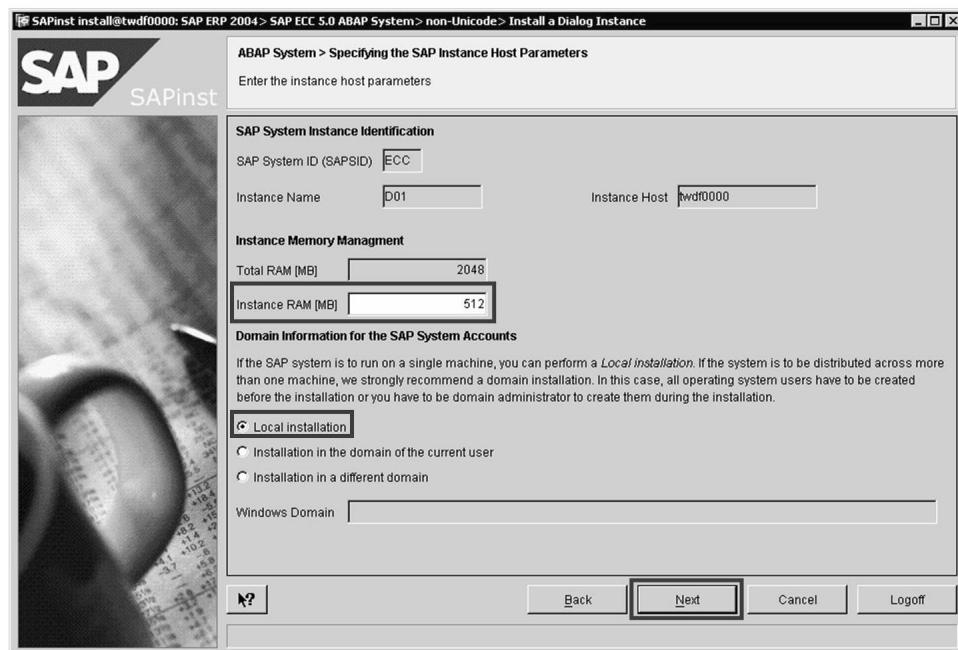


Figure 124: Enter Instance Memory

#### Random Access Memory (RAM) and swap space for the Dialog Instance

- For a ABAP only system, the default value is the entire RAM or swap space. Be sure to reserve at least the minimum values required for the instance, which is at least 512 MB for a non-Unicode SAP system and at least 1 GB for a Unicode SAP system.
- For a ABAP+JAVA system, the default value is the entire RAM or swap space. Reserve some RAM for the database instance. As a rule of thumb, SAP/DB = 70/30 is valid. Be sure to reserve at least the minimum values required for the instance, which is at least 768 MB for a non-Unicode SAP system and at least 1,2 GB for a Unicode SAP system.
- The required Paging File Size on Windows:
  - 32-bit: 1 GB plus 3 times RAM. Maximum required is 10 GB.
  - 64-bit: At least 20 GB is recommended for standard installations (for more information, see SAP Note 153641).
- The required swap space on Unix:
  - 32-bit: 3 \* RAM, minimum 3 GB
  - 64-bit: At least 20 GB is recommended for standard installations (for more information, see SAP Note 153641).

For installations on the Windows operating system, use the following information:

- Domain information for SAP system accounts:
    - Local installation: All Windows accounts and user information is stored locally. Perform a local installation for an SAP system to run on a single host. Authorization problems can occur for a distributed system.
    - Installation in a different domain.
    - Installation in the domain of the current user.
  - In a domain installation, user information is stored centrally on the domain controller and is accessible from all hosts in the system. If the system is to be distributed across multiple computers, SAP strongly recommends a domain installation.
- 



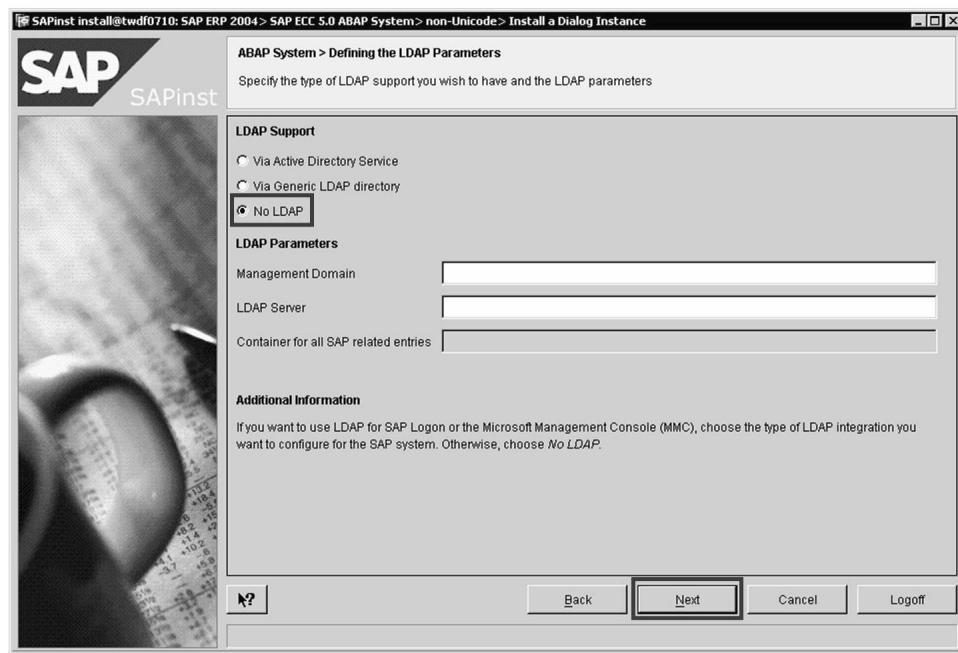
### LDAP (Lightweight Directory Access Protocol)

If you choose LDAP support, the installation routine performs some necessary LDAP configuration changes for an existing directory server. The installation of a directory server is not a part of SAP ECC installation. The LDAP configuration here is used to store SAP logon and the Microsoft Management Console (MMC) information. This has nothing to do with the LDAP chapter in the ADM102!!!

---

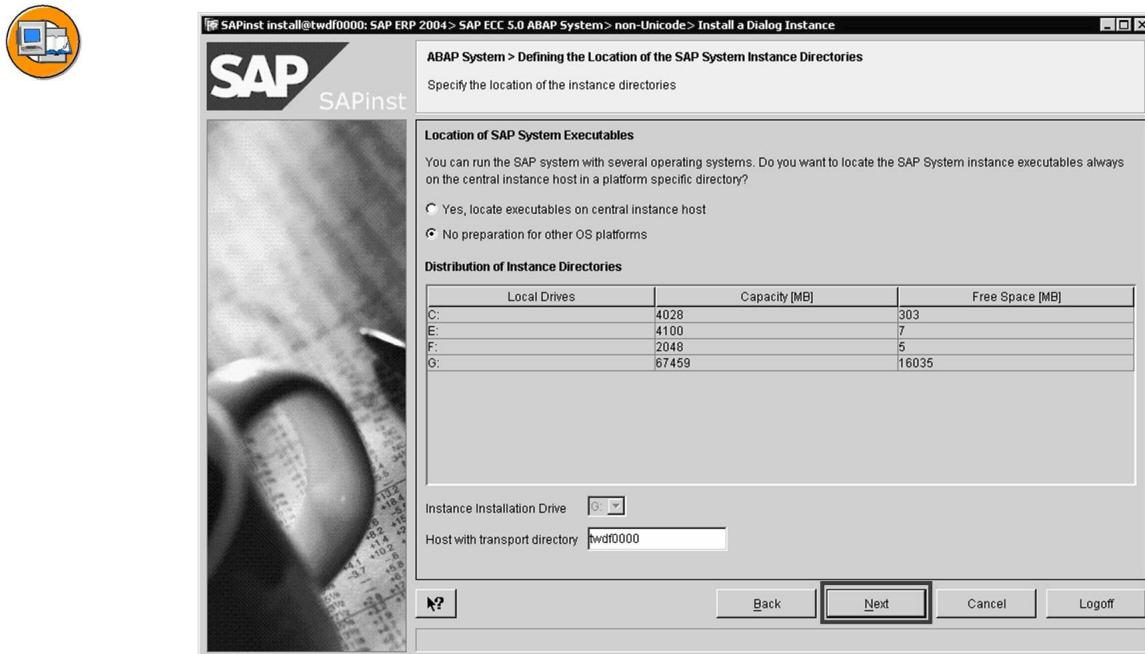


**Caution:** If you selected *Local Installation* in the previous screen then the *LDAP Configuration* screen will **NOT** appear.



**Figure 125: LDAP Configuration**

Select *No LDAP* if this screen appears.



Local Drives	Capacity [MB]	Free Space [MB]
C:	4028	303
E:	4100	7
F:	2048	5
G:	67459	16035

Instance Installation Drive

Host with transport directory

**Figure 126: Check instance Installation Drive and Host for Transport Directory**

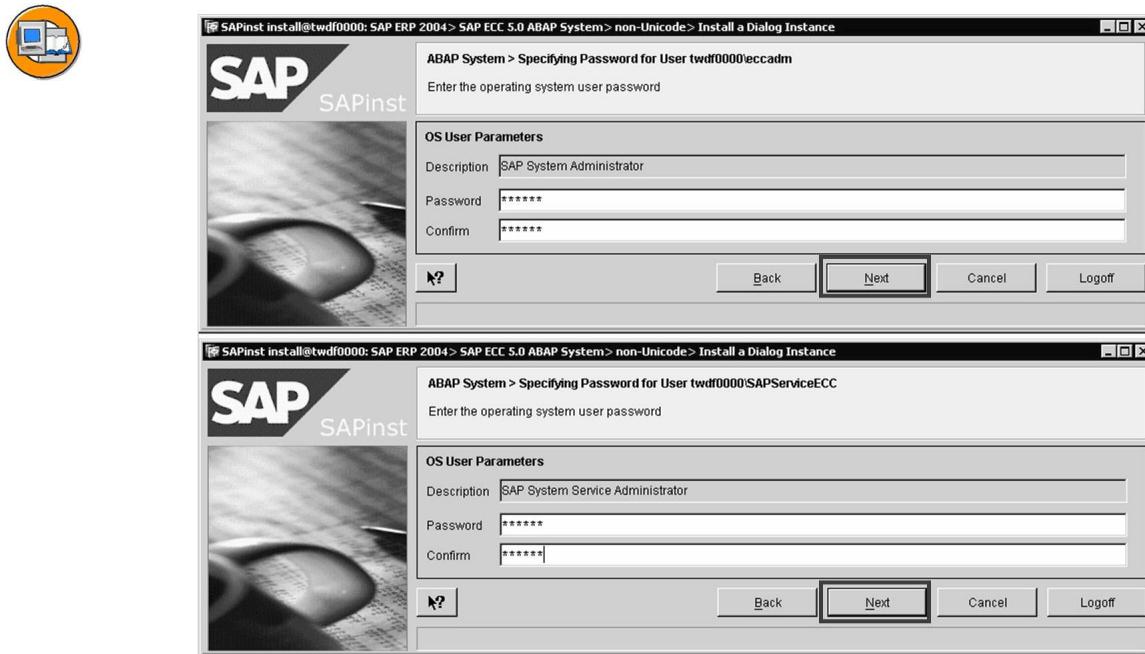
Check if the name of the host where the \usr\sap\trans is located is correct.



**Figure 127: Check Database Schema and DBHOME Parameters**

Enter the name of the database schema (SAP<SCHEMA\_ID>, whereas <SCHEMA\_ID> must be exactly three characters long).

Enter the name of the Oracle Home. In an SAP environment, this is normally <drive letter>:\oracle\<SID>\920.



**Figure 128: Enter Passwords for Operating System Users**

Enter and confirm the password for the SAP system administrator <sapsid>adm.

Enter and confirm the password for the SAP system administrator SAPService<sapsid>.

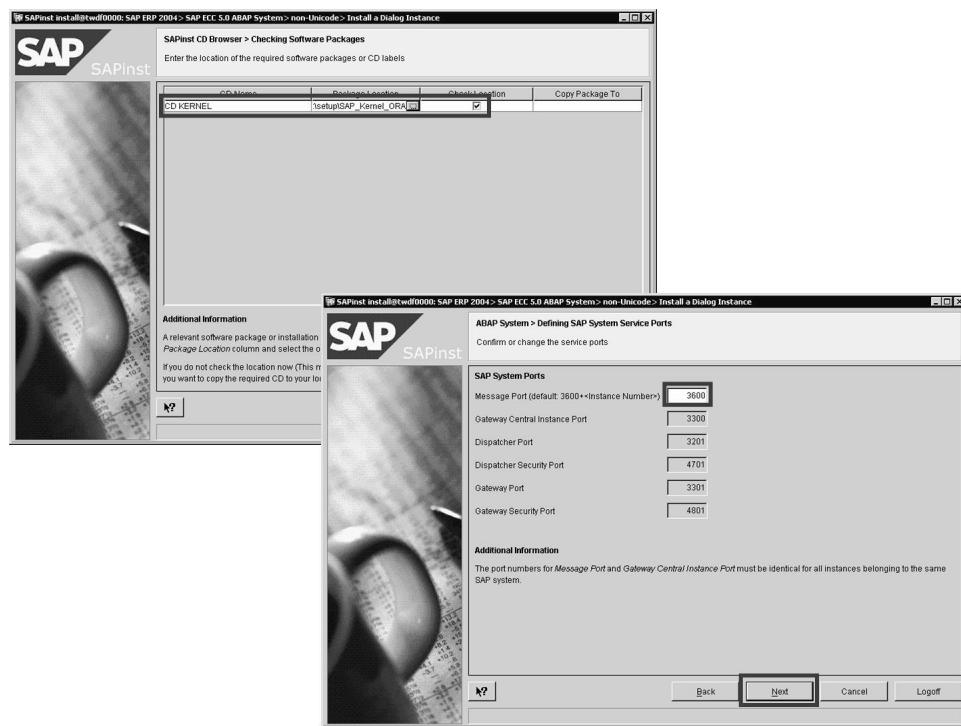
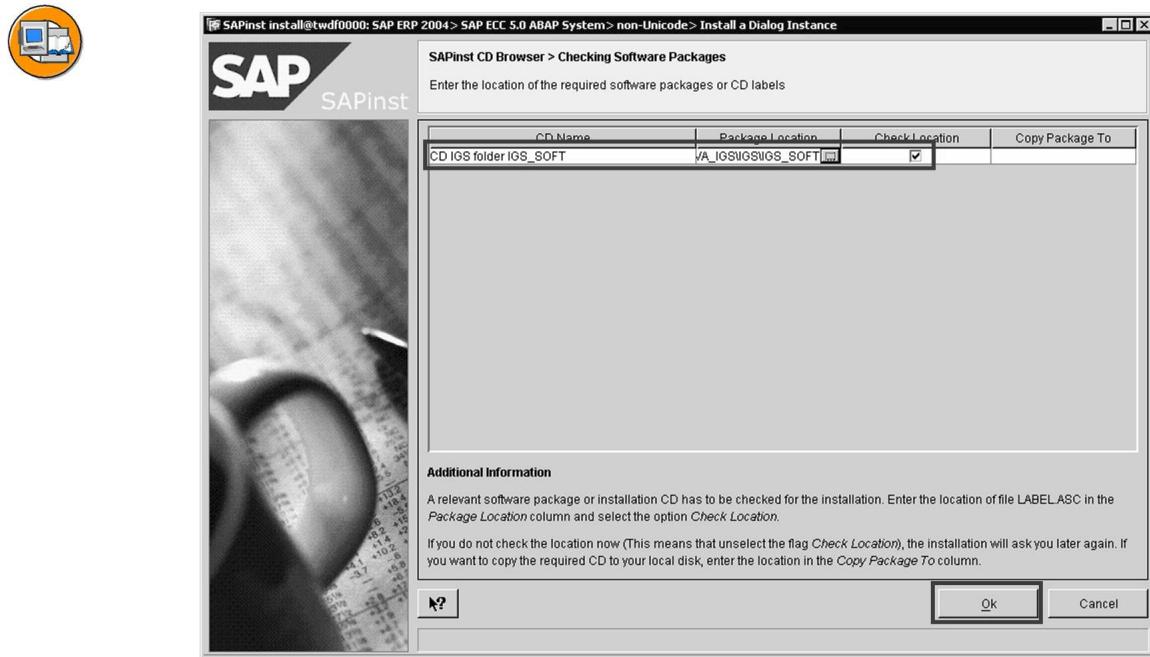
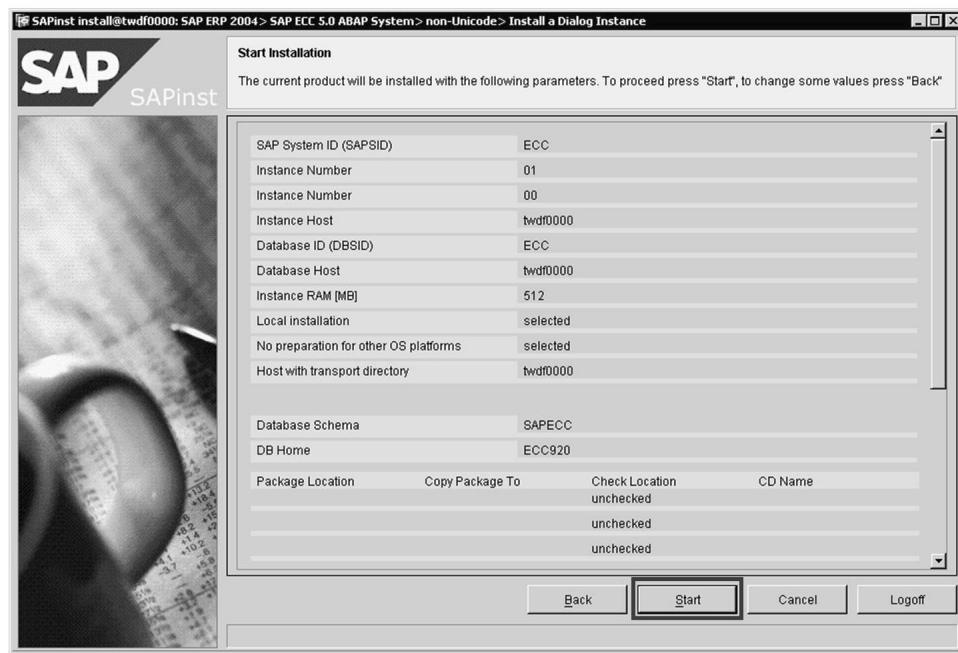


Figure 129: CD Browser and Message Server Port



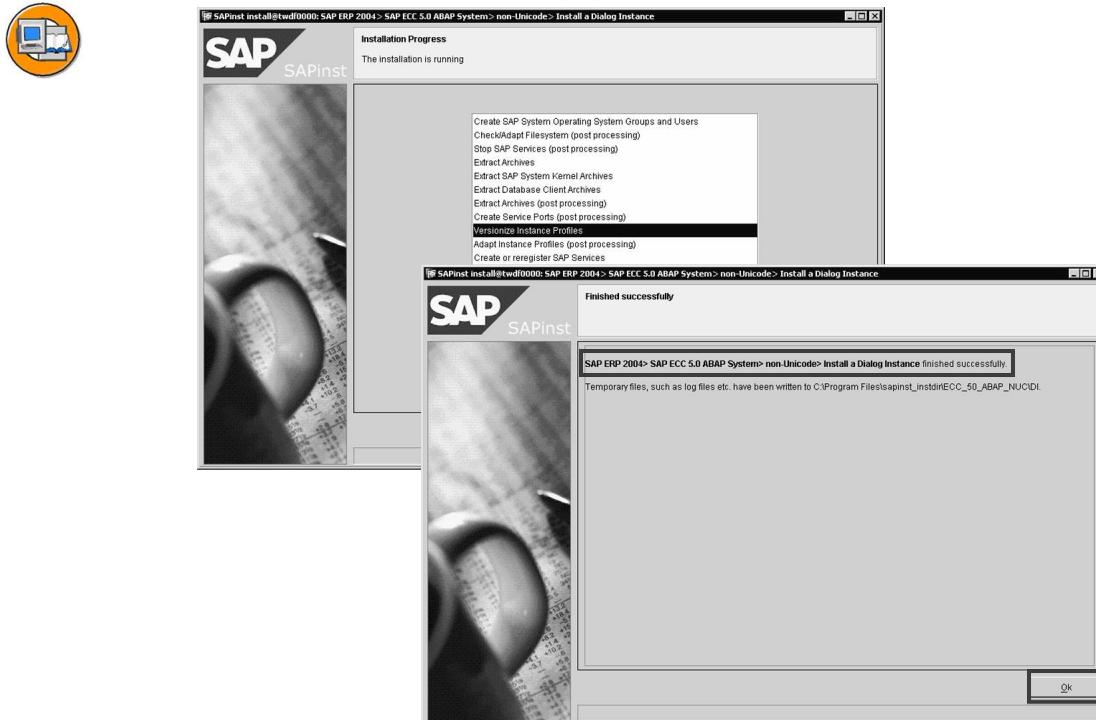
**Figure 130: Location of IGS\_SOFT Directory**

As of SAP Web AS 6.40, the installation of the SAP Internet Graphic Server (IGS) is integrated into the installation of SAP Web Application Server 6.40. Enter the location of the IGS\_SOFT directory. This can be found on the SAP Web AS JAVA DVD in the directory \IGS\IGS\_SOFT \.



**Figure 131: Dialog Instance Summary**

Check your input in the *Summary* screen and start the installation.



**Figure 132: Installation Progress and Installation Finished Successfully**

SAPinst displays the progress of the installation by highlighting the currently active installation phase.

**Congratulations!!** You have just installed a Dialog Instance

For more information on installing additional Dialog instances, see the installation manuals Installation Guide: Additional Instances on Windows/Unix/iSeries found on the SAP Service Marketplace (<http://service.sap.com/instguides>).





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## Exercise 7: Install a Dialog Instance

Exercise Duration: 10 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install a dialog instance

### Business Example

ABC Limited is a petrochemical company that wants to install SAP ERP Central Component. You, as the system administrator of ABC Limited, have installed SAPinst and the central instance. Now you need to install a dialog instance.

#### Task:

Optional: Install the dialog instance on the server you are using for the training, for example, on twdf0###.

1. Restart SAPinst.
2. On the welcome screen, select *Install a Dialog Instance* to start the installation.
3. Install the dialog instance. Use the following information to perform the installation:



**Note:** Always use drive G: to install the software.

Select the values for the following parameters as described:

Parameter	Values
SAP System ID	Same <SID> you used for central instance installation
Instance number (dialog instance parameters)	Other than central instance number
Instance number (central instance parameters)	Enter instance number of previously installed central instance
Instance Host	Host name of your server twdf#####
Database System ID	= SAP System ID

*Continued on next page*

Database Host	Host name of your server twdf#####
Domain Information for the SAP System accounts	Select Local Installation
Instance RAM	350MB
Host with Transport Directory	Host name of your server twdf#####
Password for user <sid>adm	Same password you used for central instance installation
Password for user SAPService<SID>	Same password you used for central instance installation
Kernel CD	G:\SETUP\SAP_Kernel_DVD_ORA
Message port	Same port you used for central instance installation
RDBMS CD	G:\SETUP\RDBMS_ORA
Database schema	Oracle DB user new style

## Solution 7: Install a Dialog Instance

### Task:

Optional: Install the dialog instance on the server you are using for the training, for example, on twdf0###.

1. Restart SAPinst.
  - a) Proceed as described in the lesson.
2. On the welcome screen, select *Install a Dialog Instance* to start the installation.
  - a) On the welcome screen, select *Install a Dialog Instance* to start the installation.

Follow the exercise description.

3. Install the dialog instance. Use the following information to perform the installation:



**Note:** Always use drive G: to install the software.

Select the values for the following parameters as described:

Parameter	Values
SAP System ID	Same <SID> you used for central instance installation
Instance number (dialog instance parameters)	Other than central instance number
Instance number (central instance parameters)	Enter instance number of previously installed central instance
Instance Host	Host name of your server twdf#####
Database System ID	= SAP System ID
Database Host	Host name of your server twdf#####
Domain Information for the SAP System accounts	Select Local Installation
Instance RAM	350MB
Host with Transport Directory	Host name of your server twdf#####
Password for user <sid>adm	Same password you used for central instance installation

*Continued on next page*

Password for user SAPService<SID>	Same password you used for central instance installation
Kernel CD	G:\SETUP\SAP_Kernel_DVD_ORA
Message port	Same port you used for central instance installation
RDBMS CD	G:\SETUP\RDBMS_ORA
Database schema	Oracle DB user new style

- a) Install the dialog instance.

Proceed as described in the lesson.



## Lesson Summary

You should now be able to:

- Install a ABAP Dialog Instance

**Lesson: SAP Web AS Java Central Instance Installation**

Lesson Duration: 60 Minutes

**Lesson Overview**

This lesson explains how to install SAP Web AS Java on the Central Instance.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Install SAP Web AS Java Central Instance



In this lesson, explain how to install SAP Web AS Java Central Instance. This is done by installing a J2EE Add-In on the central instance.



**Caution:** The official name for the J2EE engine is SAP Web Application Server Java. In the installation manual and SAPinst the old name J2EE engine or J2EE Add-in is used. To make it not to confusing the names from the installation manual and SAPinst will be used.

**Business Example**

ABC Limited, a petrochemical company, uses SAP to manage its data. The company now wants to install the latest version of SAP, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component. You have already installed SAPinst, a Central Instance, a Dialog Instance and a Database Instance. Now you need to install SAP Web AS Java Central Instance Installation.

## Preparation for the SAP Web AS Java Installation

### SAP Web AS Java Installation and SAP ERP Central Component



**Hint:** The official name for the SAP J2EE engine is SAP Web Application Server Java. In the installation manual and SAPinst the shorter name J2EE engine or J2EE Add-in is used. To make sure that there is no confusion, the names from the installation manual and SAPinst will be used during this course.



- Installing a SAP J2EE Add-in is a installation option with the installation of SAP Web Application Server 6.40.
- SAP J2EE Add-in is not essentially required for SAP ERP Central Component. If you want to install a SAP J2EE Add-in (Central or Dialog Instance), you need to use the SAP NetWeaver Master installation DVD.

To use the system resources of your production environment within an SAP ERP Central Component in an optimal way, SAP J2EE Add-in is not installed automatically with SAP ERP Central Component. Nevertheless, if you require SAP J2EE Add-in, you can install it as described in Installation Guide – SAP Web Application Server Java 6.40 on Windows: Oracle.

SAP J2EE Add-in is installed using the tool SAPinst. The first SAP J2EE Add-in must be installed for the Central Instance of an SAP system. This will install the SAP J2EE engine and the Central Services Instance

### Performing a Client copy

The SAP J2EE Add-in needs to connect to the SAP ABAP system. Make sure that you have created a new client before you install the SAP J2EE Add-in.

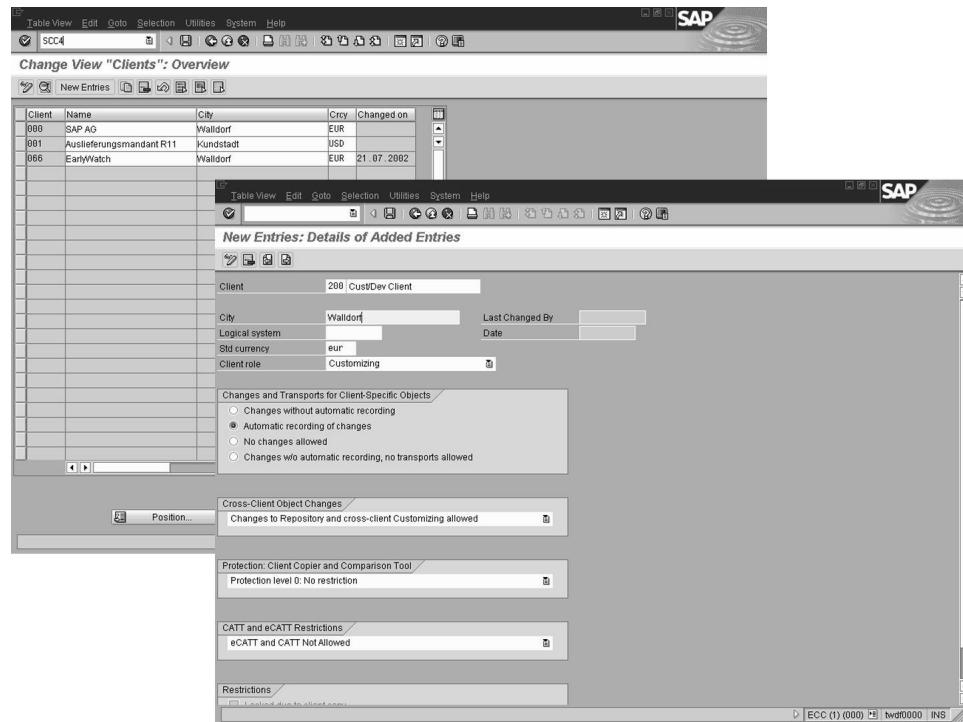
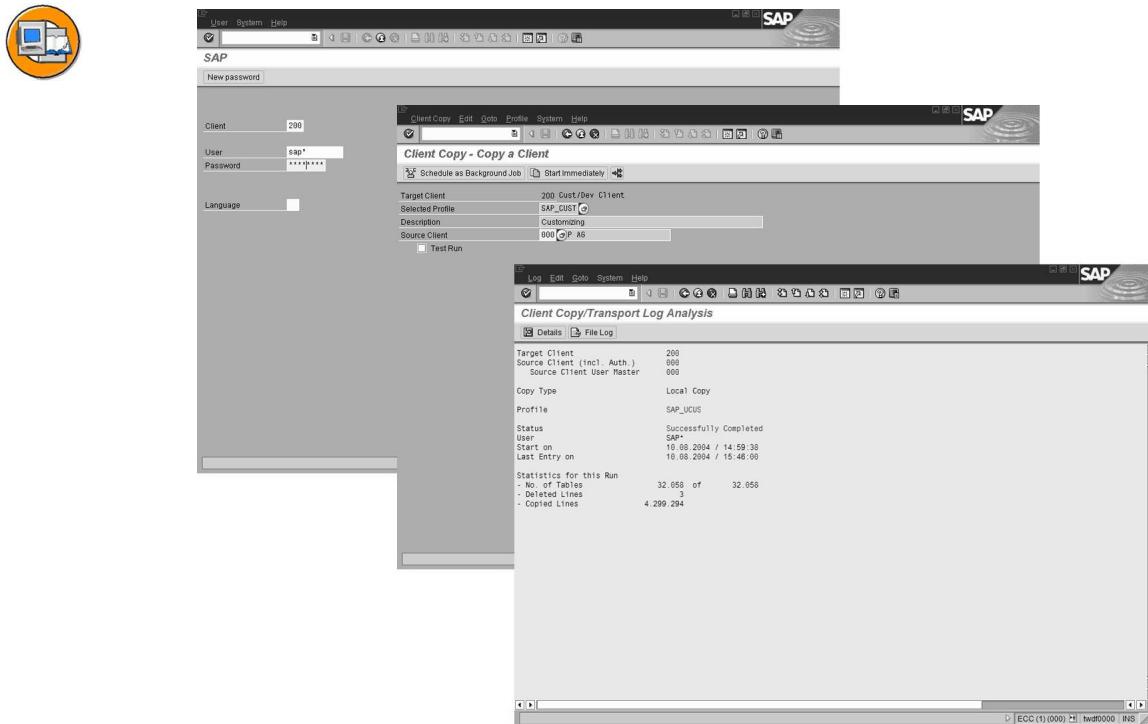


Figure 133: Create a New Client in Transaction SCC4



**Figure 134: Log On to New Client and Perform Client Copy**

Log on to the new client with user: SAP\* with the password: PASS. Start transaction SCCL and copy the client 000 using the recommended profile SAP\_CUST. This takes approximate. 45 minutes to complete.



**Caution:** The client copy will take to long!!!! So tell the customers that in the normal world they **MUST** perform this client copy, but here in the SAP training course we will leave the client copy out. Let the customers perform the J2EE Add-in installation against client 000

You could perform the client copy already before day 2 starts. Then you can show the customers how to perform a client copy, but just before you start the copy you stop. Now you can perform the Add-in installation against a new client.

After the client copy is finished, you can start the installation of the SAP J2EE Add-in for the Central Instance.

## Installing the Central Instance SAP J2EE Add-in



### System Demo

Continue with the installation of the SAP J2EE Engine instance. You also have to show the J2EE Add-In installation for a Dialog Instance.

### Known problems:

When SAPinst does nothing for a long time, while it took a short time for other learners, close all SAPinst screens and restart SAPinst.

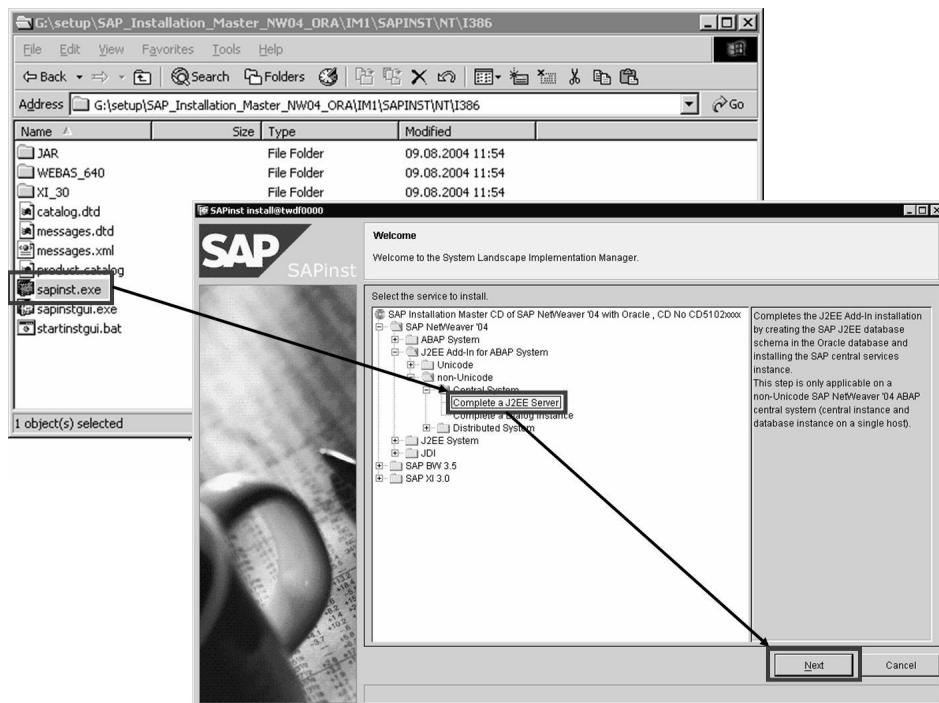
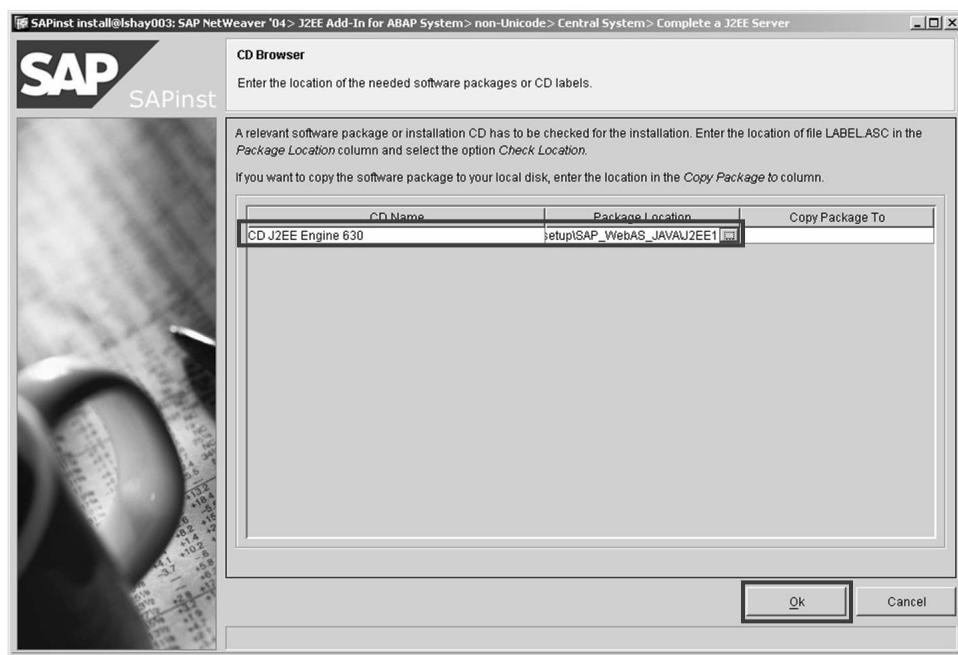


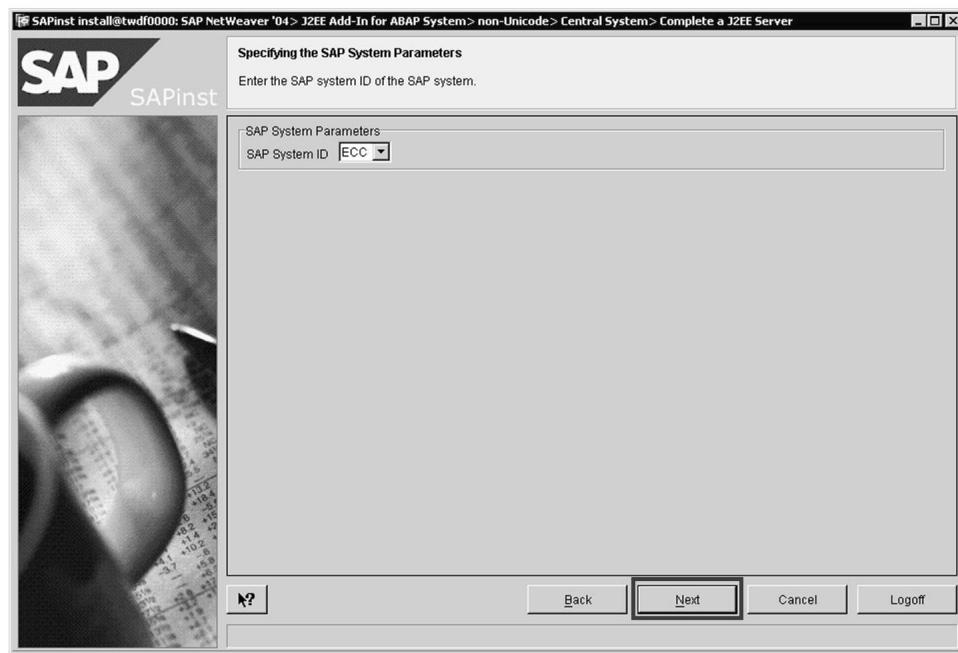
Figure 135: Start SAPinst

To start installing the J2EE Add-in for a Central Instance of a non-Unicode SAP ECC 5.0 ABAP system, follow the path *SAP Installation Master CD of SAP NetWeaver '04 with Oracle* → *SAP NetWeaver '04* → *J2EE Add-in for ABAP System* → *Non-Unicode* → *Central System* → *Complete a J2EE Server*



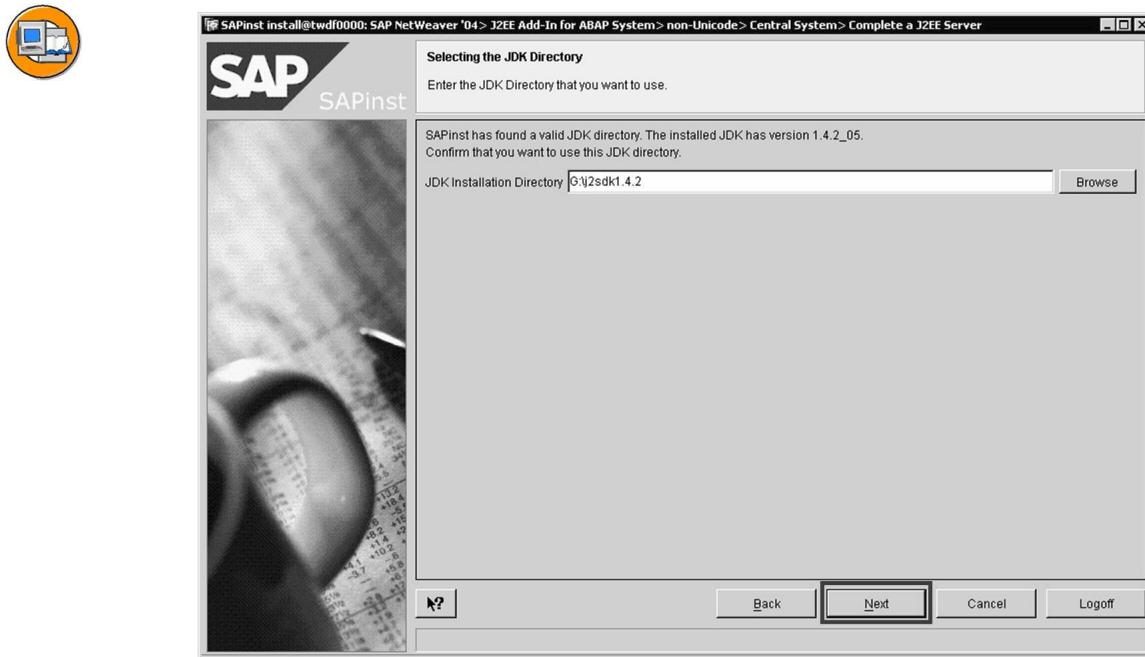
**Figure 136: Select J2EE Directory**

Enter the path to the J2EE1 directory on the SAP Web AS JAVA DVD.



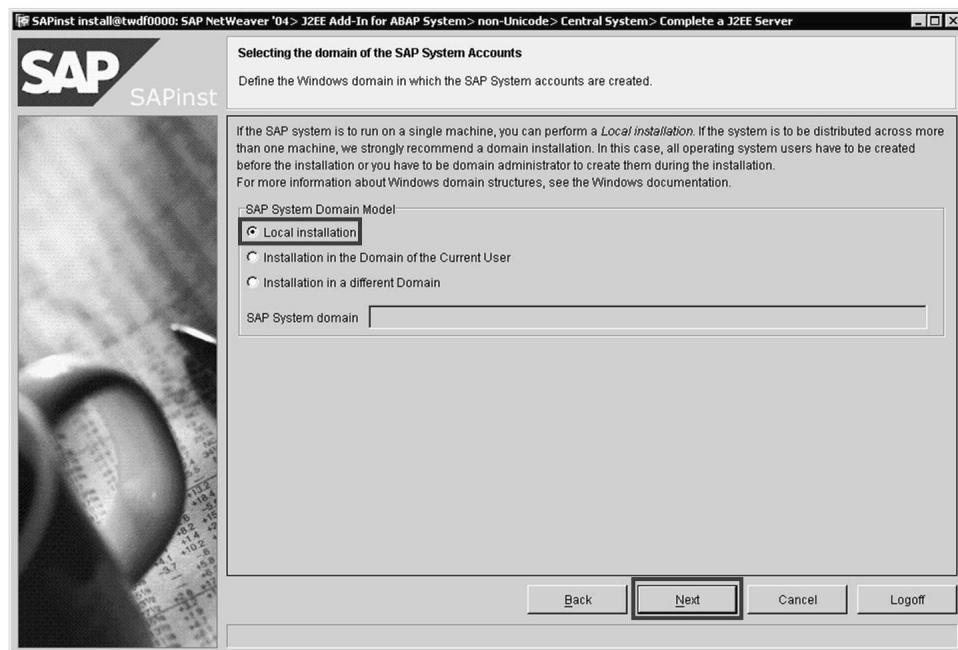
**Figure 137: Enter SAP System ID**

Enter the SAP system ID that you used during the Central Instance installation.



**Figure 138: Enter JDK Installation Directory**

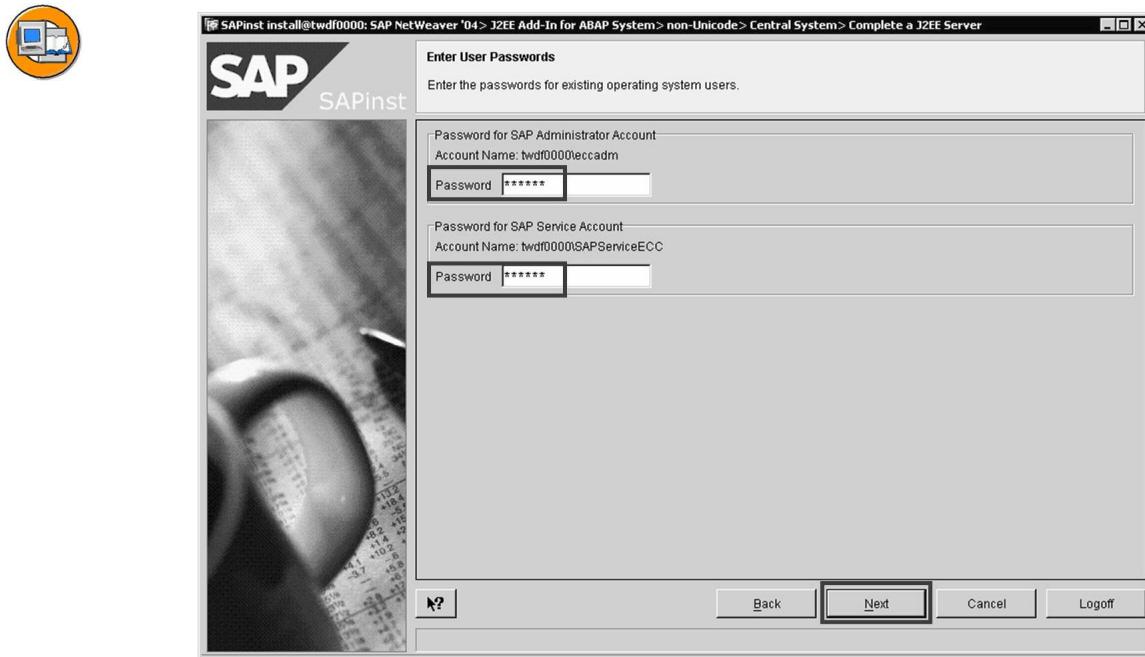
Check the path to the directory where you installed the Java Development Kit.



**Figure 139: Domain Selection**

For installations on the Windows operating system, use the following information:

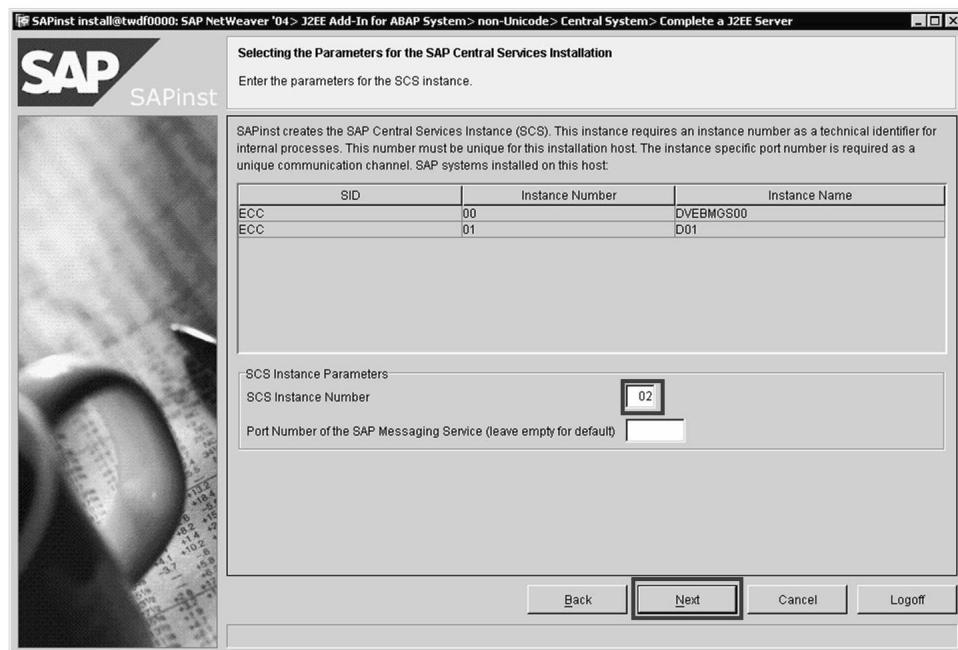
- Domain information for SAP system accounts:
  - Local installation: All Windows accounts and user information is stored locally. Perform a local installation for an SAP system to run on a single host. Authorization problems can occur for a distributed system.
  - Installation in a different domain
  - Installation in the domain of the current user
- In a domain installation, user information is stored centrally on the domain controller and is accessible from all hosts in the system. If the system is to be distributed across multiple computers, SAP strongly recommends a domain installation.



**Figure 140: Enter Passwords for <sid>adm and SAPService<SID> Users**

Enter the password for the SAP system administrator <sapsid>adm.

Enter the password for the SAP system administrator SAPService<sapsid>.



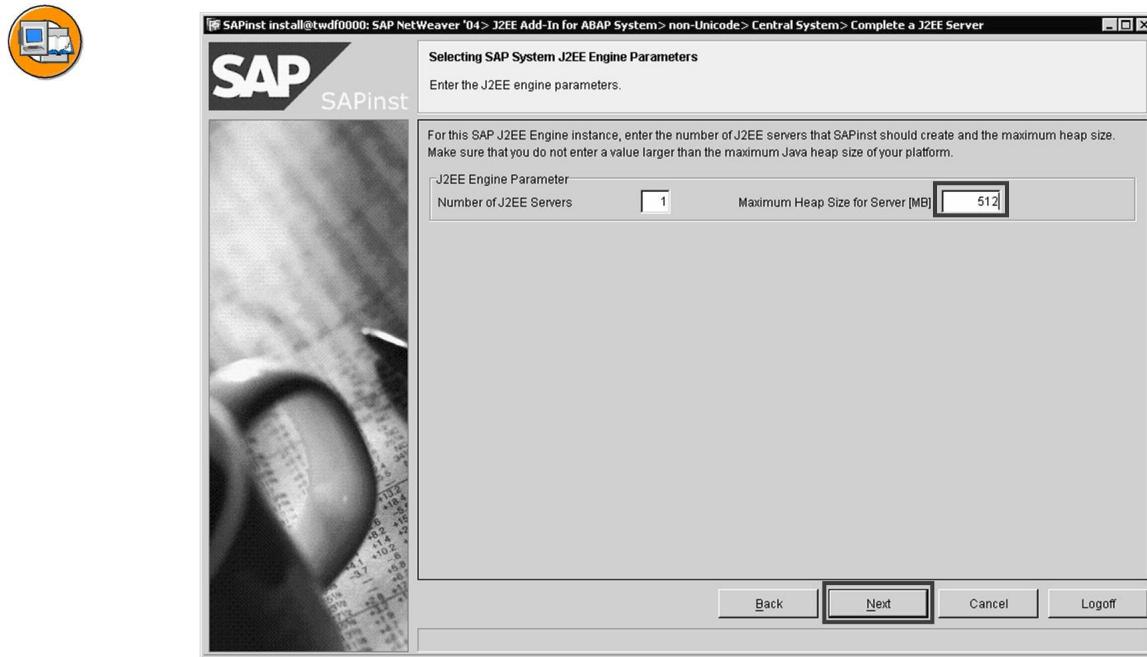
**Figure 141: Select Central Service Instance ID**

Enter SCS Number. The number must be two digits. If multiple SAP instances run on the same host, both instances must be assigned different numbers. Assign a value from 0 to 97. Ports 98 and 99 are reserved for SAProuter. The default port for the service is 36<##>, where <##> is the instance number.

For Windows installations, do not use ports 25, 43, 60, 72, or 89 because there are known problems with other applications, such as Windows Terminal Server Manager, which also use these ports. SAPinst does not check for occupied ports during the installation.

### Central Services Instance

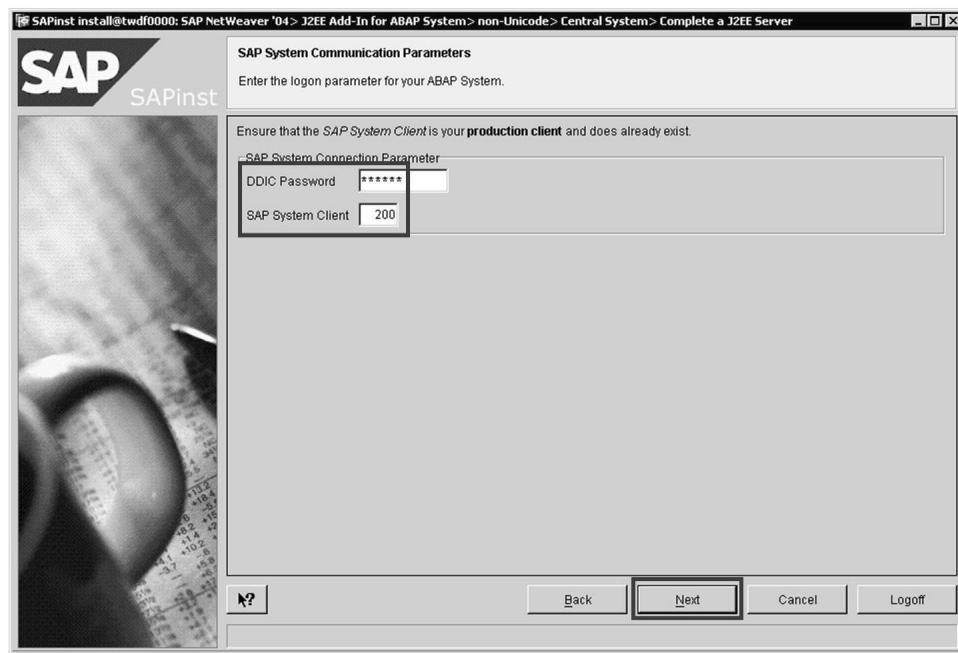
- The central services instance forms the basis of communication and synchronization for the J2EE cluster. A central services instance consists of the message service and the enqueue service
- The message service keeps a list of the J2EE dispatchers and J2EE server processes of the J2EE cluster and provides 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.



**Figure 142: Enter J2EE Parameters**

Leave the number of Java Server processes at **1**.

Enter the maximum amount off memory for the Java VM. 512 MB is the minimum value and the maximum is 4 GB.



**Figure 143: Enter SAP Communication User Password and Client**

SAPinst needs to connect to the ABAP part of the SAPWeb AS to make some configuration settings for the J2EE Add-In. Enter the DDIC password and the client number.

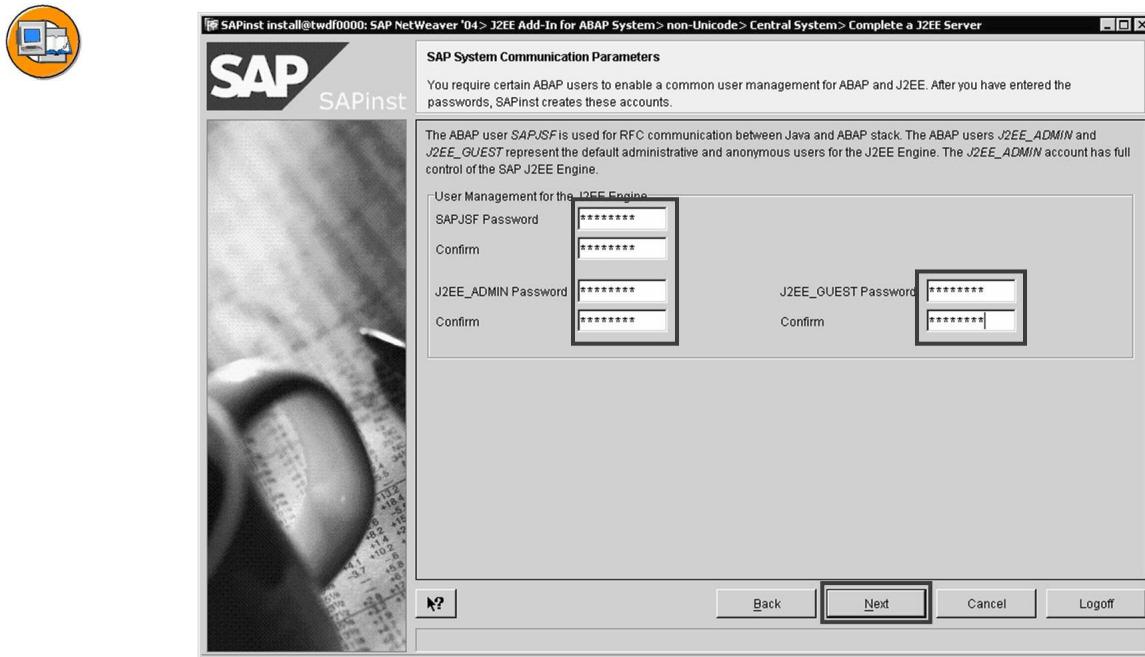
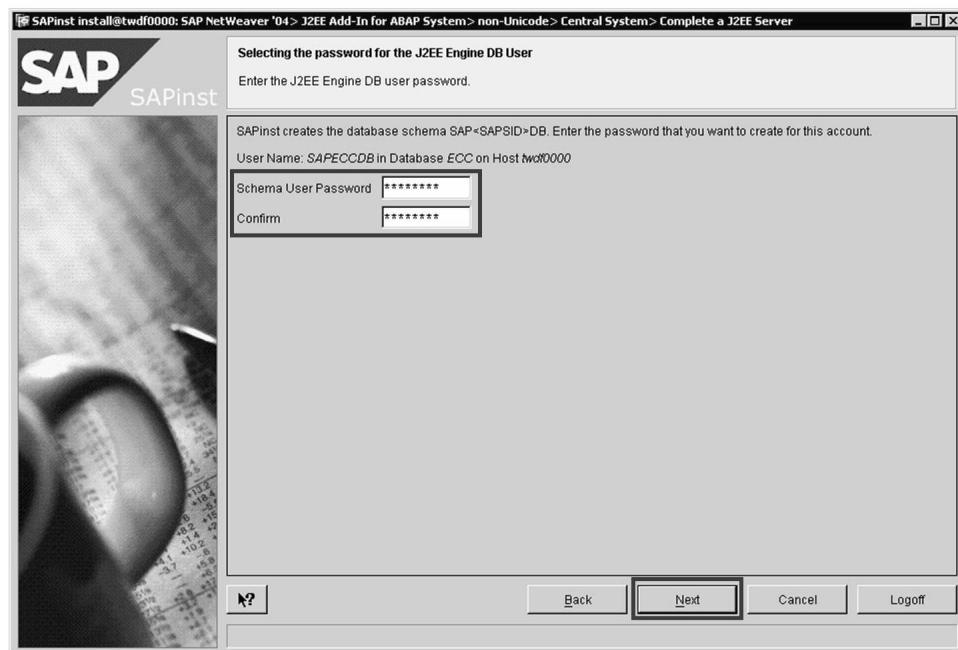


Figure 144: Enter Password for J2EE Users

The DDIC user will create the three ABAP user accounts SAPJSF, J2EE\_ADMIN, and J2EE\_GUEST.

- SAPJSF - Used for RFC communication between ABAP and JAVA stack
- J2EE\_ADMIN - Is the administration user for the SAP Web AS - Java
- J2EE\_GUEST - Is for anonymous user on the SAP Web AS - Java



**Figure 145: Enter Password Java Database Schema User**

SAPinst creates a new database schema for the SAP Web AS - Java server under the name SAP<SID>DB. SAPinst also creates a user account in the database under the same name as the database schema. Enter a password for this new database user.

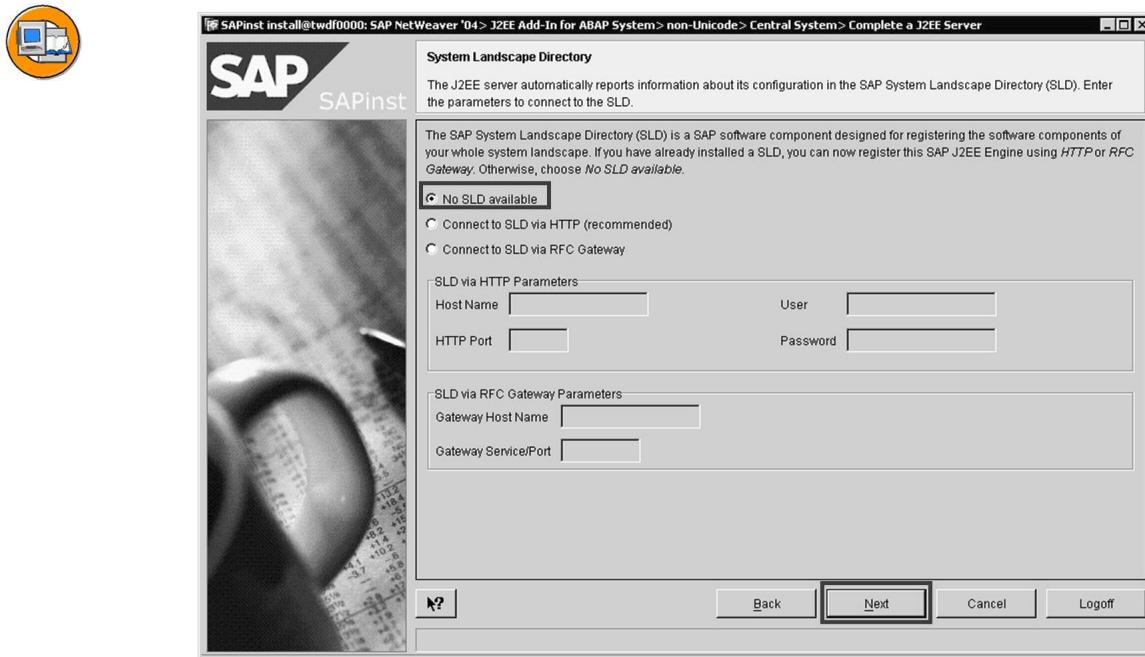


Figure 146: Use SLD

We don't use the SLD here.

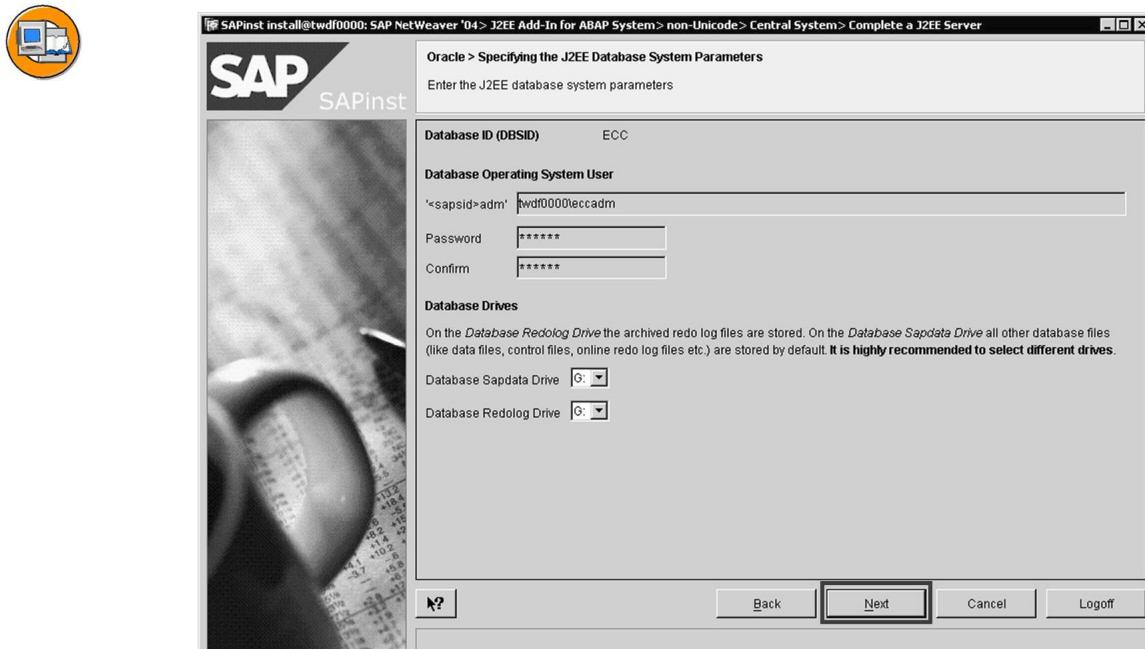


Figure 147: Enter J2EE Database Files

Check the location of the redo log files. This must be the same value as you entered during the database instance installation.

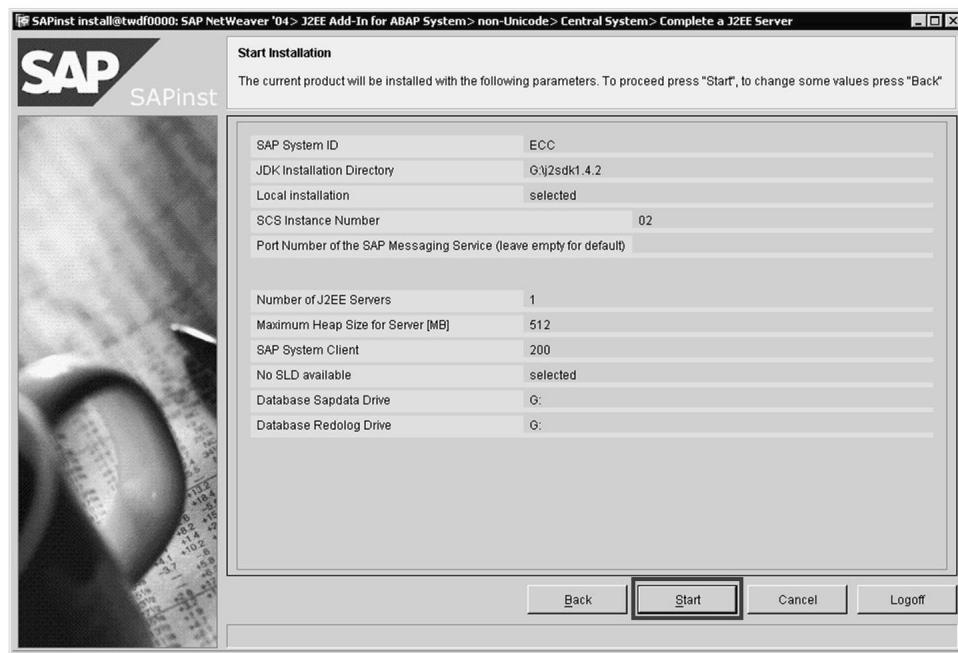
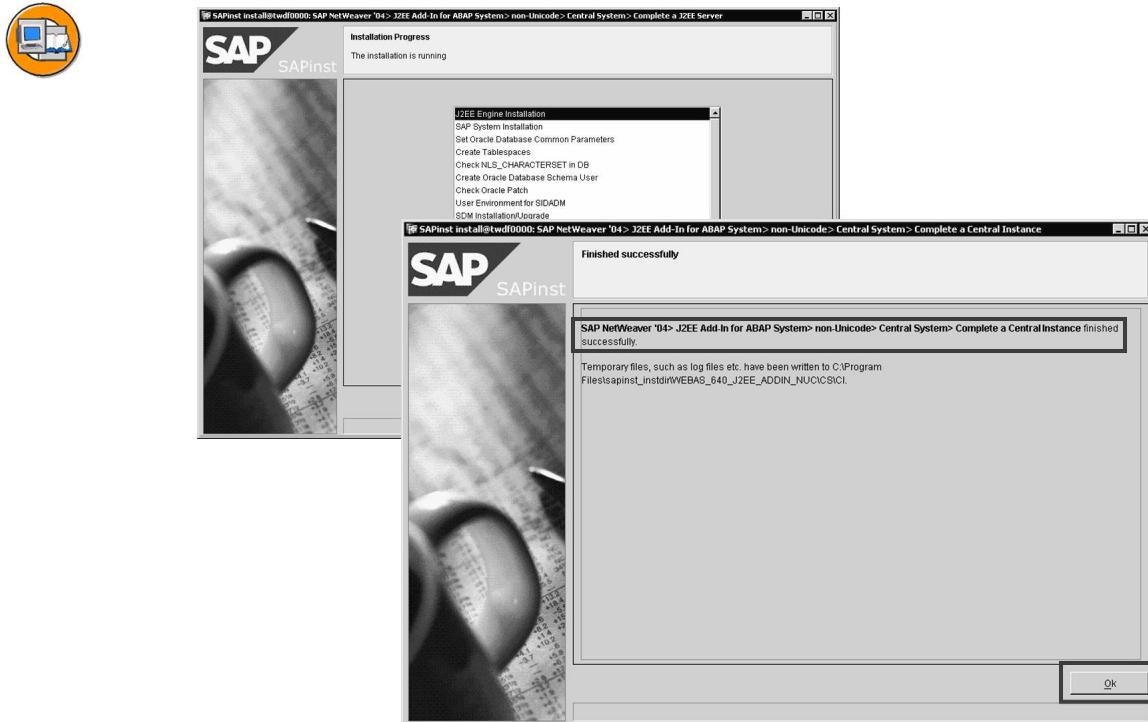


Figure 148: J2EE Add-In Installation Summary

Check your input in the *Summary* screen and start the installation.



**Figure 149: Installation Progress and Installation Finished Successfully**

SAPinst displays the progress of the installation by highlighting the currently active installation phase.

**Congratulations!!** You have just installed a J2EE Add-in on the Central Instance





## Exercise 8: Install a SAP Web AS Java Central Instance

Exercise Duration: 10 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install SAP Web AS Java Central Instance

### Business Example

As the system administrator of ABC Limited, a petrochemical company, you have to install SAP ERP Central Component. You have already installed SAPinst, a central, a dialog instance, and a database instance. Now you need to install the SAP Web AS Java Central Instance.

### Task:

Install the SAP Web AS Java Central Instance on the server you are using for the training, for example, on twdf0###.

1. Start SAPinst. from the SAP\_Installation\_Master\_NW04\_ORA DVD and select Complete a J2EE Server.

## Solution 8: Install a SAP Web AS Java Central Instance

### Task:

Install the SAP Web AS Java Central Instance on the server you are using for the training, for example, on twdf0###.

1. Start SAPinst. from the SAP\_Installation\_Master\_NW04\_ORA DVD and select Complete a J2EE Server.
  - a) Proceed as described in the lesson and select *Complete a J2EE Server*.



## Lesson Summary

You should now be able to:

- Install SAP Web AS Java Central Instance

## Lesson: SAP Web AS Java Dialog Instance Installation



Lesson Duration: 20 Minutes

### Lesson Overview

This lesson describes how to install a SAP Web AS Java on the Dialog Instance.



### Lesson Objectives

After completing this lesson, you will be able to:

- Install a SAP Web AS Java Dialog Instance



In this lesson, explain how to install an SAP Web AS Java Dialog Instance. **DON'T** perform the installation. This lesson is slides only due to time restrictions.



**Caution:** The official name for the J2EE engine is SAP Web Application Server Java. In the installation manual and SAPinst the old name J2EE engine or J2EE Add-in is used. To make it not to confusing the names from the installation manual and SAPinst will be used.

### Business Example

ABC Limited, a petrochemical company, uses SAP to manage its data. The company plans to install the latest version of SAP, SAP ERP Central Component (SAP ECC), to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of ABC, you need to install SAP ERP Central Component. You have already installed SAPinst, a Central Instance, a Dialog Instance, a Database Instance and a SAP Web AS Java Central Instance. Now you need to install a SAP Web AS Java Dialog Instance.

### Installing a SAP Web AS Java Dialog Instance

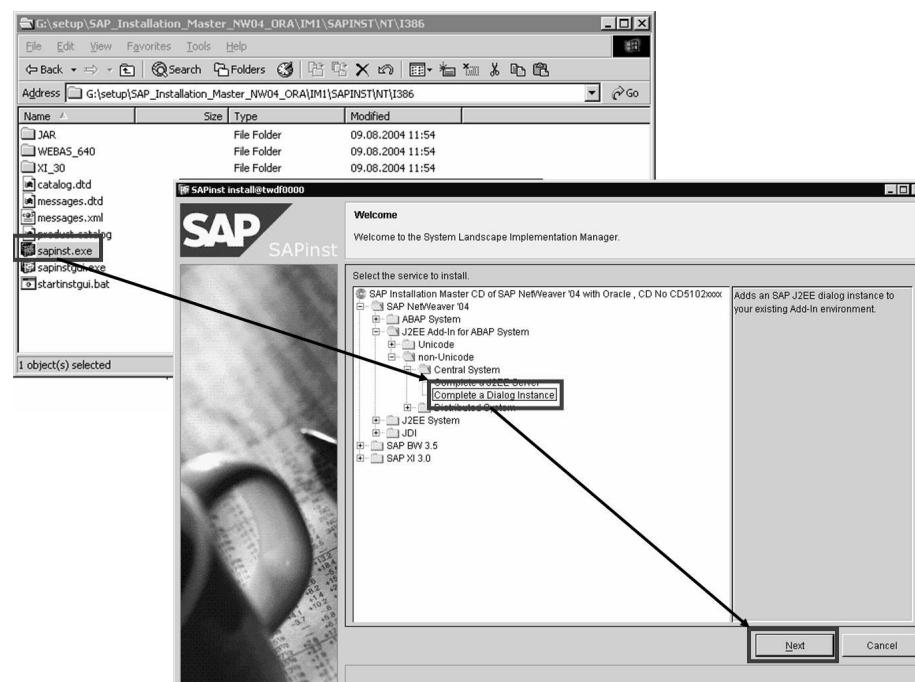


**Hint:** The official name for the SAP J2EE engine is SAP Web Application Server Java. In the installation manual and SAPinst the shorter name J2EE engine or J2EE Add-in is used. To make sure that there is no confusion, the names from the installation manual and SAPinst will be used during this course.



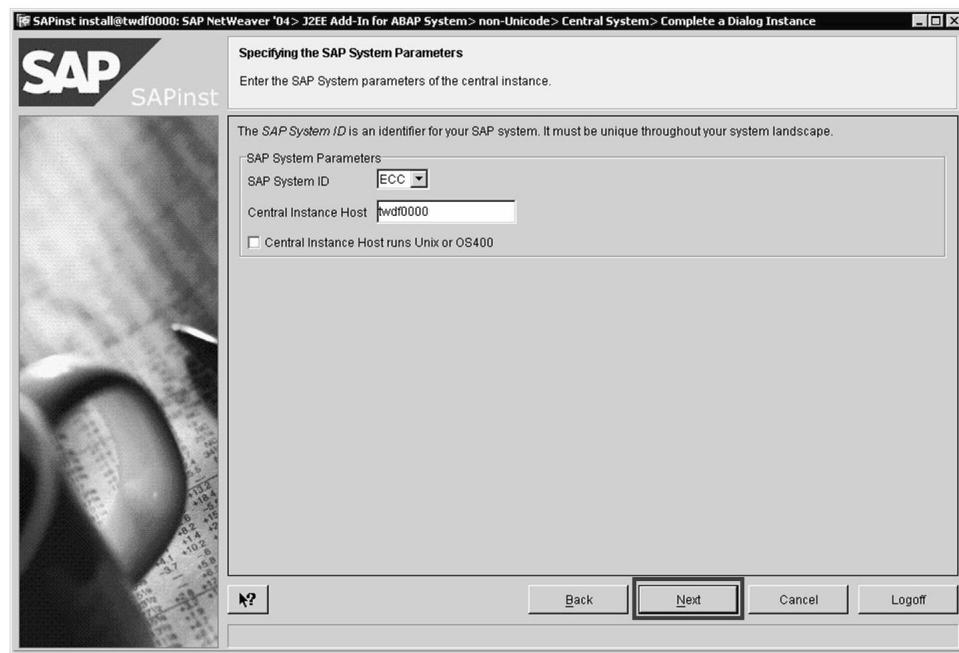
### NO System Demo

In this lesson, explain how to install an SAP Web AS Java Dialog Instance. **DON'T** perform the installation. This lesson is slides only due to time restrictions.



**Figure 150: Start SAPinst**

To start installing the J2EE Add-in for a Dialog Instance of a non-Unicode SAP ECC 5.0 ABAP system, follow the menu path *SAP Installation Master CD of SAP NetWeaver '04 with Oracle* → *SAP NetWeaver '04* → *J2EE Add-in for ABAP System* → *Non-Unicode* → *Central System* → *Complete a Dialog Instance*



**Figure 151: Select SAP System ID and Central Host**

Enter the SAP system ID that you used during the Central Instance and the hostname of the Central Instance.

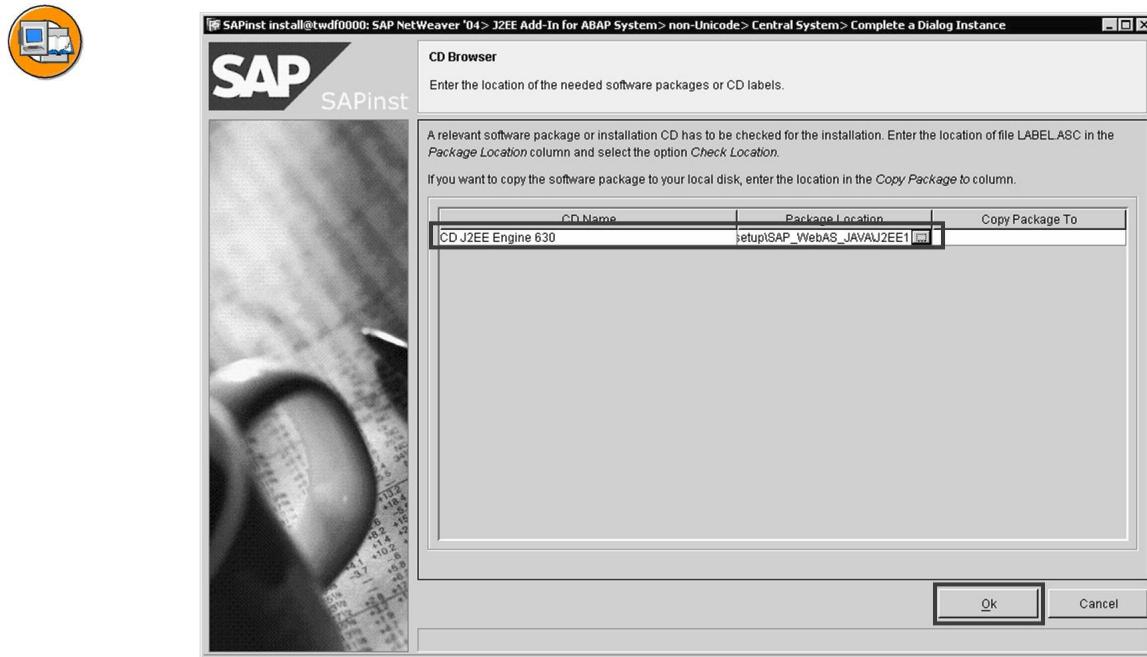
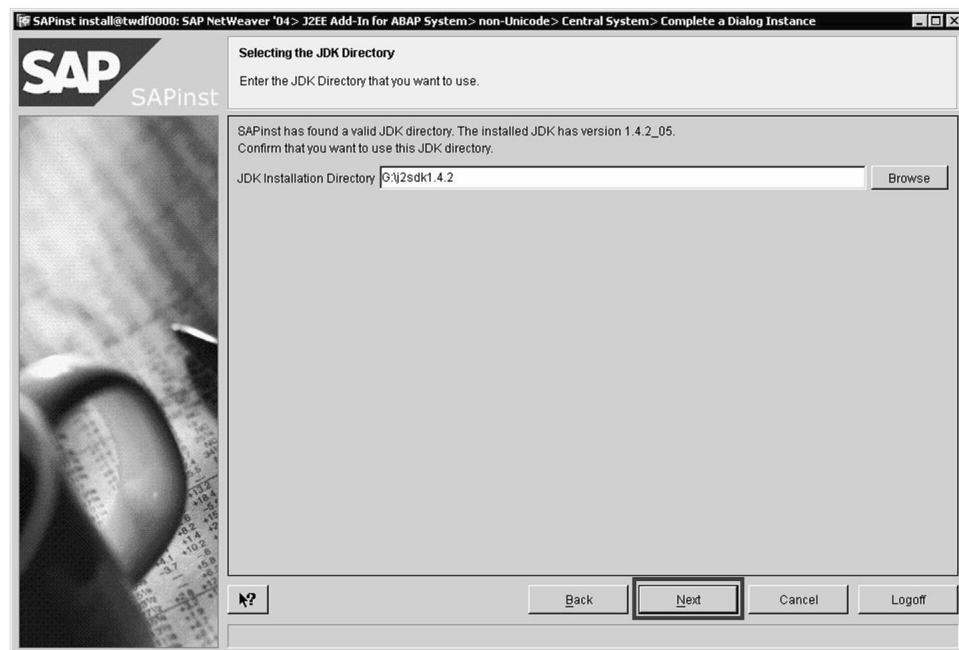


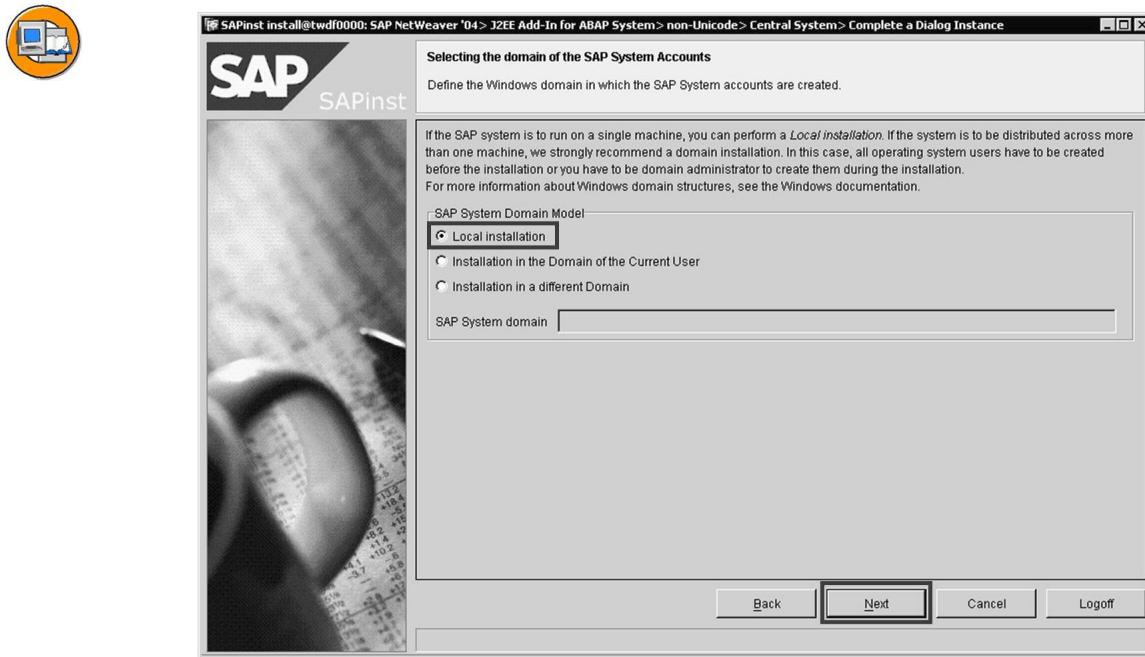
Figure 152: Select J2EE CD Directory

Enter the path to the J2EE1 directory on the SAP Web AS JAVA DVD.



**Figure 153: Select SDK Directory**

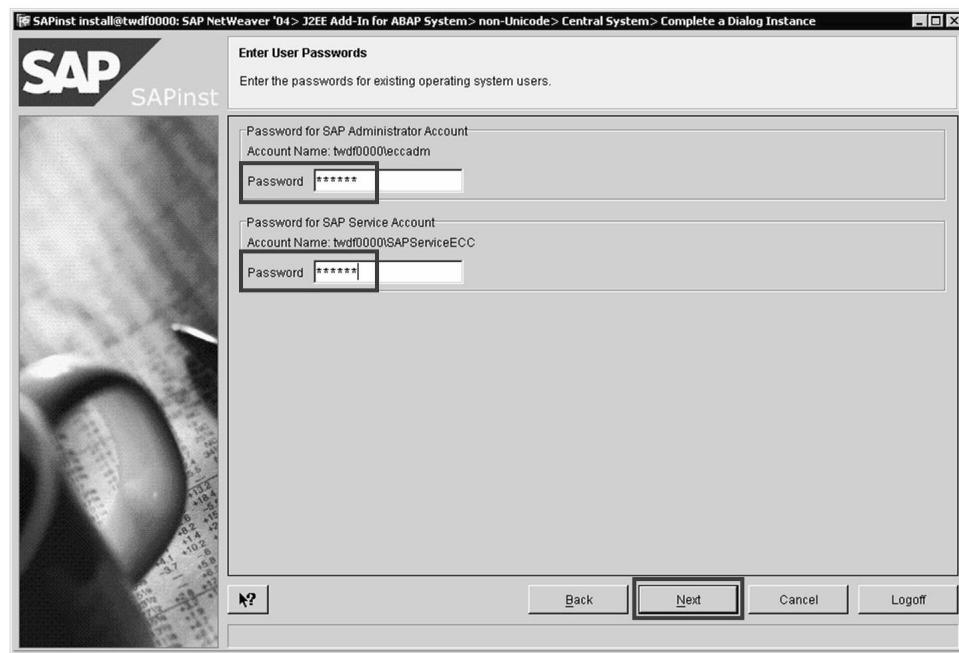
Check the path to the directory where you installed the Java Development Kit.



**Figure 154: Select Windows Domain**

For installations on the Windows operating system, use the following information:

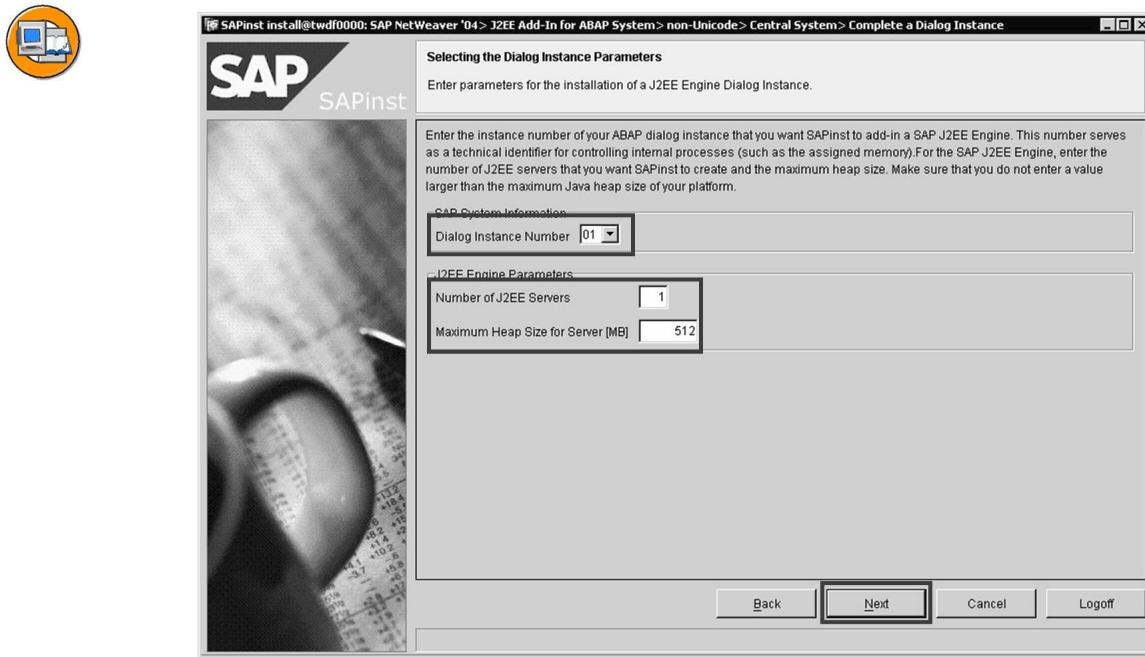
- Domain information for SAP system accounts:
  - Local installation: All Windows accounts and user information is stored locally. Perform a local installation for an SAP system to run on a single host. Authorization problems can occur for a distributed system.
  - Installation in a different domain.
  - Installation in the domain of the current user.
- In a domain installation, user information is stored centrally on the domain controller and is accessible from all hosts in the system. If the system is to be distributed across multiple computers, SAP strongly recommends a domain installation.



**Figure 155: Enter Password for <sid>adm and SAPService<SID> Users**

Enter the password for the SAP system administrator <sapsid>adm.

Enter the password for the SAP system administrator SAPService<sapsid>.

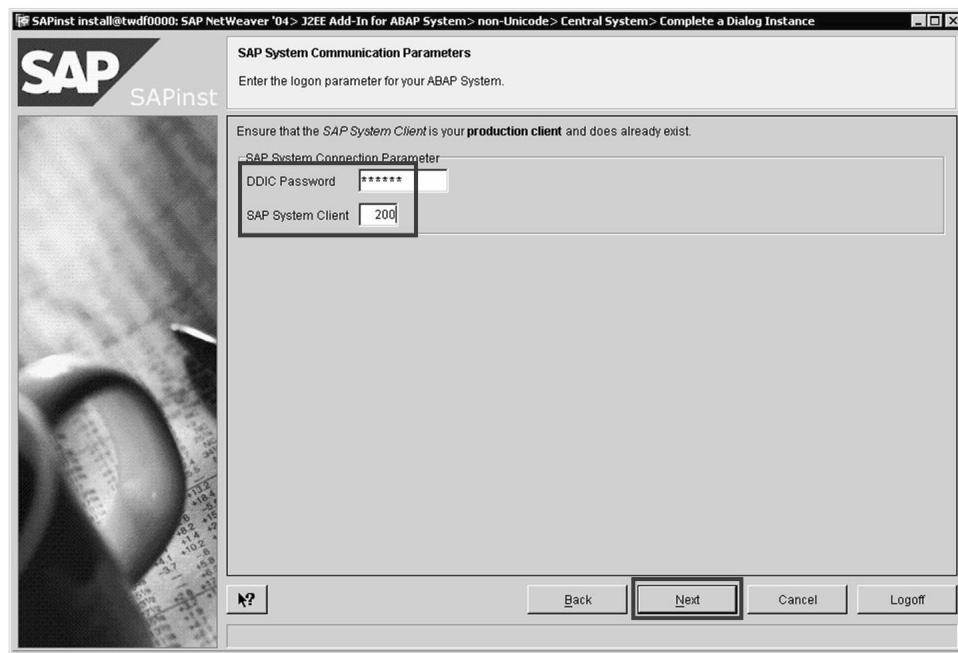


**Figure 156: Select ABAP Dialog Instance ID**

Enter the Instance ID of your ABAP Dialog Instance.

Enter the number of Java Server processes. Normally 1 process is enough.

Enter the maximum amount off memory for the Java VM. 512 MB is the minimum value and the maximum is 4 GB.



**Figure 157: Enter SAP Communication User and Client**

SAPinst needs to connect to the ABAP part of the SAPWeb AS to make some configuration settings for the J2EE Add-In. Enter the DDIC password and the client number.

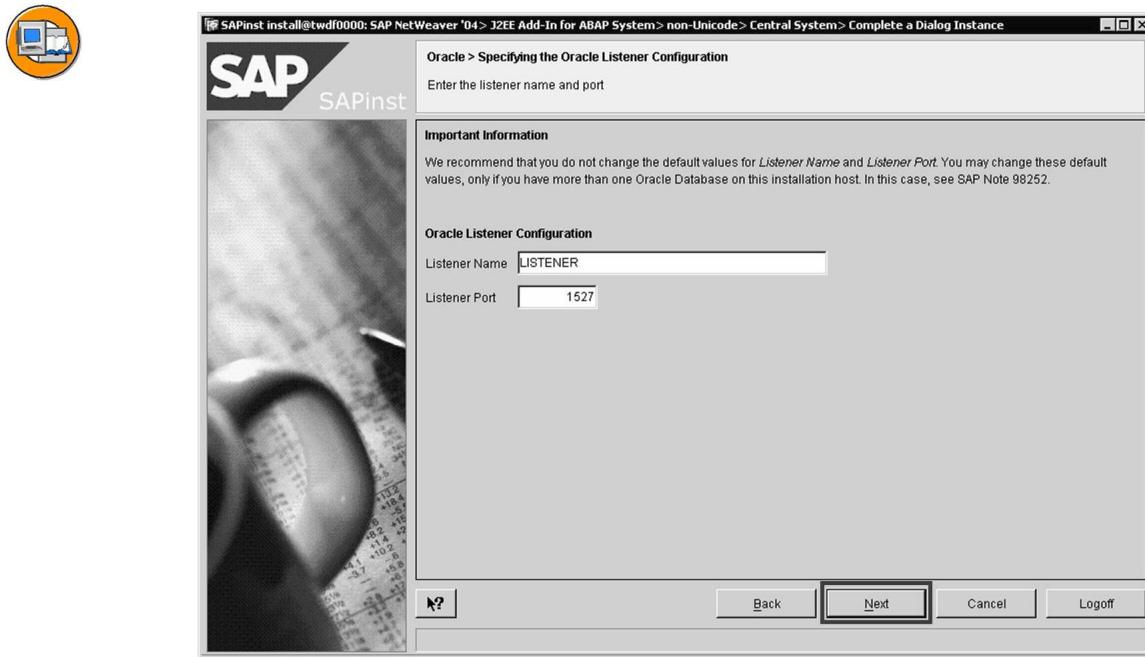


Figure 158: Check Oracle Listener Information

Check the values of the Oracle Listener. The default values should be fine.

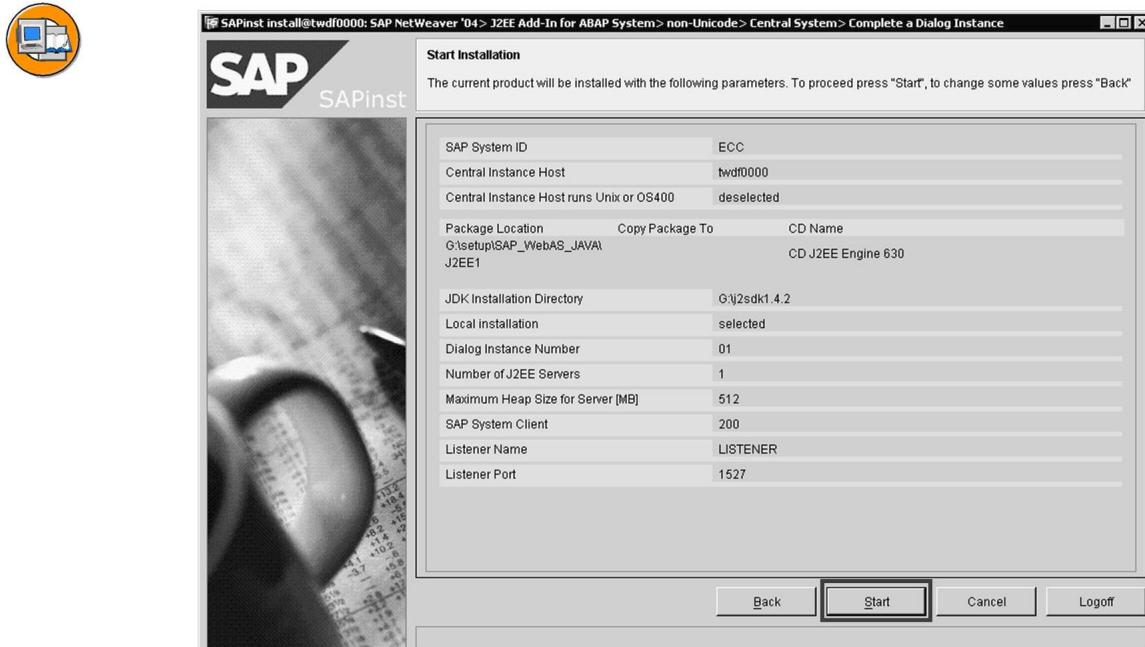
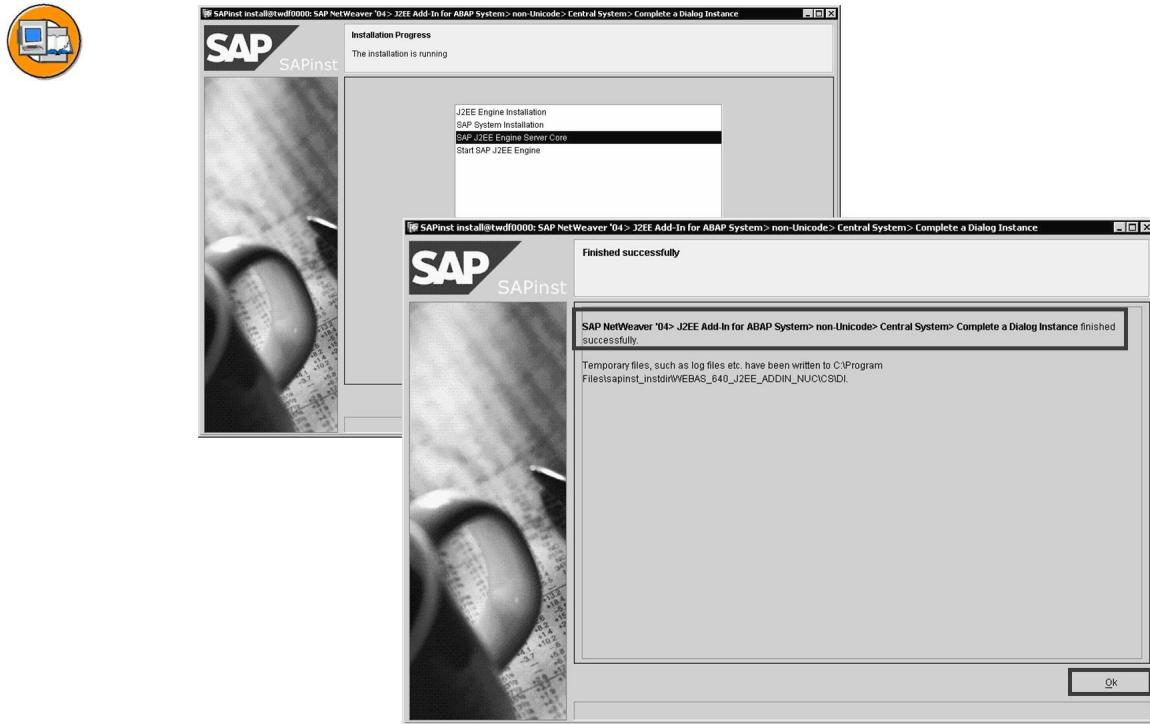


Figure 159: Installation Summary

Check your input in the *Summary* screen and start the installation.



**Figure 160: Installation Progress**

SAPinst displays the progress of the installation by highlighting the currently active installation phase.

**Congratulations!!** You have just installed a J2EE Add-in on the Dialog Instance



## Exercise 9: Install a SAP Web AS Java Dialog Instance

Exercise Duration: 10 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Install a SAP Web AS Java Dialog Instance

### Business Example

ABC is a petrochemical company that wants to install SAP ERP Central Component. As the system administrator of ABC Limited, you need to start the installation of a SAP Web AS Java Dialog Instance.

#### Task:

Install the SAP Web AS Java Dialog Instance on the server you are using for the training, e.g. on twdf0###.

1. Start SAPinst from the SAP\_Installation\_Master\_NW04\_ORA DVD.
2. Perform the Dialog Instance J2EE add-in installation.

## Solution 9: Install a SAP Web AS Java Dialog Instance

### Task:

Install the SAP Web AS Java Dialog Instance on the server you are using for the training, e.g. on twdf0###.

1. Start SAPinst from the SAP\_Installation\_Master\_NW04\_ORA DVD.
  - a) Start SAPinst from the SAP\_Installation\_Master\_NW04\_ORA DVD. Follow the exercise description.
2. Perform the Dialog Instance J2EE add-in installation.
  - a) Perform the Dialog Instance J2EE add-in installation. Follow the exercise description.



## Lesson Summary

You should now be able to:

- Install a SAP Web AS Java Dialog Instance

**Lesson: Appendix: SAP Gateway Installation**

Lesson Duration: 0 Minutes

**Lesson Overview**

This appendix describes the installation of a stand-alone SAP Gateway.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Install a stand-alone SAP Gateway instance



This Appendix is strictly optional. Only demonstrate the installation of the Gateway if time allows.

**Business Example**

Your system administrator would like to enable communication from your freshly-installed SAP R/3 ERP Central Component system to some legacy SAP R/2 systems. For this communication, a stand-alone Gateway is useful.

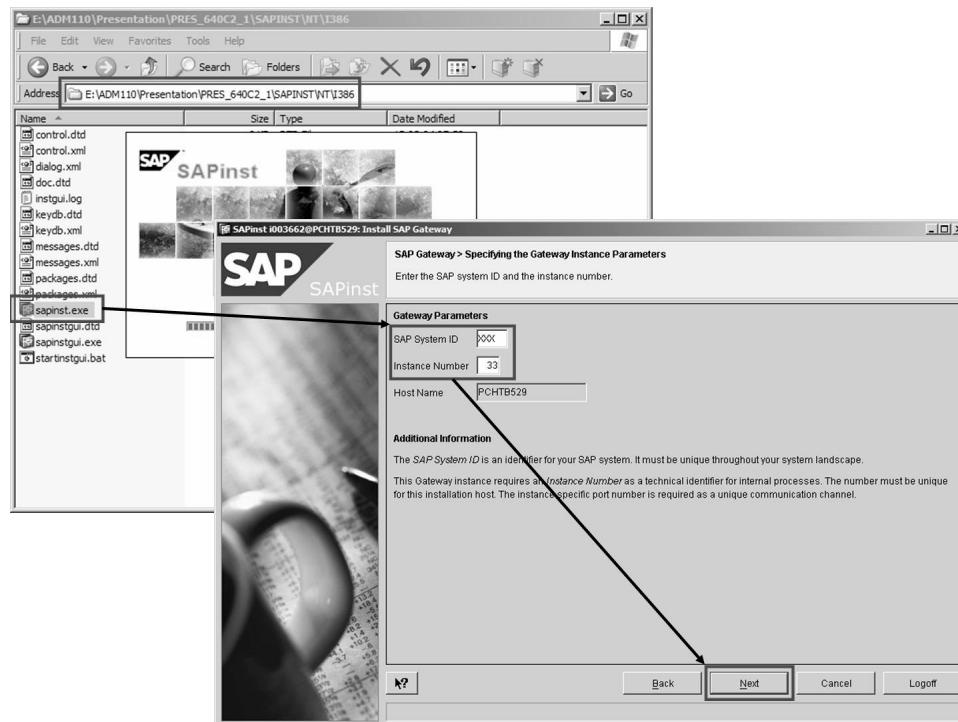


Please treat this lesson as an appendix.

**Appendix: Gateway Instance Installation**

To install a standalone SAP gateway, run SAPinst.exe from the Presentation DVD in the path \PRES\_620C6\_1\SAPINST\NT\I386.

For more information, refer to SAP note 668607.

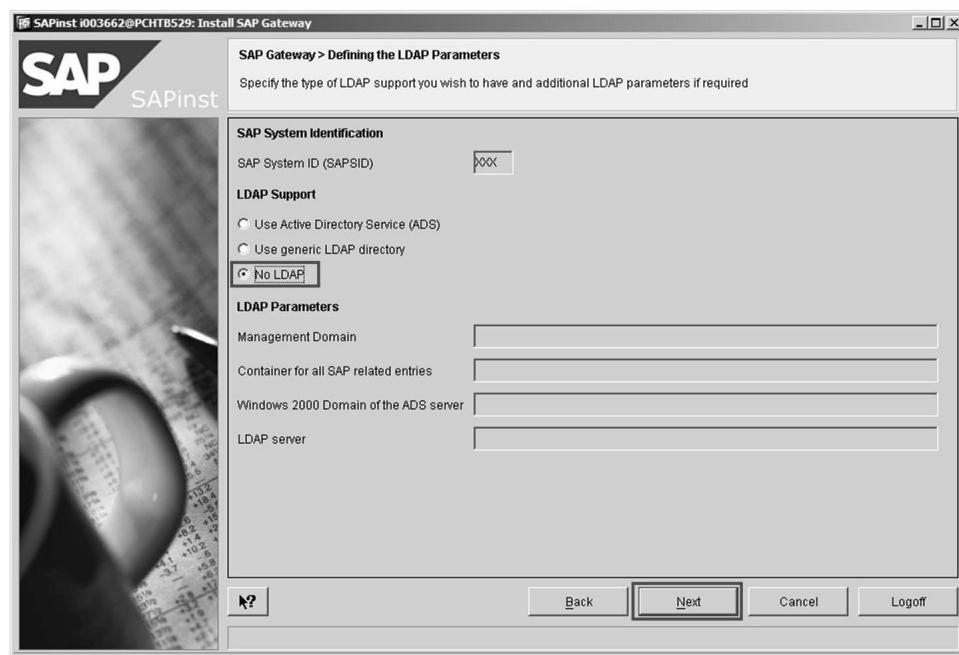


**Figure 161: Start SAPinst.exe**

Enter a new SAP system ID in the *SAP System ID* field. Do not use an SAP ID that you entered during a central instance installation.

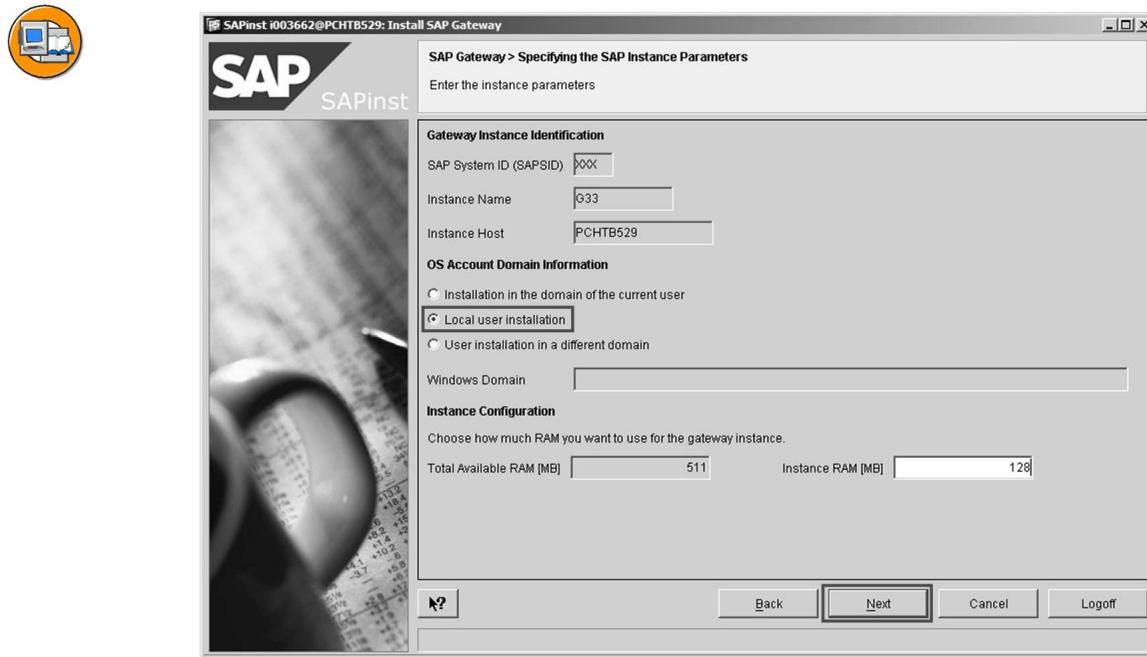
In the *Instance Hostname* field, enter the name of the gateway instance host.

In the *Instance Number* field, enter the number of the gateway instance. You can assign a number from 0 to 97, but **not** the numbers 2, 25, 60, 72, or 89.



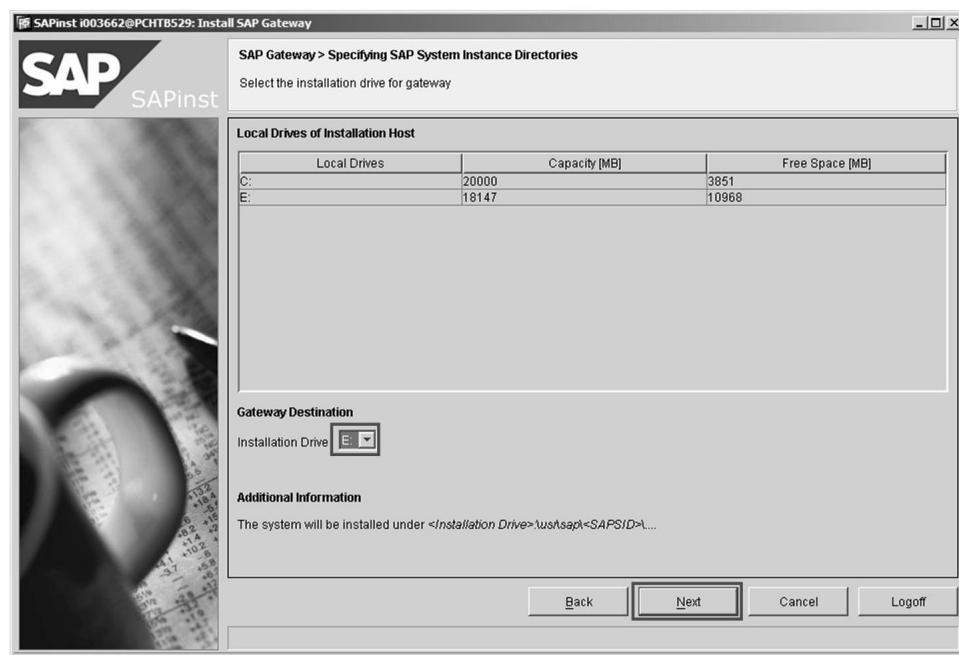
**Figure 162: LDAP Configuration**

Select *No LDAP* if you do not want to use an LDAP service.



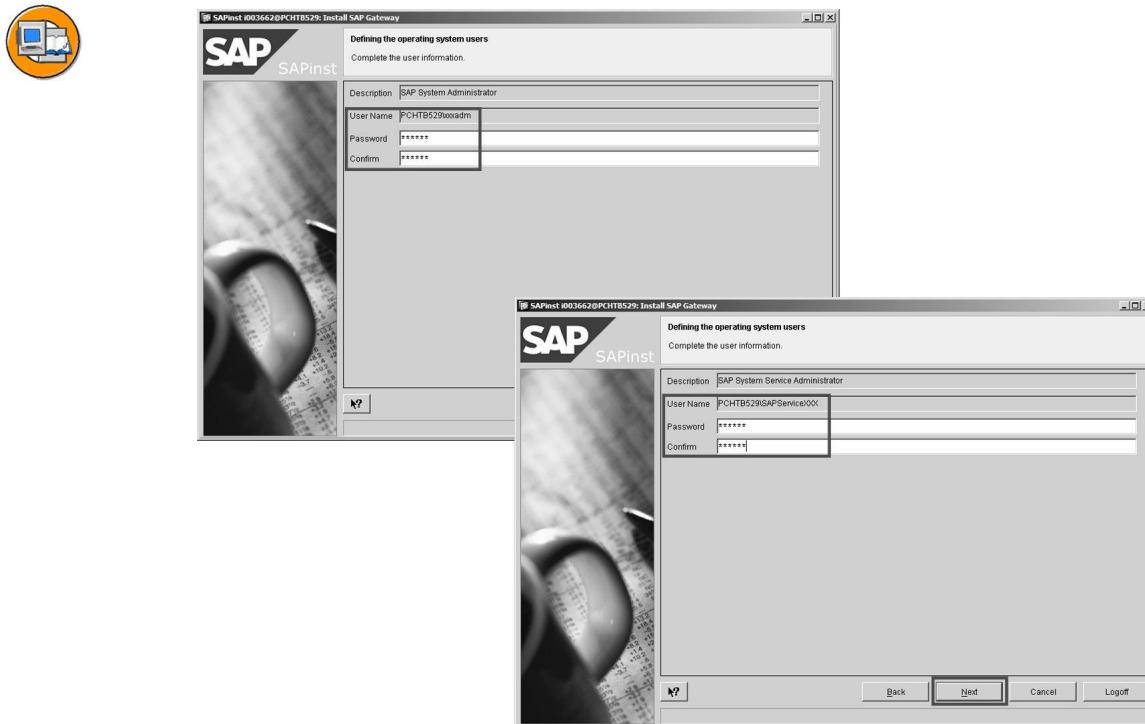
**Figure 163: Local Installation and Memory**

Select *Local User Installation* and enter the memory value.



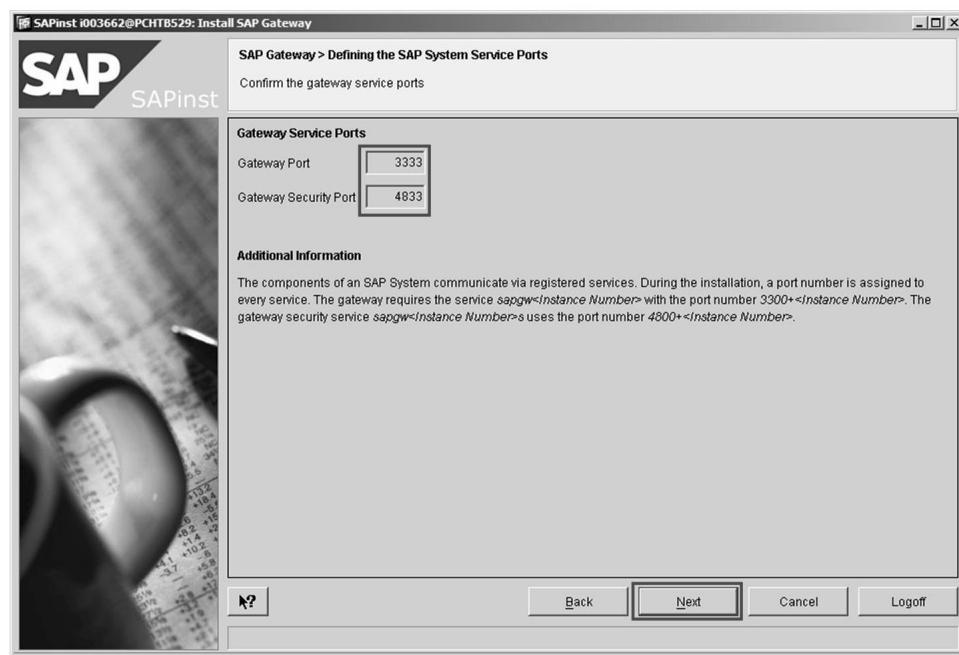
**Figure 164: Installation Directory**

Enter the drive letter for the gateway installation.



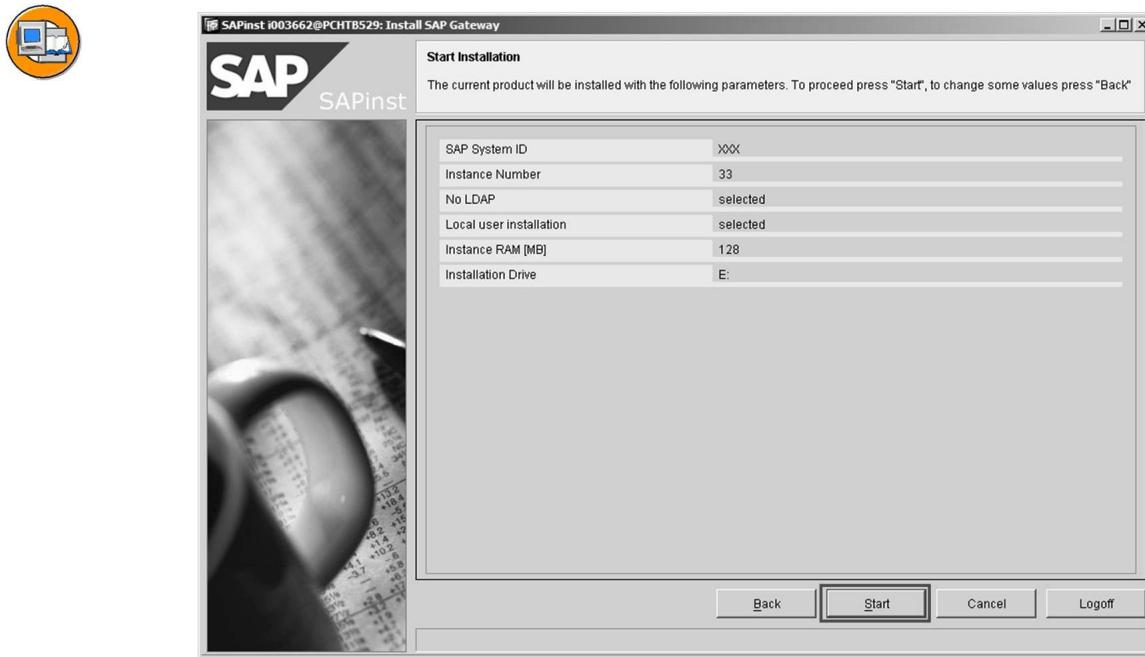
**Figure 165: Entering the Operating System Users Passwords**

Enter and confirm the password for user <sid>adm and SAPService<SID>.



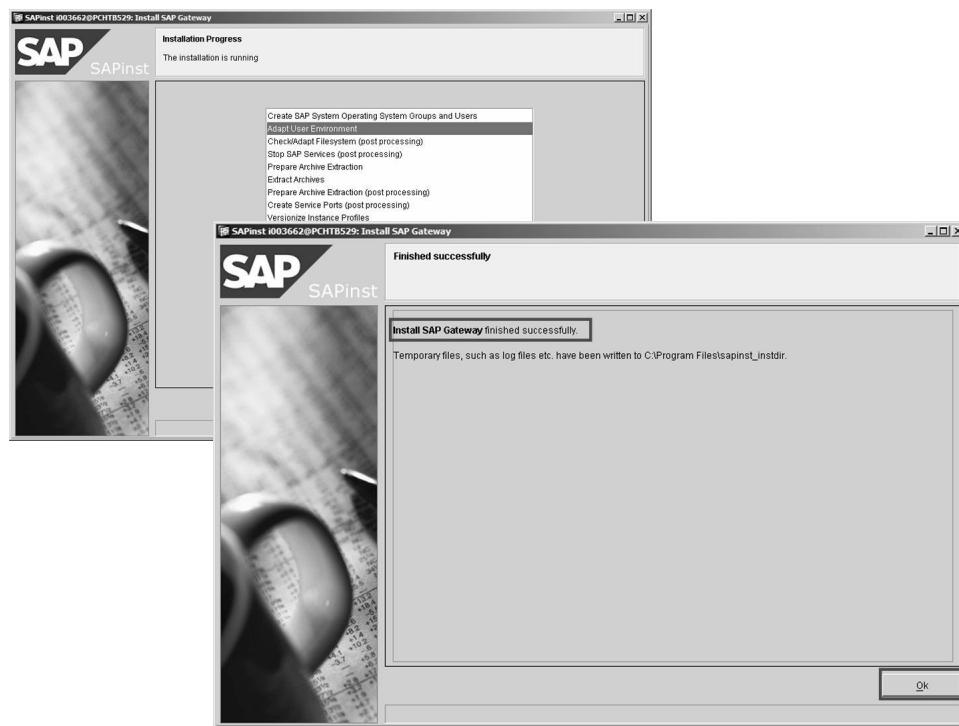
**Figure 166: Gateway Service Port Numbers**

Check the port numbers for the gateway installation.



**Figure 167: Installation Summary**

Check your input in the gateway installation summary screen.



**Figure 168: Installation Progress and Finished Installation**

SAPinst displays the progress of the installation by highlighting the currently active phase.

**Congratulations!!** you have just installed a SAP Gateway.



## Facilitated Discussion

No discussion for this appendix

## Discussion Questions

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

No discussion for this appendix

---



## **Lesson Summary**

You should now be able to:

- Install a stand-alone SAP Gateway instance

## **Related Information**

- See the installation guide for Gateway installation at <http://service.sap.com/installguides>.



## Unit Summary

You should now be able to:

- Explain the SAPinst architecture
- Explain the log and XML files used by SAPinst
- Install SAPinst
- Explain SAPinst GUI Handling
- Install the Oracle Database software according to the SAP specifications
- Apply an Oracle Patch using the Universal Installer
- Apply a Oracle interim patch using the OPatch tool
- Install a central instance
- Install the database instance
- Install a ABAP Dialog Instance
- Install SAP Web AS Java Central Instance
- Install a SAP Web AS Java Dialog Instance
- Install a stand-alone SAP Gateway instance

### Related Information

SAP Service Marketplace, <http://service.sap.com/instguides>





## Test Your Knowledge

1. You can use the \_\_\_\_\_ to install Oracle patch sets.

*Fill in the blanks to complete the sentence.*

2. The OPatch tool is used for:

*Choose the correct answer(s).*

- A Installing interim patches
- B Deleting patch sets
- C Uninstall interim patches
- D Installing Perl programs

3. How can you recognize that SAPinst is checking the availability of a software package or CD labels?

---

---

---

---

4. You cannot use a database instance ID that is different from the SAP system ID.

*Determine whether this statement is true or false.*

- True
- False

5. The Kernel CD is required for the database instance installation.

*Determine whether this statement is true or false.*

- True
- False

6. While installing the dialog instance, the port number that you specify for the message server port can be different from the one specified on the central instance host.

*Determine whether this statement is true or false.*

- True
- False

7. During the SAP J2EE Add-in installation, the Central Instance profile is changed. How do you activate these changes?

---

---

---

8. What is the minimal RAM required for SAP Web AS Java?

---

---

---

9. The \_\_\_\_\_ user is used for RFC communication between ABAP and Java stack.

*Fill in the blanks to complete the sentence.*

10. When installing a Dialog Instance, J2EE Add-in DDIC user is used to setup the operation system account for <sid>adm.

*Determine whether this statement is true or false.*

- True
- False



## Answers

1. You can use the Oracle Universal Installer to install Oracle patch sets.

**Answer:** Oracle Universal Installer

The Oracle Universal Installer is used for installing the Oracle Database software **and** Oracle patch sets.

2. The OPatch tool is used for:

**Answer:** A, C

The OPatch tool is only used to install/uninstall interim patches.

3. How can you recognize that SAPinst is checking the availability of a software package or CD labels?

**Answer:** The Check Location flag is marked in the CD browser window.

4. You cannot use a database instance ID that is different from the SAP system ID.

**Answer:** False

You can use a database instance ID that is different from the SAP system ID. However, it is recommended that you use the same ID for both the database instance and the SAP system.

5. The Kernel CD is required for the database instance installation.

**Answer:** True

SAPinst asks for the Kernel CD.

6. While installing the dialog instance, the port number that you specify for the message server port can be different from the one specified on the central instance host.

**Answer:** False

During the installation of the dialog instance, the port number for the message server port must be the same as the one specified on the central instance host.

7. During the SAP J2EE Add-in installation, the Central Instance profile is changed. How do you activate these changes?

**Answer:** By restarting your SAP system.

8. What is the minimal RAM required for SAP Web AS Java?

**Answer:** 512 MB

9. The SAPJSF user is used for RFC communication between ABAP and Java stack.

**Answer:** SAPJSF

10. When installing a Dialog Instance, J2EE Add-in DDIC user is used to setup the operation system account for <sid>adm.

**Answer:** False

The DDIC user is used to setup the RFC communication setting for the SAPJSF user.

# Unit 6



## Performing Post-Installation Activities



After an installation, there are some necessary, binding and optional actions. This unit describes all the activities. Depending on the knowledge of the learners, you can provide less or more detailed information to enable them to perform the post-installation activities.

### Unit Overview

This unit explains the necessary post-installation activities. After going through the unit, you will be able to perform all necessary post-installation activities.



### Unit Objectives

After completing this unit, you will be able to:

- Describe the procedure to restart SAP ERP Central Component and perform final checks
- Describe the steps to install SAP License
- Describe the steps to install SAP online documentation
- Describe the steps to install and configure SAProuter
- Describe the steps needed to perform and configure TMS
- Perform final installation checks
- Describe the steps to activate SAP ERP Central Component Extension Set
- Describe the steps to install additional languages
- Describe the steps to perform a full backup
- Describe the steps to verify the settings of SAP Web AS Java
- Describe the steps to start and schedule SAP Load Generator
- Perform some special post-installation activities

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**Lesson: Installation of SAP License and Other Components**

Lesson Duration: 25 Minutes

**Lesson Overview**

The lesson describes how to restart SAP ERP Central Component, perform final checks, and install SAP License, SAP online documentation, and SAProuter.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Describe the procedure to restart SAP ERP Central Component and perform final checks
- Describe the steps to install SAP License
- Describe the steps to install SAP online documentation
- Describe the steps to install and configure SAProuter



After an installation, some binding and optional actions are necessary. First, see if SAP ERP Central Component can be started and stopped once it is installed.

**Business Example**

ABC Limited, a petrochemical company, uses SAP to manage its data. The company now wants to install the latest version of SAP system, SAP ERP Central Component, to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator in the company, you have installed SAP ERP Central Component. Now you need to perform the necessary post-installation activities, such as restarting SAP ERP Central Component, performing final checks and installing SAP License.



While installing SAP ERP Central Component on Windows 2000 with Oracle, you cannot stop SAP ERP Central Component and the database with the 'stopsap' command. To shut down the database, you have to use the command line tool brtools.exe. To use this tool logon to the system as <sid>adm and open a command prompt



**Caution:** SAPDBA is not supported anymore!

## Procedure to Start and Stop the SAP System



- Log on to operating system with user <sapsid>adm and start the command or alias *startsap*.

```
C:\>C:\WINNT\System32\cmd.exe  
Microsoft Windows [Version 5.00.2195]  
(C) Copyright 1985-2000 Microsoft Corp.  
C:\>Documents and Settings\devadm>startsap
```

- Check whether database and SAP system are running.
- Log on to SAP system with standard user SAP\* or DDIC.
- Stop SAP system using the command or alias *stopsap* from operating system level.

```
C:\>C:\WINNT\System32\cmd.exe  
Microsoft Windows [Version 5.00.2195]  
(C) Copyright 1985-2000 Microsoft Corp.  
C:\>Documents and Settings\devadm>stopsap
```

**Figure 169: Start and Stop the SAP System**

You can use this procedure to see if you can start and stop SAP ERP Central Component after the installation.

To log on, install an interface such as the SAP GUI. The two standard users, SAP\* and DDIC, in SAP ERP Central Component after the installation are:

- SAP\* in client 000, 001, 066
- DDIC in client 000, 001



**Hint:** The first thing after you have logged on to the system is to create a own SAP user account by copying DDIC. Many post processing activities can NOT be performed as SAP\* or DDIC.



- **Check the following operating system files in directory \usr\sap\<SID>\DVEBMGS<no>\WORK:**

- dev\_ms
- dev\_disp
- dev\_w0
- dev\_rd



- **Check transactions:**

- **SM50 (all available work processes for the instance)**
- **SM51 (all available instances)**
- **SM21 (systemlog)**

**Figure 170: Checking SAP System Services**

Check SAP system services to solve the initial problems that might occur when trying to log on to or run the system for the first time.



Once the license key expires or changes are made to your hardware platform, the standard license is no longer valid. In this case, you can install a temporary SAP License using the SLICENSE transaction (or the saplicense -temp program). The MLICHECK table contains all license-specific data for an SAP System.

## Steps to Install SAP Licenses

Install a new permanent license after you do the following:



- Perform a new SAP system installation
- Rename your SAP system ID
- Change the message server host
- Change an existing hardware configuration, change of hardware key, and database type

The SAP License number must be 18 characters; you can enlarge it with leading zeros.

To work with SAP ERP Central Component, you require an SAP License. After the installation of the central instance, a temporary license is active only for four weeks. During this period, you must install a permanent license. If the temporary license expires, only the SAP\* user can log on to SAP ERP Central Component. With this temporary license, you cannot create new repository objects or modify SAP repository objects.

You can install several licenses. When you change the installation number, all dependent information, such as SSCR, is lost.

To request license keys, go to the SAP Service Marketplace (<http://service.sap.com/licensekey>). Choose mySAP Business Suite to reach the request page for license keys.

For more information, see SAP note 94998.



### Use transaction SLICENSE to install a new SAP license

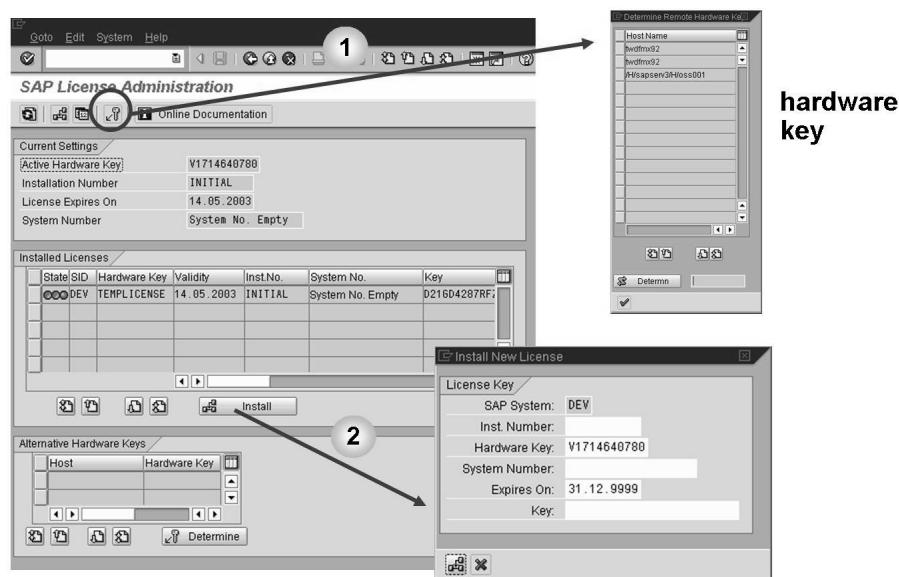


Figure 171: Installing SAP Licenses

You can use transaction SLICENSE to determine the hardware key on all computers where an RFC connection is maintained.

On the initial screen of the transaction SLICENSE, choose *Goto → Determine hardware key*. Select the *Hostname* and choose *Determine* to execute *saplicense -get* on the selected computer and to receive the hardware key as a result.

You can install a new SAP License on your SAP system using the SLICENSE transaction. After the license is installed, the license key is activated immediately. After that, *Saplicense -install* is executed on the computer.



Install SAP online documentation, as described in ‘Installing Online Documentation’ contained in the root directory of the SAP Library - Online Documentation CD. You need a PC running Microsoft Windows to install HTMLHelp Viewer for the Online Documentation CD.

### Installing SAP Backup Library or Legato Storage Manager

This is an optional post-installation step only for Oracle 9.2.x. If you want to extend the backup functionality to include, for example, incremental backup, you must use one of the following backup libraries:

- SAP backup library
- Legato Storage Manager
- The backup tool of a third-party vendor that implements the backup interface of Oracle
- Recovery Manager

The use of a backup library is optional. You can install a backup library any time after the Oracle installation.

For more information on how to install and use the SAP backup library and Legato Storage Manager, see SAP note 142635. When installing third-party backup software, follow the vendor's instructions.

---

## Steps to Install SAP Online Documentation



- **Online help on the CD-ROM  
SAP Library is delivered in two file formats:**
  - Standard HTML (PlainHtml, DynamicHelp)
  - Compiled HTML (HtmlHelp)

- **For online access from the SAP system, both formats require the following steps:**
  1. Installing the help files
  2. Customizing setup variants for Online Help
  3. Installing a Web browser or viewer

**Figure 172: Installing SAP Online Documentation**

There is one CD for each language containing both formats, standard HTML and compiled HTML.

With help type PlainHtmlHttp (installation of help files on a Web server), you also need to maintain Web server settings.

For more information about installing SAP online documentation, refer to *Installing the Online Documentation in the root directory of the SAP Library - Online Documentation CD*.

General information to install the helpfiles:

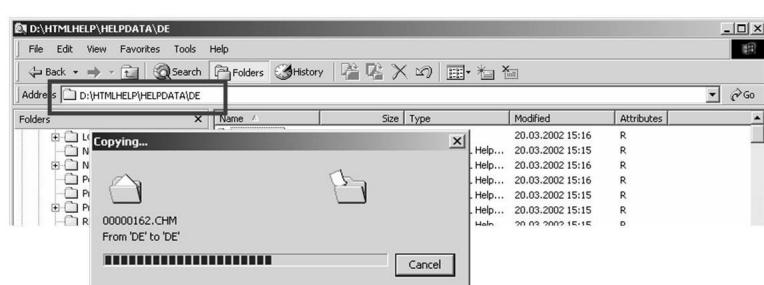


- Use separate directories for different language versions of the documentation.
- Use a two-character language key, such as EN for English and FR for French, for directory names.

When accessing documentation online, the help processor expects directories that are named with their respective two-character language keys, such as EN for English and FR for French.



- **Install help files from directory Htmlhelp\Helpdata on the SAP Library CD-ROM:**
  1. Create a directory on your file server.
  2. Copy the directory Htmlhelp\Helpdata\<language key> with all its subdirectories from the CD to the documentation directory on the server.



**Figure 173: Installation of Help Type HtmHelpFile**

#### Compiled HTML (HTML Help): HtmlHelpFile

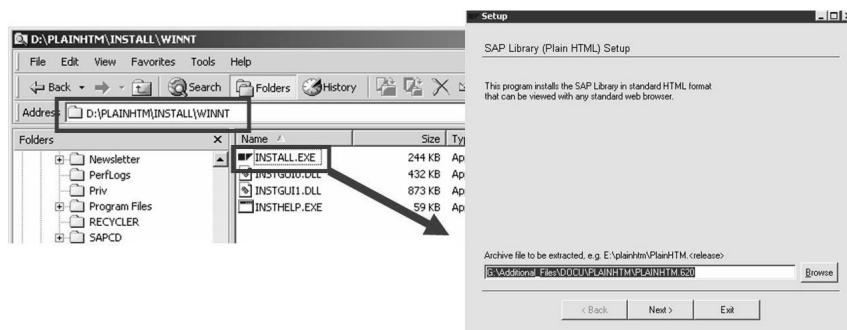
- Compiled HTML provides direct access to files with Microsoft HTML-Help Viewer.
- Disk space for one language version should be 250 MB for SAP Web Application Server
- For performance reasons, copy help files to local hard disks or a file server.

About 500 MB disk space is needed for the German and English language versions.



- **Install the help files and the search engine and search index from the directory Plainhtm on the SAP Library CD .**

1. Create a directory on the Web server
2. Use the install program on the CD-ROM that matches the operating system of your Web server (directory Plainhtm/Install/<operating system>).



**Figure 174: Installation of PlainHtmlHttp, PlainHtmlFile (1/2)**

#### Standard HTML: PlainHtmlHttp, PlainHtmlFile

- You cannot view files directly from the CD.
- Files are stored in packed format on the CD-ROM. Unpack the files on the local hard disk or on a file server.
- A Web search engine and index data for a full-text search are delivered on the CD-ROM.

#### Documentation directory:

- Approximately 600 MB disk space is required for one language version (Windows NTFS). Storage requirements depend on the file system and can count up to 2 GB (UNIX).
- The complete installation of SAP Web AS includes about 200 thousand files in about 100 thousand directories for one language version.

To be able to use the search function, your Web server must run on one of these platforms: IBM AIX, Digital Unix, HP-UX, SUN Solaris, or Windows.

You cannot install online help on a Microsoft FAT32 file system because it cannot handle the large number of files and directories. If your Web server runs under Microsoft Windows NT or Windows 2000, do **not** install SAP Library on the system partition; choose another partition.

The install program uses the insthelp program and is available only for Windows and UNIX, with a graphical user interface. Under OS/2 and OS/400, you have to use insthelp directly.

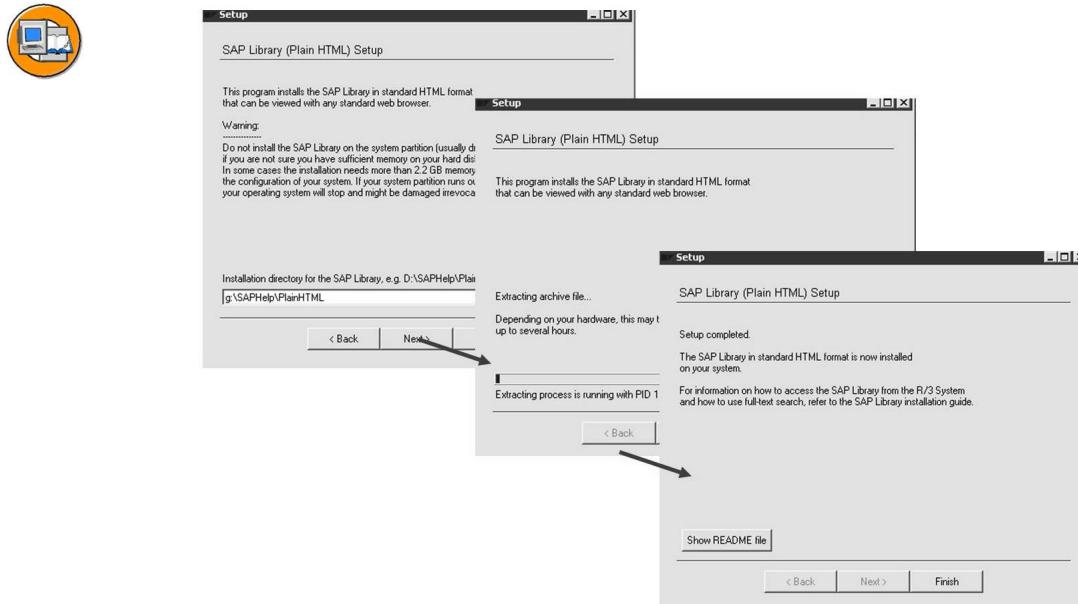
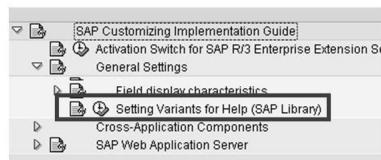


Figure 175: Installation of PlainHtmlHttp, PlainHtmlFile (2/2)



- **Maintaining setup variants for Online Help:**

- **IMG activity: Transaction SPRO → General Settings  
→ Setup variants for online help (SAP Library)**



- **Installing one of these Web Browsers or Viewers:**

- **HTML-Help Viewer with Microsoft Internet Explorer**
- **Microsoft Internet Explorer**
- **Netscape Navigator**

Figure 176: Setup Variants and Browsers for Online Help

For a given front-end platform, a setup variant specifies a help type, the location of help files (server and/or path), and the language version of help files.

The language version specified in the currently active setup variant determines which language version of the online help displays, regardless of the user's logon language.

As of Release 4.6C, maintaining SAP profile parameters for online help has no effect.

The HTML-based online documentation can display with a Web browser on all front-end platforms supported by SAP. However, certain requirements and restrictions must be observed, based on the platform. For more information, refer to the installation guide, *Installing the SAP Library*.

For more information on setup variants for Online Help, see course ADM100.



#### SAProuter permissions table (see SAP note 30289)

The route permission table contains the host names and port numbers of the predecessor and successor points on the route (from the SAP router's point of view), as well as the passwords required to set up the connection. You use it to specify which connections are allowed and which prohibited by SAProuter.

You must create a separate route permission table for each SAProuter on your network.

If a specific route permission table has not been assigned to SAProuter, ./saprouttab is used under UNIX. Under Windows the saprouttab file is searched in the system32 directory. If this file is not available, SAProuter terminates with an appropriate message. You can use generic entries ("\*") in hosts, ports, and passwords.

*Standard entries in a route permission table appear as follows: P/S/D<source-host><dest-host><dest-serv><password><source-host>and<dest-host> could be SAP routers.*

P(ermit) causes SAProuter to set up the connection. P(ermit) entries can contain a password. SAProuter checks whether this password corresponds to that sent by the client.

S(ecure) only allows connections with the SAP protocol; connections with other protocols, such as TCP, are not allowed. See Network Security with SAProuter.

D(eny) prevents the connection from being set up.

### SAP router and SAPNet-R/3 Front-end: Windows

1. Create the saprouter subdirectory in the <drive>:\usr\sap directory.
2. Obtain the most recent version of SAProuter from sapservX, directory /general/misc/saprouter/. Refer to the related file, README, in this directory. Copy the saprouter.exe and niping.exe executables to the directory you have just created.
3. If SAProuter has already been entered as a service with srvany.exe, remove the definition of the service from the Registry and restart the host.

Define the service with the following command:

```
ntscmgr install SAProuter -b \usr\sap\saprouter\saprouter.exe -p "service -r <parameter>"
```

4. Define the general attributes of the service: Set the startup type to automatic and enter a user. SAProuter should not run under System Account.
5. To avoid the error message, "The description for Event ID (0)", in the Windows event log, you must enter the following in the registry: Under *HKEY\_LOCAL\_MACHINE → SYSTEM → CurrentControlSet → Services → Eventlog → Application*, create the saprouter key and define the following values under it:

EventMessageFile (REG\_SZ): ....\saprouter\sapevents.dll

TypesSupported (REG\_DWORD): 0x7

**Important:** These adjustments are not obligatory to run SAProuter on Windows. They serve only to provide detailed error messages in the event log.

6. Maintain the route permission table in the Windows system32 directory. If you want to keep it in another directory or under a name other than saprouttab, you must specify this with the SAProuter option, -R (see Option -R <routtab>).

### SAP router and SAPNet-R/3 Frontend: Unix

1. Create the saprouter subdirectory in the directory /usr/sap/.
2. Obtain the most recent version of SAProuter from sapservX, directory /general/misc/saprouter/ and copy the saprouter and niping programs to the /usr/sap/saprouter directory. Refer to the related file, README, in this directory.
3. Insert the following lines into the start script (prior to 6.10:  
\$HOME/startsap\_<host>\_<instance number>under user<SID>adm; as of 6.10:  
/usr/sap/SYS/exe/run/startsap)

insert the following lines:

```
#  
# Start saprouter  
#  
SRDIR=/usr/sap/saprouter  
if [ -f $SRDIR/saprouter ] ; then  
echo "\nStarting saprouter Daemon " | tee -a $LOGFILE  
echo "-----" | tee -a $LOGFILE  
$SRDIR/saprouter -r -W 30000 -R $SRDIR/saprouttab \  
| tee -a $LOGFILE &  
fi
```

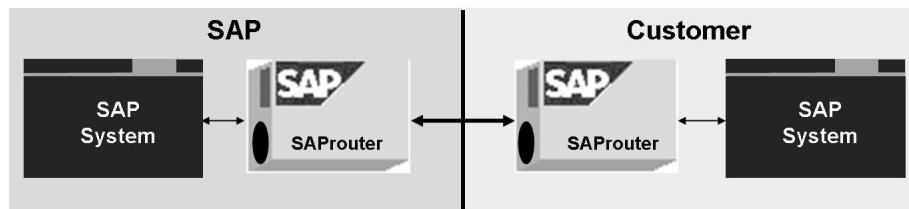
4. Maintain the route permission table in the /usr/sap/saprouter directory. If you want to keep it in another directory or under a name other than saprouttab, you must specify this with the SAProuter option, -R (see Option -R <routtab>).

### SAProuter

You require SAProuter if you are using any of the following:



- SAPNet-R/3 Frontend
- EarlyWatch
- Remote Consulting



**Figure 177: SAProuter and SAPNet-R/3 Frontend**

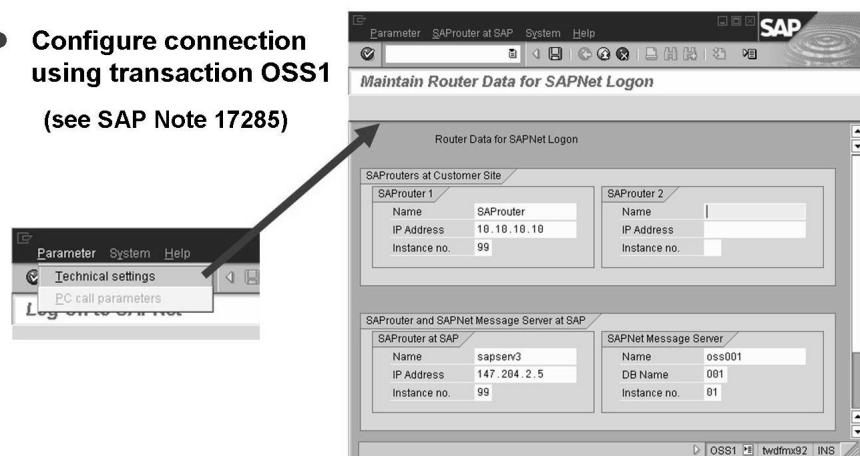
**SAProuter** increases network security and simplifies network configuration. SAProuter allows you to make indirect network connections. SAProuter software is included in the standard SAP kernel. An additional installation is not required.

**SAPNet-R/3 Frontend** is the SAP-based service system, which provides the technical link between SAP customers and SAP. SAPNet-R/3 Frontend was known as Online Service System. SAProuter controls connections from SAP to your SAP system.

SAProuter is started as a demon under UNIX and as a service under Windows.



- Install SAProuter (see SAP Note 30289).
- Configure routing table (see SAP Note 30289).
- Start SAProuter (see SAP Note 30289).
  
- Configure connection using transaction OSS1 (see SAP Note 17285)



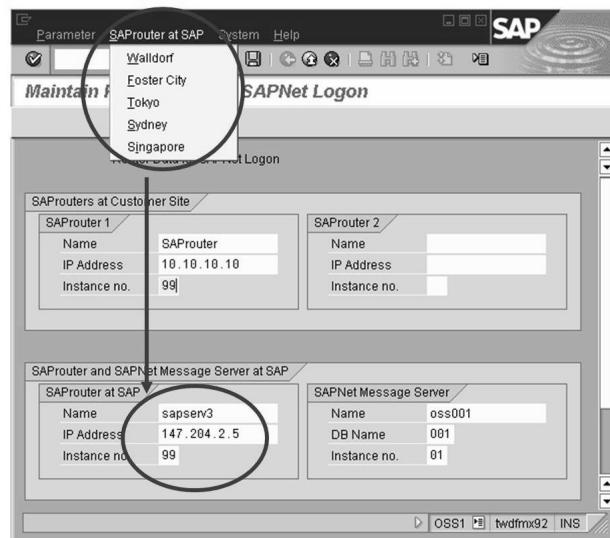
**Figure 178: Configuring SAProuter and SAPNet-R/3 Frontend**

For information about installing SAProuter on the AS400 platform, read SAP note 86329.

For more information on using SAProuter, see course ADM960.



- Select the suitable SAProuter at SAP



**Figure 179: Configuring SAProuter and SAPNet-R/3 Frontend**

Select the suitable SAProuter in SAP.

For more information on setting up and using SAPNet-R/3 Frontend, refer to the documentation at the following locations:

- SAP Service Marketplace at <http://service.sap.com/sapnet-guide>
- SAP Library (choose *Help → SAP Library* in your SAP system or access SAP Library at <http://help.sap.com>)

For information on installing SAProuter as a Microsoft Windows service, see SAP note 41054.

Also see SAP notes:

- Remote connection: SAP note 14716
- Log on to Online Service System: SAP note 17285
- SAProuter: SAP note 30289
- Security aspects for remote access: SAP note 46902





## Exercise 10: Perform the Necessary Final Checks and Post-Installation Activities

Exercise Duration: 20 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Stop and restart SAP ERP Central Component and perform the final checks
- Check the installed license
- Install SAProuter for SAPNet-R/3 Frontend access

### Business Example

You are the system administrator of ABC Limited, a petrochemical company. You installed the latest version of SAP, SAP ERP Central Component. Now, you need to restart SAP ERP Central Component, perform the final checks, and install SAP License and other components.

#### Task 1:

Restart SAP ERP Central Component and perform the final checks.

1. Stop and restart SAP system using Microsoft Management Console. To do this, log on to the server for your training system using Terminal Server Client or pcAnywhere.
2. Check developer traces on the operating system. Log on to SAP ERP Central Component and perform, in SAP system transaction SM50, SM51, and SM21, to check work processes and systemlog for errors.

#### Task 2:

Check the installed license.

1. Check whether a temporary license is installed.
2. Request the hardware key.

*Continued on next page*

### Task 3:

Install, start, and configure SAProuter for SAP-R/3 front-end access.

SAP note 30289 is stored on the server used for the course, such as twdf####, in the G:\SETUP\Adm110\SAP\_Notes directory.

1. Install SAProuter and create the saprouttab permission file.  
Proceed as described in SAP note 30289, unit 3.2 (Installation under Windows), steps 1 and 2. Use the saprouter.exe and niping.exe executables from the G:\usr\sap\<SID>\SYS\exe\run directory.
2. Create the saprouttab route permission table.  
Create the saprouttab file in the G:\usr\sap\saprouter directory and add the "P \* \* \*" entry.
3. Start SAProuter.  
Proceed as described in SAP note 30289, step 4.1 (Starting SAProuter).
4. Implement SAProuter as a service.  
Stop saprouter with the command saprouter - s.  
Proceed as described in SAP note 30289, unit 3.2, Installation Under Windows, steps 4 and 5.
5. Check the technical settings in transaction OSS1.

## Solution 10: Perform the Necessary Final Checks and Post-Installation Activities

### Task 1:

Restart SAP ERP Central Component and perform the final checks.

1. Stop and restart SAP system using Microsoft Management Console. To do this, log on to the server for your training system using Terminal Server Client or pcAnywhere.
  - a) Start Terminal Server Client or pcAnywhere and enter the physical host name. Log on to the operating system as the <sid>adm user.
  - b) Start Microsoft Management Console by choosing the appropriate icon. Select the desired instance(s), right-click and choose the *Stop function* from the context menu. Depending on whether you choose an individual instance or SAP ERP Central Component, either an individual instance or the entire SAP system stops.
  - c) Choose the node for the central instance in the Microsoft Management Console tree. Select the desired instance(s), right-click and choose *Start*. Start the dialog instance in the same way.
2. Check developer traces on the operating system. Log on to SAP ERP Central Component and perform, in SAP system transaction SM50, SM51, and SM21, to check work processes and systemlog for errors.
  - a) On the operating system, open the dev\_ms, dev\_disp, dev\_rd, and dev\_w# (#= 0, 1) files, located in the (G:\usr\sap\<SID>\D\*\work) instance directory using Windows Explorer. Check the files due to errors.
  - b) Log on to your SAP system. The SAP server (*Tools → Administration → Monitor → System Monitoring → Servers or transaction SM51*) displays the active SAP instances. The process overview (*Tools → Administration → Monitor → System Monitoring → Process Overview or transaction SM50*) displays the list of work processes of the instance to which you are logged on.
  - c) Check the system log to find errors (*Tools → Administration → Monitor → System log or transaction SM21*).

*Continued on next page*

## Task 2:

Check the installed license.

1. Check whether a temporary license is installed.
  - a) Start transaction SLICENSE (*Tools → Administration → Administration → SAP Licenses*) and look at the Installed Licenses table to see the installed temporary license for your <SID>.
2. Request the hardware key.
  - a) Start transaction SLICENSE (*Tools → Administration → Administration → SAP Licenses*) and choose *Goto → Determine Hardware Key*.
  - b) Select your server, choose *Determine*, and choose *Continue*, which is the green arrow.

## Task 3:

Install, start, and configure SAProuter for SAP-R/3 front-end access.

SAP note 30289 is stored on the server used for the course, such as twdf####, in the G:\SETUP\Adm110\SAP\_Notes directory.

1. Install SAProuter and create the saprouttab permission file.

Proceed as described in SAP note 30289, unit 3.2 (Installation under Windows), steps 1 and 2. Use the saprouter.exe and niping.exe executables from the G:\usr\sap\<SID>\SYS\exe\run directory.

  - a) Read the SAP note and follow its instructions in Installation under Windows, steps 1 and 2.
2. Create the saprouttab route permission table.

Create the saprouttab file in the G:\usr\sap\saprouter directory and add the "P \* \* \*" entry.

  - a) Create a file with the name saprouttab in the G:\usr\sap\saprouter directory. Open the file and add the content: "P \* \* \*".
3. Start SAProuter.

Proceed as described in SAP note 30289, step 4.1 (Starting SAProuter).

  - a) Read the SAP note and follow its instructions in unit 4.1, Starting SAProuter.
4. Implement SAProuter as a service.

*Continued on next page*

Stop saprouter with the command saprouter - s.

Proceed as described in SAP note 30289, unit 3.2, Installation Under Windows, steps 4 and 5.

- a) Read the SAP note and follow its instructions in Installation Under Windows, steps 4 and 5.
5. Check the technical settings in transaction OSS1.
  - a) Proceed as described in this training material on the Configuring SAProuter and SAPNet - R/3 Frontend page.



## **Lesson Summary**

You should now be able to:

- Describe the procedure to restart SAP ERP Central Component and perform final checks
- Describe the steps to install SAP License
- Describe the steps to install SAP online documentation
- Describe the steps to install and configure SAProuter

## Lesson: TMS and Basic Configuration



Lesson Duration: 15 Minutes

### Lesson Overview

The lesson explains post-installation activities for Transport Organizer and describes the steps to perform and configure TMS.



### Lesson Objectives

After completing this lesson, you will be able to:

- Describe the steps needed to perform and configure TMS



If you have installed your SAP system from the SAP CD, you need not configure the Change and Transport System (CTS) after installation. However, if you have installed your SAP system as a copy of an existing SAP system, you must configure CTS after installation.

### Business Example

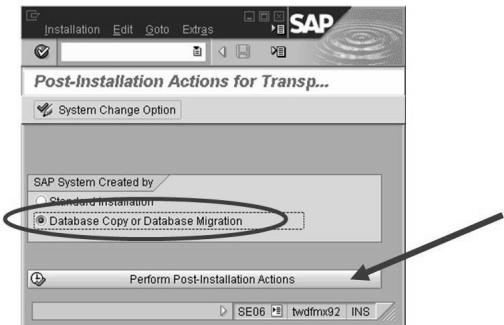
ABC Limited is a petrochemical company that uses SAP to manage its data. The company installed the latest version of SAP system, SAP ERP Central Component. You, as the system administrator of the company, installed SAP ERP Central Component. As a necessary post-installation activity, you need to perform and configure TMS.



### System Demo

Perform system demos based on learner knowledge and the timetable, as described in the exercises.

## Post-Installation Activities for Transport Organizer



**Figure 180: Post-Installation Activities for Transport Organizer**

If you have installed your SAP system from the SAP CD, you don't have to configure Change and Transport System (CTS) after installation. Basic settings for the CTS are generated during the configuration of the Transport Management System (TMS).

If you have installed your SAP system as a copy of an existing SAP system, you must configure CTS after installation.

If you set up an SAP system that originated from a database copy using *Standard installation*, problems could arise when you upgrade the system or modify objects with Transport Organizer.

Select *Database Copy or Database Migration* if SAP ERP Central Component was created based on a copy. SAPinst provides utilities to copy and migrate databases.

## Transport Management System (TMS) Configuration



Check and maintain  
(if necessary) permissions  
to directory /usr/sap/trans

### On transport domain controller:

- Log on in client 000, DDIC (not SAP\*)
- Start transaction STMS
- Transaction STMS in client 000 will:
  - Assign the SAP system as the transport domain controller
  - Create transport domain name DOMAIN\_<SID>
  - Create transport group GROUP\_<SID>
  - Create communication user TMSADM in client 000
  - Create RFC destinations
  - Set up file DOMAIN.CFG in directory

Figure 181: TMS Configuration: Transport Domain

For additional information, see course ADM325.



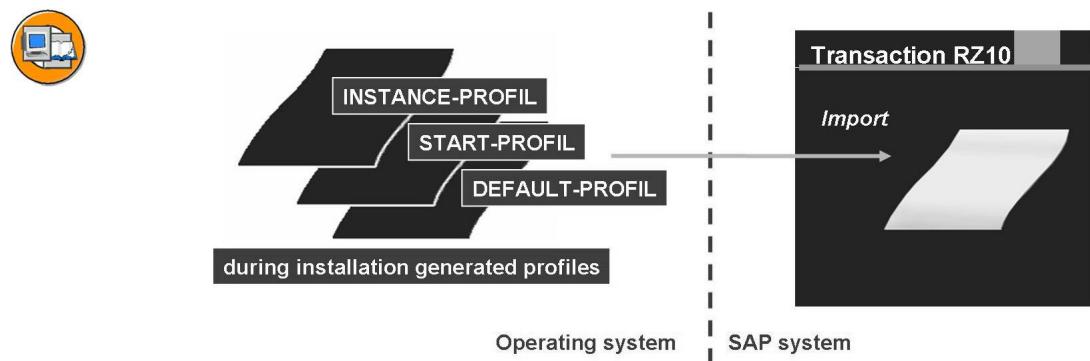
- After establishing a transport domain:  
Create transport routes from the domain controller, using the default standard configurations
  - One-system landscape
  - Two-system landscape
  - Three-system landscape
- Start transaction STMS and choose Overview → Transport Routes, change mode, Configuration → Standard Configuration
- Set the system change options (transaction SE06)

Figure 182: TMS Configuration: Transport Routes

To create transport routes, drag the appropriate SAP systems from the node area to the display area. To create a transport route between these SAP systems, from *Display Transport Routes*, choose *Configuration → Transport Route → Create Transport Route*. Draw a line connecting the two SAP systems between which you want to set up a transport route. In the *Create Transport Route* dialog box, enter the required information for either the consolidation or delivery route. Choose *Save*.

For additional information, see course ADM325.

## Basic Configuration



### Start import using transaction RZ10:

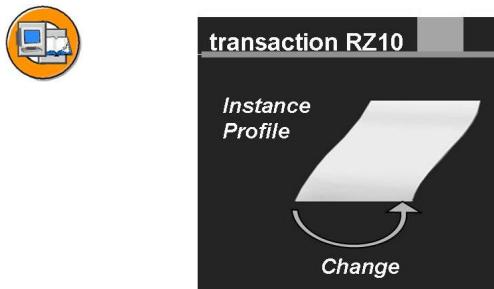


Figure 183: Basic Configuration: Import of Profiles

After the installation, the profile parameters are only present at file level. To use the profile administration of SAP ERP Central Component, profiles must be imported into the database. During this import, the system performs a consistency check and a check of the way in which the parameters interact. Changes to profile parameters can then be performed in SAP ERP Central Component. The profile parameters are then stored in the database and are written back to the file system level. The changes only take effect when they are read by the system on a system restart.

Perform the administration and maintenance of profiles in transaction RZ10. In the first step, you import the profiles into the database by choosing *Utilities → Import Profiles → Of active servers*. After selecting the profile to edit, you can change individual profile parameters.

For more information, see course ADM100.

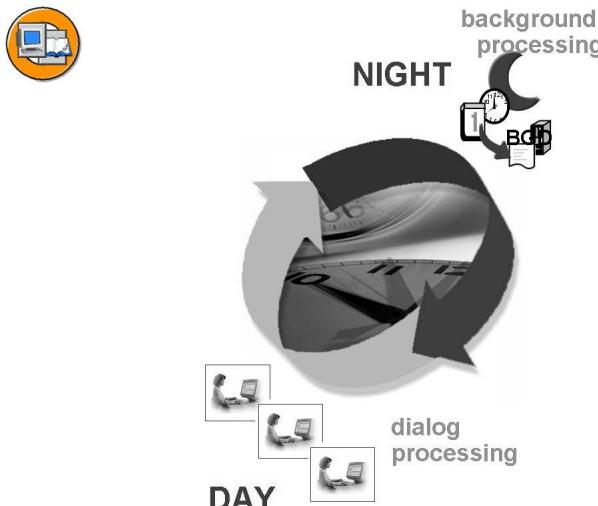


**Figure 184: Basic Configuration: Number of Work Processes**

SAPinst installs SAP systems with a minimum number of work processes, which are calculated using the following formula:

- Number of dialog work processes = RAM/256 (min 2, max 18)
- Number of update work processes = RAM/768 (min 1, max 6)
- Number of update2 work processes = RAM/1024 (min 1, max 3)
- Number of batch work processes = RAM/1024 (min 2, max 3)
- Number of enqueue work processes = 1
- Number of spool work processes = 1

SAP recommends that you adapt SAP profiles using transaction RZ10. Nevertheless, it is possible to change SAP parameters in the corresponding files on the operating system.



**Figure 185: Basic Configuration: Set Up Operation Modes**

Operation modes are set up in a number of steps:

- First, the operation modes are created as empty containers in transaction RZ04.
- Next, all active instances of the system are recorded and the work processes defined in the instance profile are assigned to the operation modes as default values.
- Next, distribute the individual operation modes in the total number of work processes taken from the instance profile. The distribution should be primarily made between the dialog and background work processes.
- In the timetable (transaction SM63), you specify the periods for which operation modes are valid and when the switch between operation modes should occur.

For more information, see course ADM100.



Job name (1) 11 Entries Found		
Restrictions		
Component	Background Job Name	Job Info
BC	SAP_CCMIS_MONI_BATCH_DP	JOB FOR MONITORING
BC	SAP_COLLECTOR_FOR_JOBSTATISTIC	COLLECT VALUES FOR STATISTICS
BC	SAP_COLLECTOR_FOR_NONE_R3_STAT	NONE-R/3-STATISTIC-KOLLEKTOR
BC	SAP_COLLECTOR_FOR_PERFMONITOR	PERFORMANCE-COLLECTOR
BC	SAP_REORG_ABADUMPS	DELETE ABAP DUMPS
BC	SAP_REORG_BATCHINPUT	DELETE OLD BATCH INPUT FILES
BC	SAP_REORG_JOBS	DELETE OLD JOBS
BC	SAP_REORG_JOBSTATISTIC	DELETE OLD JOBSTATISTIC
BC	SAP_REORG_SPOOL	DELETE OLD SPOOLFILES
BC	SAP_REORG_UPDATERECORDS	DELETE OLD UPDATE REQUESTS
BC	SAP_REORG_XMILOG	DELETE XMI-LOG

**Figure 186: Basic Configuration: Background Jobs**

For more information, see course ADM100.



### transaction SU25

Profile Generator: Upgrade and First Installation			
Installing and upgrading the Profile Generator			
Actions to be performed			
Installing the Profile Generator	Date	Time	User
1. Initially fill the customer tables	12.02.2003	09:26:50	DDIC

**Figure 187: Basic Configuration: User and Roles**

Users must be set up and roles assigned to user master records before you can use SAP ERP Central Component. Roles are collections of activities that allow a user to use multiple business scenarios of an organization. Use profile generator (transaction PFBC) to create and maintain roles.

The profile generator (transaction PFCG) is active in the standard system; the auth/no\_check\_in\_some\_cases system profile parameter is set.

Perform the following steps in the Implementation Guide (IMG):

- Start transaction SU25:
  - SAP delivers the default values for authorizations in the USOBX and USOBT tables. Transaction SU25 fills the USOBX\_C and USOBT\_C customer tables of Profile Generator the first time you use Profile Generator.
  - Copy SAP default settings for check indicators and authorization field values using transaction SU25. Step 1: Initially fill the customer tables.
- Schedule background job for time limits: You can set a time limit on the assignment of users to roles. To ensure that these changes are reflected in the user master record, you need to schedule a background job to make the relevant adjustments daily.

For more information on transaction PFCG, see courses ADM100 and CA940.

Basic Configuration: Additional Tasks:



- Set up logon groups with transaction SMLG.
- Install printers with transaction SPAD.
- Configure system log with transaction SM21.

Set up logon groups. Go to *SAP Library* → *mySAP Technology Components* → *SAP Web Application Server* → *CCMS* → *Configuration* → *Logon Load Balancing*.

Install printers:

- Refer to SAP Printing Guide in online documentation.
- Go to *SAP Library* → *mySAP Technology Components* → *SAP Web Application Server* → *CCMS* → *SAP Printing Guide*.

Configure systemlog: Set up a central systemlog and specify log file pathnames.

For more information, see course ADM100.





## Exercise 11: CTS and TMS Configuration

Exercise Duration: 5 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Perform post-installation activities

### Business Example

You are the system administrator of ABC Limited, a petrochemical company. You installed the latest version of SAP, SAP ERP Central Component. Now, you have to perform the post-installation activities of CTS and TMS.

#### Task:

Perform the post-installation activities, Change and Transport System (CTS) and Transport Management System (TMS).

1. Perform post-installation actions in transaction SE06.
2. Configure TMS.

## Solution 11: CTS and TMS Configuration

### Task:

Perform the post-installation activities, Change and Transport System (CTS) and Transport Management System (TMS).

1. Perform post-installation actions in transaction SE06.
  - a) Proceed as described in this training material on the Post-Installation Activities for Transport Organizer page with the *Standard Installation* setting. Do not select Database Copy.
2. Configure TMS.
  - a) Proceed as described in this training material on the TMS Configuration: Transport Domain and TMS Configuration: Transport Routes pages.



## Lesson Summary

You should now be able to:

- Describe the steps needed to perform and configure TMS

## Lesson: Additional Tasks



Lesson Duration: 30 Minutes

### Lesson Overview

This lesson describes how to perform the following additional tasks after installing SAP ERP Central Component (SAP ECC):

- Perform final installation checks
- Activate SAP ERP Central Component Extension Set
- Install additional languages
- Perform a full backup for Windows and UNIX
- Verify the settings of SAP Web AS Java
- Start and schedule SAP Load Generator



### Lesson Objectives

After completing this lesson, you will be able to:

- Perform final installation checks
- Describe the steps to activate SAP ERP Central Component Extension Set
- Describe the steps to install additional languages
- Describe the steps to perform a full backup
- Describe the steps to verify the settings of SAP Web AS Java
- Describe the steps to start and schedule SAP Load Generator



This lesson explains the additional tasks that you need to perform as a part of necessary post-installation tasks, such as determining inconsistencies in the system and installing additional languages.

Note for Exercise: There are nine different tasks. If participants would attempt all the exercises, it would take too long. Therefore, pick out some exercises. Some exercises, which are exercises in other courses, are marked as optional.

## Business Example

ABC Limited, a petrochemical company, installed the latest version of SAP system, SAP ECC. You are the system administrator in the company. As a necessary post-installation activity, you need to perform additional tasks, such as determining inconsistencies in your system, installing additional languages, and performing a full backup.

## Need for Installation Checks

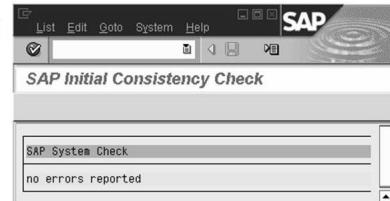
Installation check checks the consistency of the newly installed system. The following checks are performed:



- Completeness of installation
- Version compatibility between the SAP release and the operating system
- Accessibility of the message server
- Availability of all work process types
- Information about the enqueue server and the update service



- Choose **Tools → Administration → Administration → Installation check or transaction SICK**



**Figure 188: Installation Checks**

The consistency check determines inconsistencies in your system. This function is also called automatically when you start your system or start an application server.

The installation check checks whether the following are true:

- The release number in the SAP kernel matches the release number stored in the database system.
- The character set specified in the SAP kernel matches the character set specified in the database system.
- The critical structure definitions defined in both the data dictionary and the SAP kernel are identical. The structures that are checked include structures SYST, T100, TSTC, TDCT, TFDIR, and others.



To activate an extension, you have to log on as a user unequal to DDIC and SAP\*. For this reason, create a new user with a profile, such as sap\_all.

## Activation of SAP ERP Central Component Extension Set

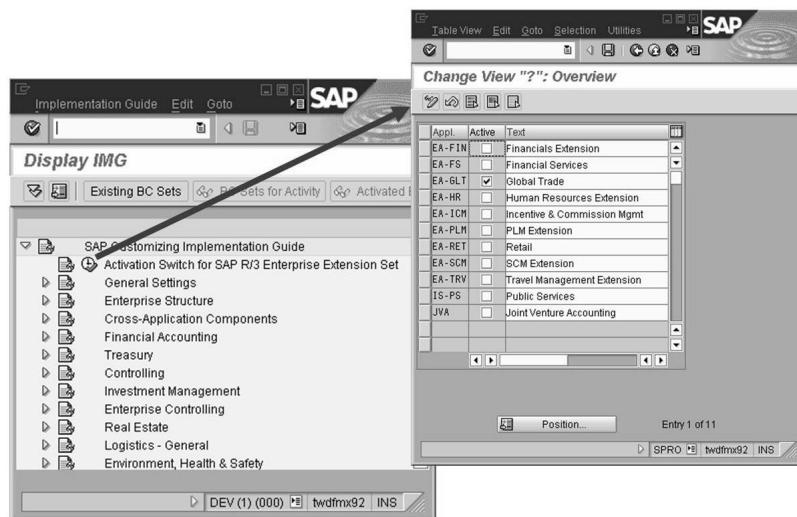


Figure 189: Activation of SAP ERP Central Component Extension Set

Activation of extension set:

1. Call transaction SPRO (IMG).
2. Choose *SAP Reference IMG*.

From the technical point of view, SAP ERP Central Component Extensions are delivered and installed as part of an Add-On for SAP ERP Central Component, which is SAP ERP Central Component Extension Set. Client-independent activation switches allow you to use the functions contained in SAP ERP Central Component Extension Set components.

You activate the functions by selecting the relevant activation switch in the IMG activity, Activation switch for the SAP ERP Central Component Extension Set. After activating, the Business Transaction Events (BTEs) and BAdI implementations marked as SAP-internal and already activated in a static way are also executed at

runtime. After the activation, additional entries display in the tree structures of IMG, Application Component Hierarchy (ACH), and the default SAP Easy Access Menu based on the component activated.

**Generally, you cannot deactivate an activated switch** because data is updated in a different way than it would be if the relevant component was inactive. This depends on the component and the actions performed in the system after activation. **However, in a test system without production data, you can deactivate the switch without problems.**

Refer to SAP note 532499 for information on activating various components simultaneously.

An error message is issued when you activate one or more switches for parts of SAP ERP Central Component Extension Set. Before you activate parts of SAP ERP Central Component, ensure that no clients are marked as **productive** in the system: Check the T000 table to see whether an entry exists with CCCATEGORY = "P". Change the setting to "T" and then activate the switches. Afterwards, reset the setting in the T000 table.

## Steps to Install Additional Languages



### 1. Classification of the language transaction SMLT:



Figure 190: Installing Additional Languages (1/3)

The procedure to classify a language is:

- Select *Classify Language* or choose *Language* → *Classify*.
- In the next dialog box, choose the language that you want to import and the corresponding supplementation language.
- The imported languages must be defined in the default profiles so that you can log on in these languages. The relevant parameter is zcsa/installed\_languages.

SAP recommends that you use the language supplementation program, which, as of SAP Web Application Server 6.20, integrates the RSREFILL program and the client maintenance function.

See course ADM102 for more information on updating a translation language for the customizing settings of an existing customer client (other than client 000).

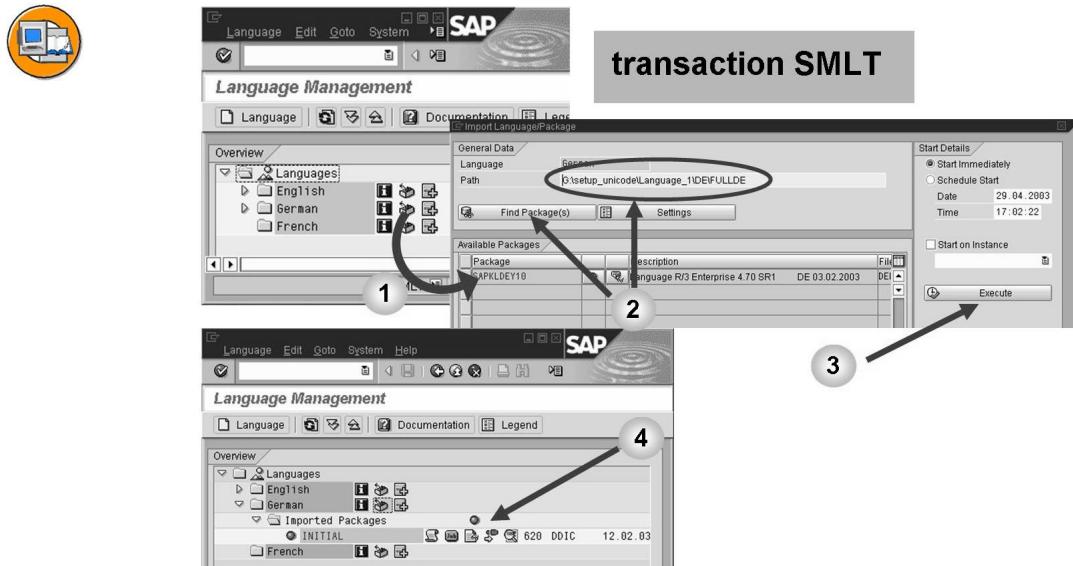


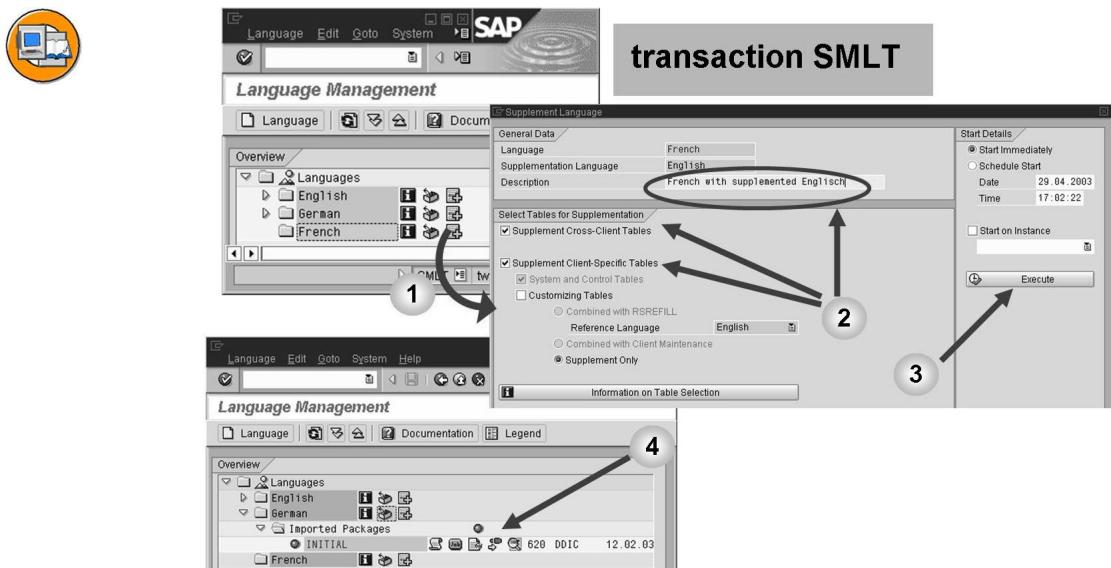
Figure 191: Installing Additional Languages (2/3)

The English and German languages are available in all newly installed systems. You do not need to import them into newly installed systems.

The procedure to import language packages is:

- Select the language for which you want to install extra packages and choose *Language → Import package*.
- Enter the path for the language packages. Choose *Find package(s)* to search for any available packages in the path you have entered. The green, yellow, and red lights next to the packages indicate whether you can import them:
  - Green light: all import conditions are met
  - Yellow light: there are warnings
  - Red light: the package cannot be imported because checks have detected errors
- Select one or more language packages with green or yellow lights for import. Specify a start time and an optional target server for background processing and choose *Execute* to import the language packages. This action schedules a background job that performs the import.
- Check the log files.

If an action terminates for technical reasons, you can restart it.



**Figure 192: Installing Additional Languages (3/3)**

Use the language supplementation function to fill in the gaps in a language that have not been translated completely. Supplementation actions are client-specific. The languages are supplemented in the client to which you are logged on.

The procedure to schedule language supplementation is:

- Choose *Language* → *Supplement Language*.
- Enter conditions that control which tables are selected for supplementation. The fields are set with SAP default values that depend on the logon client. Client-specific customizing tables are subject to special handling during language imports. This has resulted in the following supplementation strategies being created:
  - Combined with RSREFILL (standard setting when logging on to clients other than 000)
  - Combined with Client Maintenance
  - Supplement Only
- Enter a start time and choose *Execute*. This schedules a background job that performs the supplementation.
- Monitor the supplementation and check log files.

For more information on these strategies, choose Information on Table Selection in the system.

Language Import: New features:



- SAP Web Application Server 6.20: The client maintenance function (RSREFILL program) is integrated with the language supplementation program.
- Basis Release 4.6D: Transport processes (import and export) can be started in parallel.
- Basis Release 4.6C: Languages are now transported with the SAP transport programs, R3trans and tp.

For more information, see course ADM102 or go to [service.sap.com/instguides](http://service.sap.com/instguides) and choose *SAP Web AS 6.20* → *SAP Web AS 6.20: Language Transport*.

## Implementing Packages



- Import support packages
- Implement latest versions of SAP executables (kernel)
- Implement patches for the SAP Web AS Java
- Implement patches for the SAP GUI
- Implement patches for the database

## Perform a Full Backup for Windows and UNIX



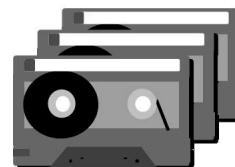
### Windows

- **Prerequisites**

- Stop SAP system, database, SAP-related services (SAP<SAPSID>\_<instance> and SAPOSCol)

- **Procedure:**

- Save the registry
  - Save the system state data
  - Back up all SAP-specific and all database-related directories:
    - ◆ \usr\sap
    - ◆ \usr\sap\trans
    - ◆ <HOMEDIR> of <sapsid>adm
    - ◆ \WINNT



**Figure 193: Perform a Full Backup: Windows**

Save the Registry:

- Choose *Start → Programs → Accessories → System → Tools → Backup →, and Emergency Repair Disk.*
- Select *Also Backup the Registry to the Repair directory*. When you confirm your entry, the Registry is written to the disk.

Save system state data:

- Choose *Start → Programs → Accessories → System → Tools → Backup → Backup Wizard.*
- Select *Only back up system state data* and specify the *Backup media type* and the destination of the backup.

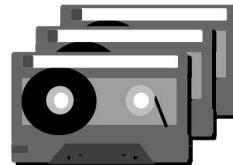
Back up all SAP-specific and database-related directories:

- Choose *Start → Programs → Accessories → System → Tools → Backup → Backup Wizard.*
- Select *Backup selected files, drives or network data.*
- Select the Windows directory and all SAP and database-related directories, including \USR\SAP; \USR\SAP\TRANS; <HOMEDIR> of <sapsid>adm; \WINNT.
- On the *Where to Store the Backup* screen, specify the media type and the destination of the backup.



## UNIX

- **Prerequisites**
  - Stop SAP system and database
- **Procedure**
  - Log on as user root. Manually create a compressed tar archive containing all installed files
    1. Create the archive:
      - `tar -cf <ARCHIVNAME> <filesystem / filename> -uf <ARCHIVNAME> <filesystem / filename> ....`
    2. Compress the archive:  
`compress <ARCHIVNAME>`
    3. Store the archive on tape:  
`tar -cf <tape_device> <ARCHIVNAME>.Z`



**Figure 194: Perform a Full Backup: UNIX**

You need to back up the following directories and files:

- All database-specific directories
- All SAP-specific directories:
  - `/usr/sap/<SAPSID>`
  - `/usr/sap/trans`
  - `<sapmnt>/<SAPSID>`
  - home directory of the user `<sapsid>adm`
  - root file system

This saves the structure of the system and all configuration files (for example, file system size, logical volume manager configuration, and database configuration data).

This procedure works on all hardware platforms. See your system administration guide for details and for operating system-specific backup procedures.

## Checking the RFC Destination



- In a distributed installation, central and database instance run on different hosts. Check whether the database host was correctly set up as an RFC destination to obtain monitoring data for the database and the operating system.
- Procedure:
  - Choose *Tools → Administration → Network → RFC destinations* or transaction SM59.
  - Go to TCP/IP connections and select SAPOSCOL\_<DB\_hostname>, if database and central instance are located on different hosts.
  - Choose *Test Connection*.

## Verifying the SAP Web AS Java Setting

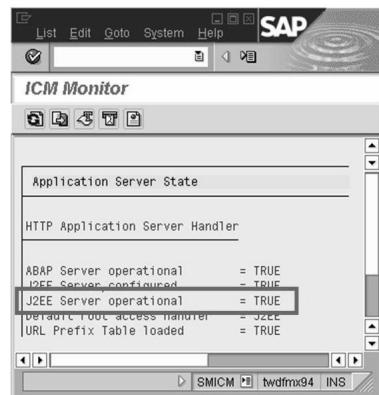


Figure 195: SAP Web AS Java

The communication user SAPJSF is used during the user authentication that takes place between the SAP Web AS Java and the SAP Web AS ABAP by RFC communication.

The communication user SAPJSF and its assignment to the role SAP\_BC\_JSF\_COMMUNICATION\_RO are automatically created during the installation.

After you have installed SAP Web AS ABAP + Java, check whether the communication user and its assignment to the SAP\_BC\_JSF\_COMMUNICATION\_RO role were correctly created in the production client of the SAP Web AS ABAP. If this is not the case, create the communication user and the role as described below.

1. In the SAP Web AS ABAP, in the production client, call the function module PRGN\_J2EE\_CREATE\_SERVICE\_USER using transaction SE37.
2. Specify the password in the import parameter IF\_PASSWORD. If you want to deactivate the password logon for the communication user and want to use SNC logon instead, leave the field blank.
3. Choose Execute. The system displays the screen Test Function Module: Initial Screen.
4. In the Result row of the table parameter ET\_RETURN, check that no errors occurred during the execution.

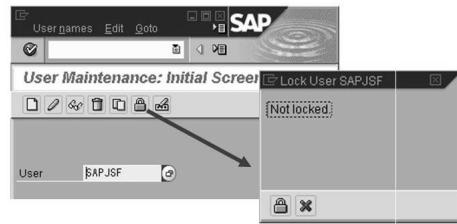


Figure 196: SAP Web AS Java: User SAPJSF



**Fehlerprotokolldatei**

Erste Seite | Vorige Seite | Nächste Seite | Letzte Seite |

Directory: G:\usr\sap\DEV\WEBMG500\j2ee  
Name: batchconfig.log

```
My Library Path is: G:\128dk\4.2.03\bin.;C:\WINNT\system32;C:\WINNT\g:sapdb\programs\bin;g:sapdb\programs\pgm;C:\Perl\bin;C:\WINNT\system
ElementInfoTask has finished successfully on dispatcher
ConsoleLogsTask has finished successfully on dispatcher
ChangeManagerPropsTask has finished successfully. Manager: LockingManager on dispatcher
ChangeManagerPropsTask has finished successfully. Manager: ClusterManager on dispatcher
ElementInfoTask has finished successfully on server
ConsoleLogsTask has finished successfully on server
ChangeManagerPropsTask has finished successfully. Manager: LockingManager on server
ChangeManagerPropsTask has finished successfully. Manager: ClusterManager on server
ChangeServicePropsTask has finished successfully. Service: dbpool on server
ChangePasswordsTask finished successfully.
Property sheet security successfully secured on cluster_data/server/cfg/services.
Property sheet security successfully secured on cluster_data/server/cfg/services.
Property sheet com.sap.security.core.ume.service successfully merged on cluster_data/server/cfg/services.

os.name: ntntel
os.bit.length: 32
os.unicode: true
Port Offset (by system number)= 0
disp cluster id = 3703000
disp group id = 37030
disp cluster name = SAP J2EEEngine Cluster 0
disp element name = Dispatcher 0_37030

http port = 50000
http over ssl port = 50001
p4 over http port = 50005
p4 over ssl port = 50006
i10p port = 50007
telnet port = 50008
```

AL11 twdf0737 INS

Figure 197: Additional Information for the SAP Web AS Java and SDM

## SAP Load Generator

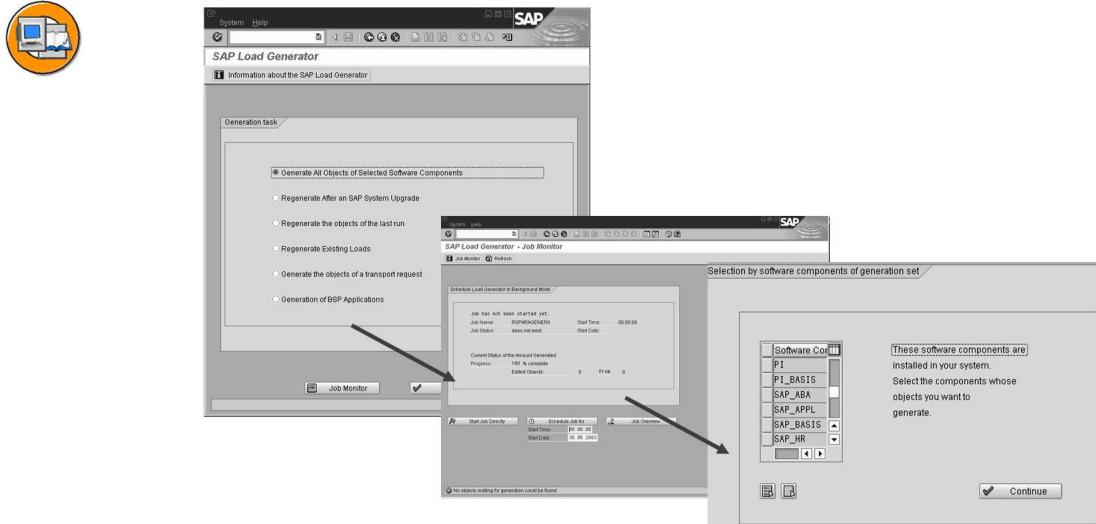


Figure 198: SAP Load Generator (SGEN)

You can use transaction SGEN to generate the ABAP loads of a number of programs, function groups, classes, and so on. You can also generate Business Server Page (BSP) applications using the SGEN transaction.

Before the generation starts, consecutive screens give you options about the:

- Task of the generation
- Selection of generation set (= number of objects to be generated)
- Use of parallel generation

The generation is started on the job monitor screen. In addition, this screen gives you information about current generation jobs or jobs that may have already run, such as predictions about the duration of the generation.

If you want to generate loads, ensure that there is enough space available in the database. The space required can be several hundred MB. Generation over all components requires more than 2 GB of free space.

## The UNICODE Post-Installation Procedure

After installing Unicode:

- Log on to your SAP ECC.
- Start transaction SE38.
- Execute the UMG\_POOL\_TABLE program.

For more information, refer to SAP note 544623.



## Exercise 12: Perform the Necessary Post-Installation Activities

Exercise Duration: 20 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Import and change SAP profiles
- Configure operation modes
- Perform an installation check and activate SAP ERP Central Component Extension Set
- Create a new client in SAP ERP Central Component
- Verify the status of SAP Web AS Java
- Start and schedule SAP Load Generator

### Business Example

You are the system administrator of ABC Limited, a petrochemical company. You installed the latest version of SAP, SAP ERP Central Component. Now, you have to perform the necessary additional tasks, such as performing an installation check, creating a new client in SAP ERP Central Component and verifying the status of SAP Web AS Java.

#### Task 1:

Import and change SAP profiles.

1. Import all profiles into SAP ERP Central Component.
2. Change the values of the parameters related to the number of work processes (rdisp/wp\_no\_\*). For example, enter twice the number for dialog and batch work processes.

#### Task 2:

Configure operation modes.

1. Set up operation modes.
2. Maintain a timetable for operation mode.

*Continued on next page*

**Task 3:**

Check standard background jobs.

1. Schedule the standard background jobs.

**Task 4:**

Preparation steps before using profile generator (transaction PFCG).

1. Check the auth/no\_check\_in\_some\_cases profile parameter.
2. Initialize the profile generator.

**Task 5:**

Installation check and activation of the SAP ERP Central Component Extension Set.

1. Perform the installation check.
2. Activate the SAP ERP Central Component extension set.

**Task 6:**

Perform a client copy.

1. Create a new client in SAP ERP Central Component.
2. Log on to your computer, to your new client, and start a local client copy with the SAP\_CUST in background profile (start time: tomorrow 8 AM).

**Task 7:**

Check the status of the SAP Web AS Java and the user SAPJSF.

1. Check the rdisp/j2ee\_start profile parameter.
2. Check the current state of SAP Web AS Java using transaction SMICM.
3. Check whether user SAPJSF is locked.

**Task 8:**

SAP Load Generator

1. Start SAP Load Generator and schedule it for tomorrow 8 PM.

*Continued on next page*

**Task 9:**

Check the SAP account in Windows.

1.

Check whether the user option Password never expires is set for the SAP accounts <sid>adm and SAPService<SID>.

## Solution 12: Perform the Necessary Post-Installation Activities

### Task 1:

Import and change SAP profiles.

1. Import all profiles into SAP ERP Central Component.
  - a) Call profile maintenance (*Tools → CCMS → Configuration → Profile Maintenance or transaction RZ10*). You can import all profile files together by choosing *Utilities → Import Profiles → Of active servers*. A check log displays the result of the import.
2. Change the values of the parameters related to the number of work processes (rdisp/wp\_no\_ \*). For example, enter twice the number for dialog and batch work processes.
  - a) To change the values of individual parameters, select the instance profile and change this in extended maintenance.

### Task 2:

Configure operation modes.

1. Set up operation modes.
  - a) Create operation modes in transaction *RZ04* (*Tools → CCMS → Configuration → Operation Modes/Instances*).
  - b) Choose *Create* and enter the name. Choose *Save*.
  - c) Switch to the Instances/Operation Modes view by choosing Instances/Operation Modes.
  - d) Define work process distribution for all instances of your system by choosing *Settings → Based on current status → New instances → Create*.
  - e) To change the distribution of work processes for the operation modes of instances, double-click the operation modes entries. Change and then save the distribution of work processes in the Maintain Work Process Distribution window by choosing + and -. After you have changed the distribution for all operation modes and instances, choose *Save*.

*Continued on next page*

2. Maintain a timetable for operation mode.
  - a) Schedule operation modes using the operation mode calendar (*Tools → CCMS → Configuration → Operation Mode Calendar; Transaction SM63*).
  - b) Choose *Normal Operation* and *Change*. Select the start and end of the period of the operation mode by double-clicking the appropriate lines.
  - c) Choose *Assign* and then select *Operation mode*. After you have assigned the entire 24-hour period to your operation modes, choose *Save*.

### Task 3:

Check standard background jobs.

1. Schedule the standard background jobs.
  - a) Choose transaction SM36 (*Tools → CCMS → Jobs → Definition*) and choose *Goto → Standard jobs*. To schedule standard jobs, choose *Reorg. Jobs → Default scheduling*.

### Task 4:

Preparation steps before using profile generator (transaction PFCG).

1. Check the auth/no\_check\_in\_some\_cases profile parameter.
  - a) Use transaction RSPFPAR to check the value of the parameter. The parameter must be set to **Y**. Change the value, if necessary, using transaction RZ10.
2. Initialize the profile generator.
  - a) Proceed as described in this training material on the Basic Configuration: User and Roles pages.

### Task 5:

Installation check and activation of the SAP ERP Central Component Extension Set.

1. Perform the installation check.
  - a) Proceed as described in this training material on the Installation Check pages.
2. Activate the SAP ERP Central Component extension set.
  - a) Proceed as described in this training material on the Activation of SAP ERP Central Component Extension Set page.

*Continued on next page*

## Task 6:

Perform a client copy.

1. Create a new client in SAP ERP Central Component.
  - a) Create a new client named **100**. Choose *Tools* → *Administration* → *Administration* → *Client Administration* → *Client Maintenance* or start transaction SCC4.
  - b) Switch to change mode. Choose *New Entries*.
  - c) Enter **100** in the *Client* field. Enter a client description and a city. Adapt the change options to customize.
2. Log on to your computer, to your new client, and start a local client copy with the SAP\_CUST in background profile (start time: tomorrow 8 AM).
  - a) Log on to your new client with user **SAP\*** and password **pass**. Choose *Tools* → *Administration* → *Administration* → *Client Administration* → *Client Copy* → *Local Copy*.
  - b) Select client 000 as source. Choose *Schedule as Background Job* (start time: tomorrow 8 AM).

## Task 7:

Check the status of the SAP Web AS Java and the user SAPJSF.

1. Check the rdisp/j2ee\_start profile parameter.
  - a) Use the RSPFPAR transaction to check the value of the parameter. The default setting is 1. As a result, SAP Web AS Java starts within the normal SAP ERP Central Component start procedure. Change the value, if necessary, using transaction RZ10.
2. Check the current state of SAP Web AS Java using transaction SMICM.
  - a) Proceed as described in this training material on the SAP Web AS Java page.
3. Check whether user SAPJSF is locked.
  - a) Choose transaction SU01 (*Tools* → *Administration* → *User maintenance* → *Users*) and enter user **SAP JSF**. Choose *User names* → *Lock* to check whether user SAPJSF is locked.

*Continued on next page*

**Task 8:**

SAP Load Generator

1. Start SAP Load Generator and schedule it for tomorrow 8 PM.
  - a) Proceed as described in this training material on the SAP Load Generator (SGEN) page.

**Task 9:**

Check the SAP account in Windows.

1. Check whether the user option Password never expires is set for the SAP accounts <sid>adm and SAPService<SID>.
  - a) Log on to operating system and choose *Start → Programs → Administrative Tools → Computer Management*. Proceed as described in this training material on the Windows: SAP Accounts page.



## **Lesson Summary**

You should now be able to:

- Perform final installation checks
- Describe the steps to activate SAP ERP Central Component Extension Set
- Describe the steps to install additional languages
- Describe the steps to perform a full backup
- Describe the steps to verify the settings of SAP Web AS Java
- Describe the steps to start and schedule SAP Load Generator

**Lesson: Appendix: Specific Post-Installation Activities**

Lesson Duration: 0 Minutes

**Lesson Overview**

You will learn some more specific post-installation activities.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Perform some special post-installation activities



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No notes here

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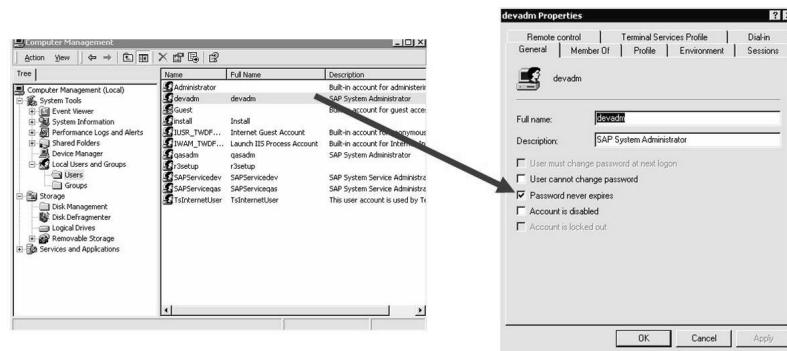


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Explain some more specific post-installation activities.

---

## Performing Post-Installation Activities



**Figure 199: Windows: SAP Accounts**

### Check that created Windows accounts never expire:



- In user management, set the *Password never expires* option for the created SAP accounts <sapsid>adm and SAPService<SID>.
- If this option is not selected, the installed system will not start after 42 days have passed after the installation.

After the installation, ensure that the created SAP accounts, <sapsid>adm and SAPService<SID>, have the *Password never expires* option selected in user management. If this option is not selected, the installed system will not start after 42 days have passed after the installation. In this case, after trying to access the system, the SAP management console reports the error, The service did not start due to a logon failure. To fix the problem, you must set the *Password never expires* option for the SAP accounts.

Log on to the operating system. Choose *Start → Programs → Administrative Tools → Computer Management*.



### Completing and Checking Oracle Installation

An Oracle SAP database should run in archive log mode. Only this mode guarantees recovery after system failure. Database archive logs are written to the /oracle/<DBSID>/oraarch directory. If the file system containing the archive directory is full, all database transactions are stopped (archiver stuck). Use the brarchive tool to save the archives on tape. For more information, see the documentation *SAP Database Administration: Oracle*, which is part of online documentation.

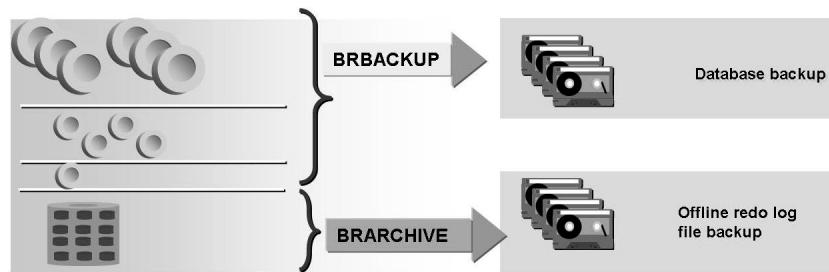
You need to execute the following tasks to ensure the availability of important database tools and to complete the Oracle database installation.

For more information on how to backup and restore a Oracle database see ADM505 course.

### Completing and Checking the Oracle Installation



- Make sure the database utilities **brbackup** and **brarchive** were installed correctly



- Install Legato Storage Manager for Oracle 9.2.x

**Figure 200: Completing and Checking the Oracle Installation**

Execute the following steps to check whether the database utilities, **brbackup** and **brarchive**, are installed correctly:

1. Log on as UNIX user ora<dbsid>.
2. Verify that the database is running.
3. Load a new tape in the tape station.
4. Initialize all tapes defined by the profile parameters, volume\_backup and volume\_archive in the init<SAPSID>.sap file with this statement: brbackup -i force brarchive -i force.
5. Use brtools to start an online backup for one tablespace.
6. Use brtools to start an archive backup.

Install SAP Backup Library or Legato Storage Manager if you are using Oracle 9.2.x. For more information on how to install and use SAP Backup Library and Legato Storage Manager, see SAP note 142635.

## Informix Administrative Tools



- Only members of the Informix-Admin group can access administrative tools for the Informix database.
- As a result, you have to adapt the user environment to use Informix database tools as a user other than <sapsid>adm.
- Before you use SAPDBA for the first time as the informix user, you must perform this procedure.
- Log on as <new\_user>.
- Go to <DRIVE>:\USR\SAP\<SAPSID>\SYS\EXE\RUN and start NTREG2ENV.EXE.
- In the *ntreg2env* window, check the selected system and choose *OK*.

## UNIX: Adjustments



- For security reasons, set the permissions of the /usr/sap/trans transport directory to 771:
  - Log on as user root on the host that exports the transport directory.
  - Enter `chmod 771 /usr/sap/trans`.
- These adjustments are required if your operating system is AIX or HP-UX on HP/HPPA.
- AIX
  - Check that perfagent is installed as follows: `lslpp -l perfagent.server`.
  - The AIX software perfagent must be installed for saposcol on AIX.
- HP-UX on HP/HPPA or AIX on IBM/RS6000 (32 bit)
  - Improve performance by reducing the number of shared memories. To do this, group shared memories together as shared memory pools. (SAP note 37537).



## Facilitated Discussion

No discussion for this appendix

## Discussion Questions

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

No discussion for this appendix

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## **Lesson Summary**

You should now be able to:

- Perform some special post-installation activities



## Unit Summary

You should now be able to:

- Describe the procedure to restart SAP ERP Central Component and perform final checks
- Describe the steps to install SAP License
- Describe the steps to install SAP online documentation
- Describe the steps to install and configure SAProuter
- Describe the steps needed to perform and configure TMS
- Perform final installation checks
- Describe the steps to activate SAP ERP Central Component Extension Set
- Describe the steps to install additional languages
- Describe the steps to perform a full backup
- Describe the steps to verify the settings of SAP Web AS Java
- Describe the steps to start and schedule SAP Load Generator
- Perform some special post-installation activities

### Related Information

- SAP Service Marketplace, <http://service.sap.com/instguides>
- Courses: ADM325, ADM940 (was “CA940”), ADM100, ADM102, ADM960





## Test Your Knowledge

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1. You can install a new SAP license on your SAP system. The license key number must be \_\_\_\_\_ characters.

*Fill in the blanks to complete the sentence.*

2. Name the three steps to install SAP online documentation.

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3. What is the need for SAProuter?

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4. There are two standard users in client 000 in SAP ERP Central Component after the installation.

*Determine whether this statement is true or false.*

- True
- False

5. After the installation of the central instance, a temporary license is active for six weeks.

*Determine whether this statement is true or false.*

- True
- False

6. SAProuter can be started as a demon under UNIX and as a service under Windows.

*Determine whether this statement is true or false.*

- True
- False

7. If you have installed your SAP system from the delivered SAP DVDs (without System Copy or migration), you don't have to configure CTS after installation.

*Determine whether this statement is true or false.*

- True
- False

8. Identify the activity that is not performed by Installation Check.

*Choose the correct answer(s).*

- A Completeness of installation
- B Version compatibility
- C Accessibility of the message server
- D Network security

9. What are the steps needed to install additional languages?

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10. What are the steps needed to perform a client copy?

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11. What is the procedure to perform a full backup for Windows?

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12. You administer the SAP Web AS Java from within the SAP ECC using transaction SU01.

*Determine whether this statement is true or false.*

- True
- False

13. The installation check checks, among others, whether the release number in the SAP kernel matches the one stored in the database system.

*Determine whether this statement is true or false.*

- True
- False

14. You cannot activate the functions contained in SAP ECC Extension Set.

*Determine whether this statement is true or false.*

- True
- False

15. If you perform a client copy, you need not change SAP ECC client of the SAPJSF user.

*Determine whether this statement is true or false.*

- True
- False

16. You cannot use the SGEN transaction to generate the ABAP loads of a number of programs, function groups, and classes.

*Determine whether this statement is true or false.*

- True
- False



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## Answers

1. You can install a new SAP license on your SAP system. The license key number must be 18 characters.

**Answer:** 18

2. Name the three steps to install SAP online documentation.

**Answer:** Install the help files. Customize setup variants for online help. Install a web browser or viewer.

3. What is the need for SAProuter?

**Answer:** SAProuter increases network security, simplifies network configuration, and allows you to make indirect network connections. SAProuter is required for SAPNet-R/3 front end and remote consulting connections.

4. There are two standard users in client 000 in SAP ERP Central Component after the installation.

**Answer:** True

The two standard users are SAP\* and DDIC.

5. After the installation of the central instance, a temporary license is active for six weeks.

**Answer:** False

After the installation of the central instance, a temporary license is active only for four weeks.

6. SAProuter can be started as a demon under UNIX and as a service under Windows.

**Answer:** True

SAProuter is started as a demon under UNIX and as a service under Windows. This allows to start saprouter automatically after a restart of your server.

7. If you have installed your SAP system from the delivered SAP DVDs (without System Copy or migration), you don't have to configure CTS after installation.

**Answer:** True

Basic, initial settings for the CTS are generated during the configuration of the transport management system.

8. Identify the activity that is not performed by Installation Check.

**Answer:** D

The SAProuter software, in the standard SAP kernel, increases network security.

9. What are the steps needed to install additional languages?

**Answer:**

1. Classifying the language.
2. Scheduling of language transport.
3. Scheduling of language supplementation.

10. What are the steps needed to perform a client copy?

**Answer:**

1. Maintain the client in table T000.
2. Copy the client.
3. Check log files.

11. What is the procedure to perform a full backup for Windows?

**Answer:**

1. Save the Registry.
2. Save system state data.
3. Back up all SAP-specific and database-related directories.

12. You administer the SAP Web AS Java from within the SAP ECC using transaction SU01.

**Answer:** False

You administer the SAP Web AS Java from within the SAP ECC using transaction SMICM.

13. The installation check checks, among others, whether the release number in the SAP kernel matches the one stored in the database system.

**Answer:** True

The installation check determines inconsistencies in the system.

14. You cannot activate the functions contained in SAP ECC Extension Set.

**Answer:** False

You activate the functions by selecting the relevant activation switch in the IMG activity, "Activation Switch for SAP ERP Central Component Extension Set".

15. If you perform a client copy, you need not change SAP ECC client of the SAPJSF user.

**Answer:** False

If you perform a client copy, you should also change SAP ECC client of the SAPJSF user after the client copy.

16. You cannot use the SGEN transaction to generate the ABAP loads of a number of programs, function groups, and classes.

**Answer:** False

You can use transaction SGEN to generate the ABAP loads of a number of programs, function groups, and classes.

# Unit 7



## Implementing Patches



After an installation, you have to patch the SAP ERP Central Component to the latest available patch levels. Describe the implementation of all the important types of patches, which are SAP kernel, support packages, SAP J2EE Engine and database. Since applying support packages is part of ADM100 and ADM325, this unit focuses on applying the SAP kernel patch and the SAP J2EE Engine patch. The procedure of applying database patches is different for each type of database. This unit contains the SAP notes that describe the procedure for each type of database and as an example, patching SAPDB.

### Unit Overview

This unit explains the implementation of the important types of patches. It also explains the elements of SAP ERP Central Component that need patches and describes how to apply patches to SAP ERP Central Component.



### Unit Objectives

After completing this unit, you will be able to:

- Discuss what a Support Package Stack is
- Describe the steps to apply kernel patches
- Describe the steps to apply SAP Web AS Java patches
- Describe the steps to apply ABAP support packages

### Unit Contents

Lesson: Applying Patches .....	348
Exercise 13: Applying Patches .....	371

## Lesson: Applying Patches



Lesson Duration: 60 Minutes

### Lesson Overview

This lesson explains how to implement important patches, such as kernel patches, SAP Web Application Server Java patches, and ABAP support packages.



### Lesson Objectives

After completing this lesson, you will be able to:

- Discuss what a Support Package Stack is
- Describe the steps to apply kernel patches
- Describe the steps to apply SAP Web AS Java patches
- Describe the steps to apply ABAP support packages



After the installation, SAP ERP Central Component has to be patched to the latest available patch levels. This unit describes the implementation of all the important types of patches (SAP Kernel, ABAP support packages, SAP Web AS Java).

First explain to the customers that support packages can be applied to the system using Support Package Stacks. The SP Stacks are tested combinations of Support Packages for all components of a SAP solution.

You can also import single support packages, but due to dependencies between SAP Kernel patches and ABAP/Java support packages this can a difficult task. The best solution is to use the SP Stacks

Note for Exercise: While performing the kernel patch, clarify that the participants have to stop SAP ERP Central Component and SAP services before applying the patch. However, the database services should not be stopped. While patching SAP Web AS Java, clarify that the participants will use SAPinst.

### Business Example

ABC Limited, a petrochemical company, installed the latest version of SAP system, SAP ERP Central Component. After installing SAP ERP Central Component, you, as the system administrator in the company, need to patch SAP ERP Central Component to the latest available patch levels using SAP Support Packages Stacks.



First explain in short what a Support Package Stack is and then follow the lesson and start with the implementation of the kernel patch. Then, implement the patch for SAP Web AS Java.

If you have the time show a SPAM update and a ABAP support package as well. Don't show the patching of a SAP Web AS Java Dialog Instance. This would take too long and the procedure is the same as the one used for patching the SAP Web AS Java Central Instance.

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## Support Package Stacks

SAP recommends that you keep your systems up to date by regularly applying the SAP Support Packages and SAP Kernel Patches. This patching is becoming more and more a challenge by the complexity of system landscapes.

To meet customers needs, SAP has extended the SAP Support Package strategy for certain product versions to Support Package Stacks (SP Stacks). Most customers apply bundles of support packages and patches in regular intervals (usually quarterly). The new strategy supports the actual way in which the majority of customers apply Support Packages.

The increasing diversity of components within a product version calls for greater transparency when it comes to applying Support Packages and patches. It also requires clear guidelines on the recommended or permitted combinations of these. For this purpose, a new SP Stack will be compiled for each product version included in the new strategy (usually quarterly). This SP Stack will contain the optimal combination of Support Package and patch statuses for the individual components at the given time.

A Support Package Stack also contains a installation guide for the Support Package Stack. For example, the Support Package Stack Guide - SAP NetWeaver 04 SP Stack contains detailed information on:

- The content of Support Package Stack 04
  - You get information on:
    - Existing patchable components
    - The Support Package level required for each of these components
    - How the corresponding Support Packages are named
    - How you download Support Packages from SAP Service Marketplace
- How to apply Support Packages to the different SAP NetWeaver '04 Scenarios
- How to apply patches to the generic components, for example, the Kernel or SAP GUI
- The use of the different Support Package Stack Tools

It is **very** important that you read these Support Package Stack guides before you start applying the support packages and patches.

You can download Support Package Stacks from the SAP Service Marketplace (<http://service.sap.com/patches>). The patch download page displays a wizard that will help you to select the correct support packages and other required patches for a Support Package Stack. The only thing you need to do is enter the current patch level of your SAP system and the wizard will automatically select all the relevant support packages and patches for your situation. You can add all these packages to you download basket.

The screenshot shows the SAP Support Portal interface. At the top, there's a navigation bar with links like 'HOME', 'Problem Solving', 'Downloads', 'Keys & Requests', 'Data Administration', 'Maintenance & Services', 'Tools & Methods', 'Release Info', and 'Knowledge Transfer'. Below the navigation bar, a sidebar on the left shows a 'You are here:' breadcrumb trail and a detailed navigation tree for SAP Software Distribution Center, specifically for SAP NetWeaver Components. The main content area is titled 'SAP NETWEAVER' and shows a list of patches under 'SAP NETWEAVER 04'. A large table below is titled 'Stack 4' and lists various ABAP support packages with their current and required levels. The table includes columns for 'ABAP Support Packages', 'Select your current Level', and 'Required Level'. For example, SAP Basis has a current level of SAPKB64001 and a required level of SAPKB64004.

**Figure 201: Support Package Stack Page**

The screenshot shows the Support Package Stack selection screen. For more information on Support Package Stacks, you can visit SAP Service Marketplace (<http://service.sap.com/sp-stacks>).

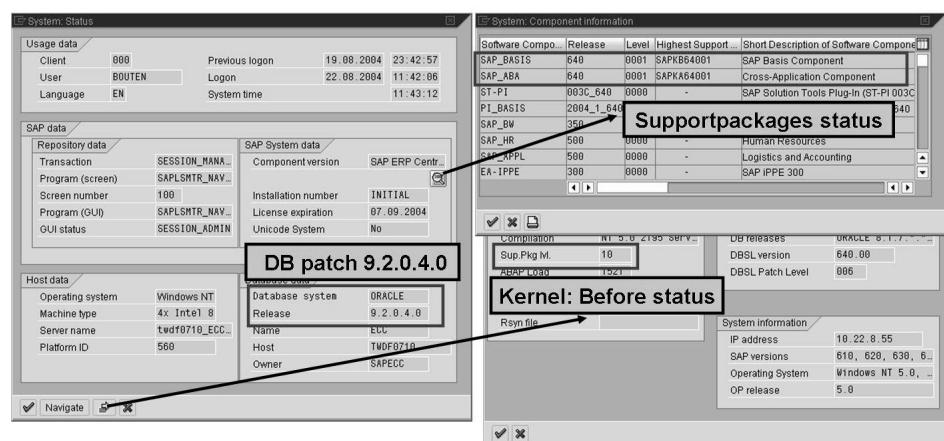


In the rest of this lesson we will apply a single kernel patch, a J2EE patch and a ABAP support package. The sequence is according the Support Package Stack guide, but don't apply a complete SP Stack due to time restrictions.

## Steps to Apply a Kernel Patch

When you apply a kernel patch, make sure that the following prerequisites are met:

- SAP system has stopped.
- On Windows, the SAP services, including SAPOsCol, have stopped.

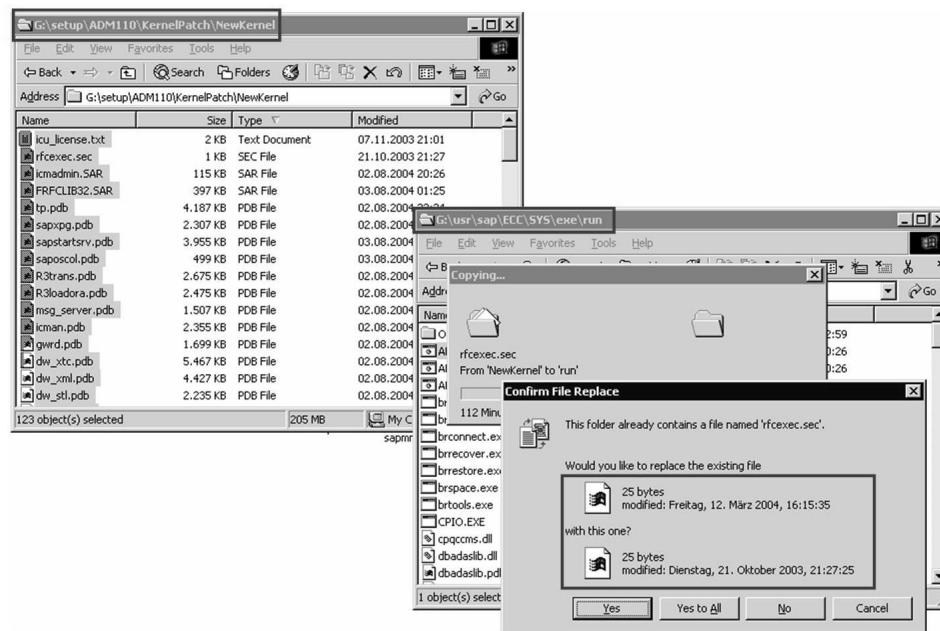


**Figure 202: Show Patch Levels Kernel, Support Packages, and Database**

The screenshots show the content of the *System → Status* of an SAP ERP Central Component system. After SAPinst has installed, the SAP system the patch levels are:

- SAP kernel has patch level 10
- BASIS and ABA are on support package number 1
- Oracle patch level is 9.2.0.4

To update the kernel, follow the instructions given in the Support Package Stack Guide SAP NetWeaver™ '04 Support Package Stack 04. This guide can be found on the SAP Service Marketplace <http://service.sap.com/instguides> under *SAP NetWeaver → Release 04 → Operations*



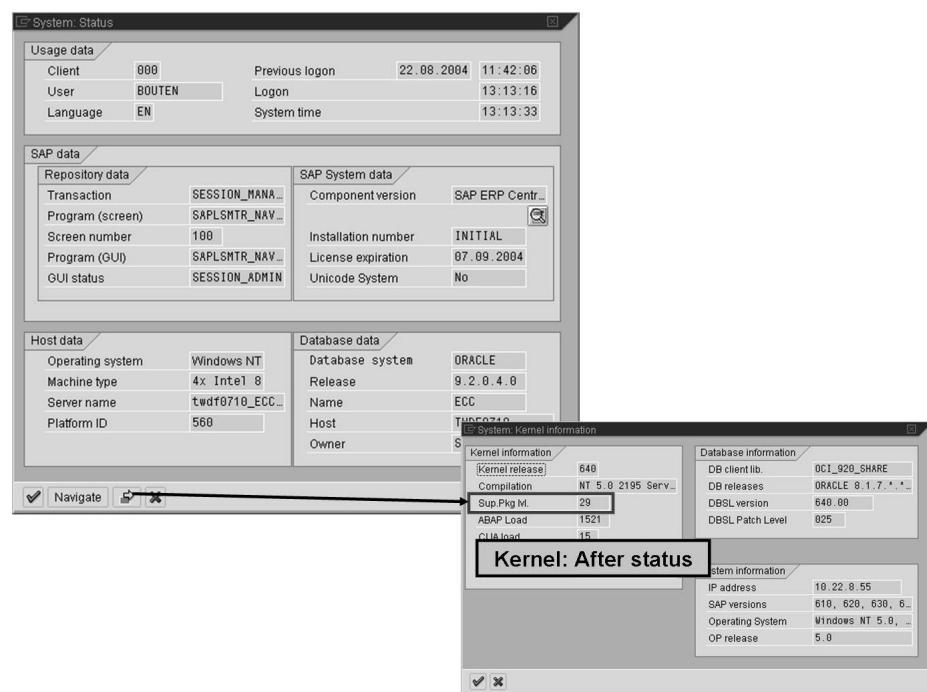
**Figure 203: Applying a Kernel Patch**

In the screenshots, you see that you will replace kernel files in the following directory:

**\usr\sap\<SID>\SYS\exe\run**

For information about the use of an SAP Web AS 6.40 kernel for SAP Web AS 6.10/6.20-based systems, read SAP Note 664679.

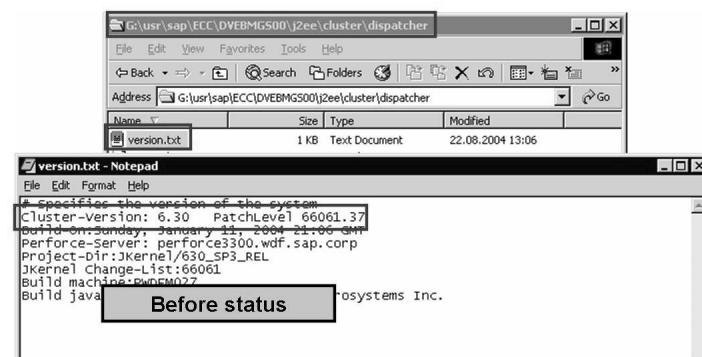
You should apply kernel patches to all instance-specific exe directories.



**Figure 204: Kernel Patch Level After the Patch**

The kernel patch in this example brought the kernel up to patch level 29, as can be seen in *System → Status*.

## Steps to Patch a SAP Web AS Java Central Instance



**Figure 205: Before Patching Status SAP Web AS Java**



Make sure that you have stopped the ABAP DI instance before you start SAPinst to patch the Java CI. During the course there will be **NO** time to patch the Java DI, so we can shut it down. The procedure to patch the Java DI is exactly the same as the Java CI. The slide also show the patching of the Java DI.

You also need to update SAP Web AS Java to ensure a stable environment. It is best to apply these patches when updating the kernel. Follow the instructions given in the Support Package Stack Guide SAP NetWeaver™ '04 Support Package Stack 04 chapter SAP Web AS Java 6.40.

Start sapinst.exe as explained in the Introducing SAPinst lesson. The SAPinst *Welcome* screen displays the patch options, such as apply Support Package 7 or Complete a Dialog Instance.

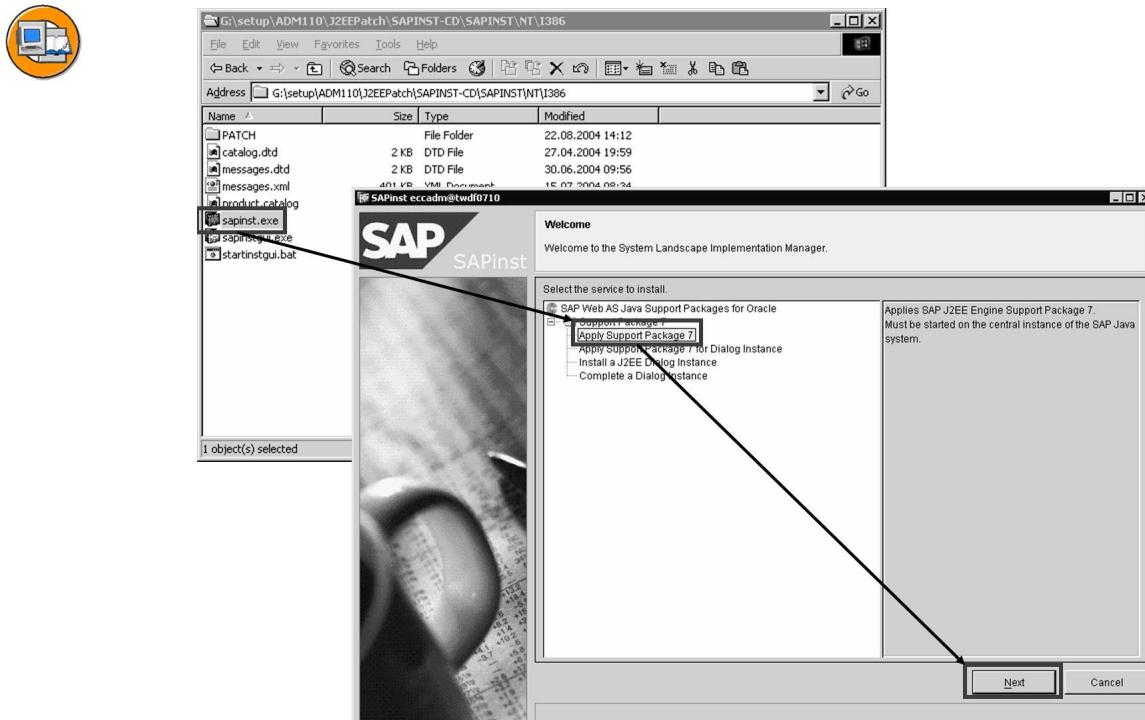


Figure 206: Start SAPinst



This course was written in the time that SAP ECC and NetWeaver '04 still were in ramp-up. The patch procedure didn't work as expected. This will be fixed in later Java support packages. The screenshots show the correct procedure.

When patching the Web AS Java SAPinst fails in the IGS phase because the ISG isn't stopped correctly and files cannot be replaced. To fix this problem please follow the instructions below:

- Make sure MMC and services are closed.
- User taskmanager to kill **igswd.exe** and all other **igs\*** processes.
- Click Retry in SAPInst.

When patching the JAVA CI SAPinst fails in the IGS phase because the ISG isn't stopped correctly. If this happens just stop the ABAP CI using the SAP MMC.

Because you stopped the ABAP CI (ABAP DI was already down before you started SAPinst) SAPinst will fail again in the phase Start SAP J2EE Engine. If this happens just start the ABAP CI again.

SAPinst will continue and finish successfully.

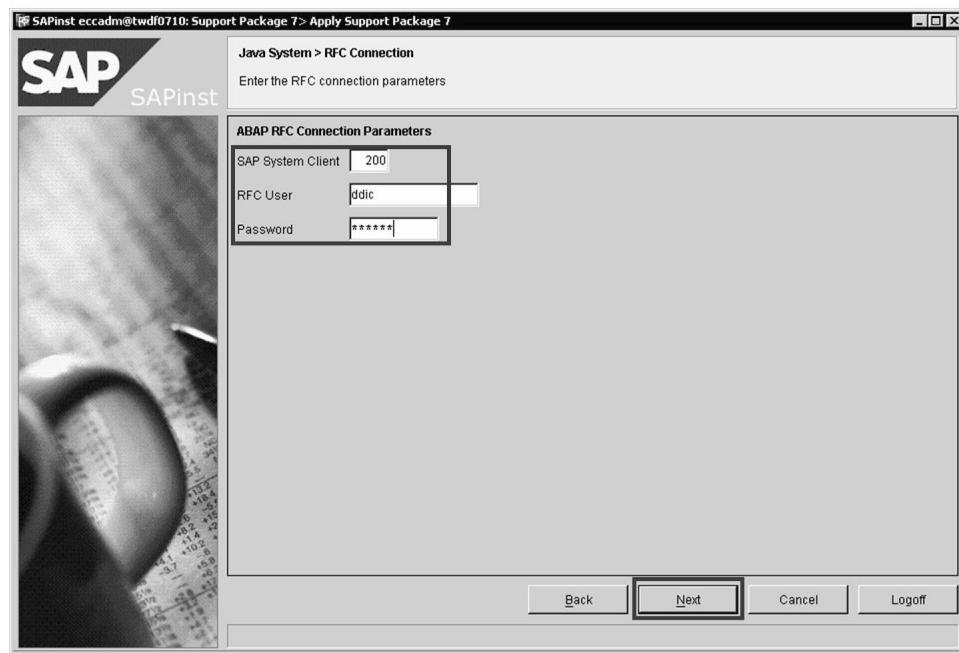
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To start patching the SAP Web AS Java Central Instance, follow the path *SAP Web AS Java Support Packages for Oracle* → *Support Package 7* → *Apply Support Package 7*.



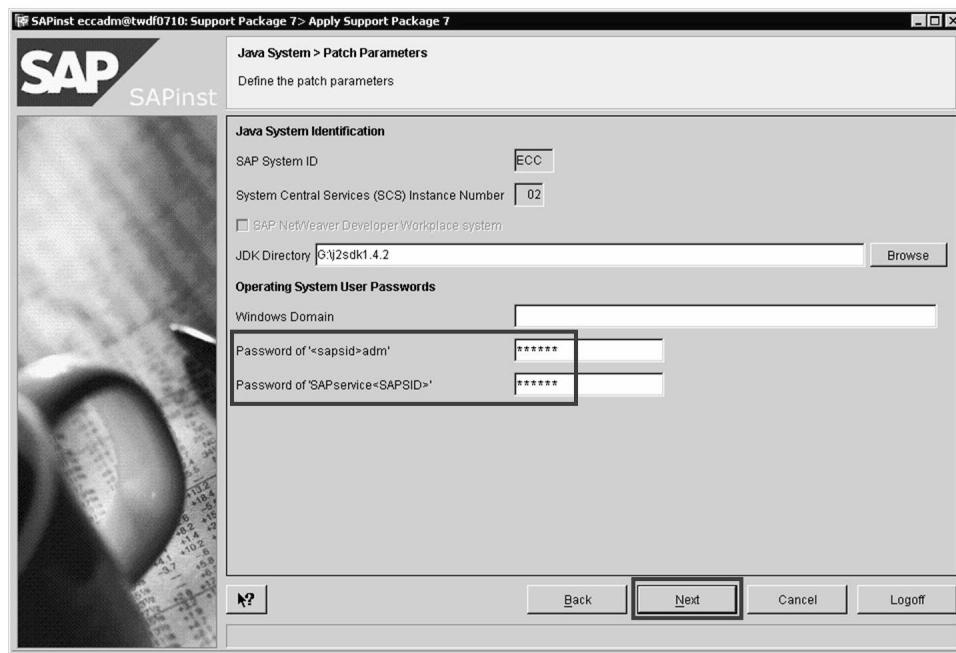
**Figure 207: Select Central Instance Profile**

Select the path to the Central Instance profile.



**Figure 208: Enter SAP Communication User Password and Client**

SAPinst needs to connect to the ABAP part of the SAP Web AS to make some configuration settings for the J2EE Add-In. Enter the DDIC password and the client number.

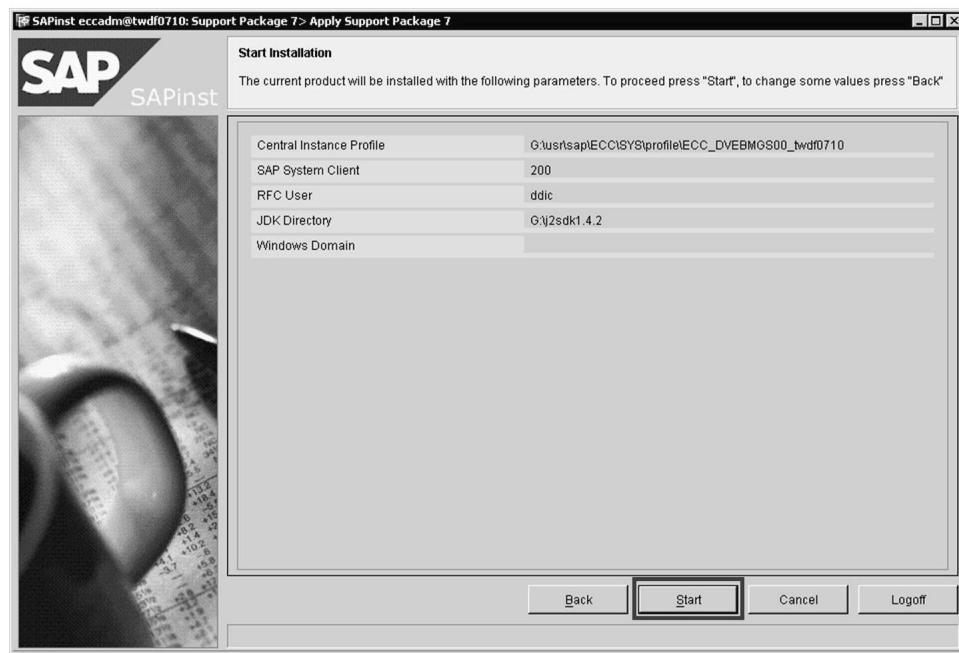


**Figure 209: SDK Path and Passwords for <sid>adm and SAPService<SID> Users**

Check the path to the directory where you installed the Java Development Kit.

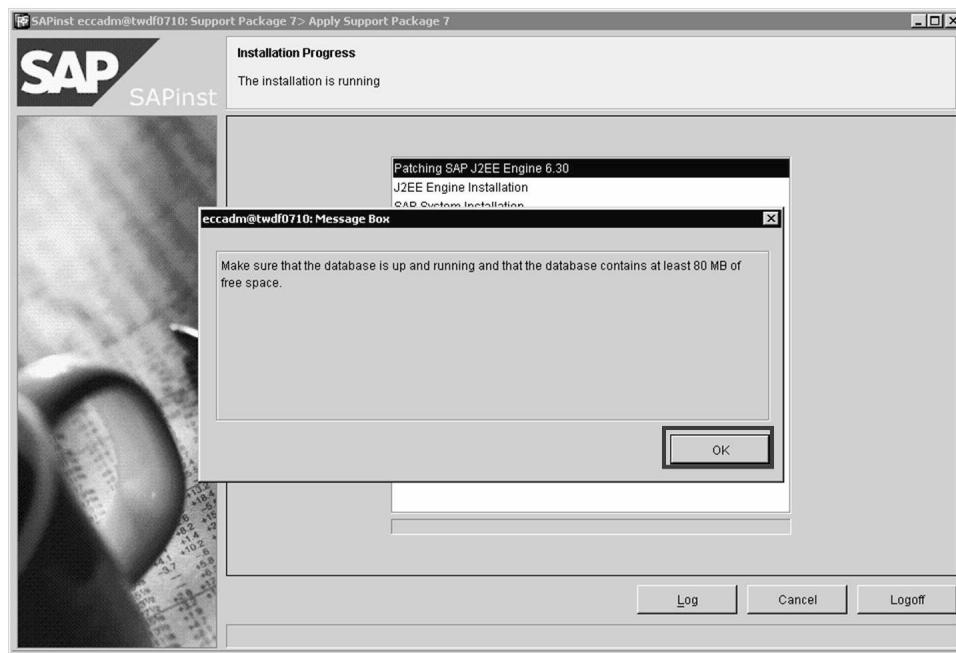
Enter the password for the SAP system administrator <sapsid>adm.

Enter the password for the SAP system administrator SAPService<sapsid>.



**Figure 210: SAP Web AS Java Patch Summary**

Check your input in the *Summary* screen and start applying the patch.



**Figure 211: Database Up Information Screen**

SAPinst informs you that the database needs to be running and to have sufficient free space

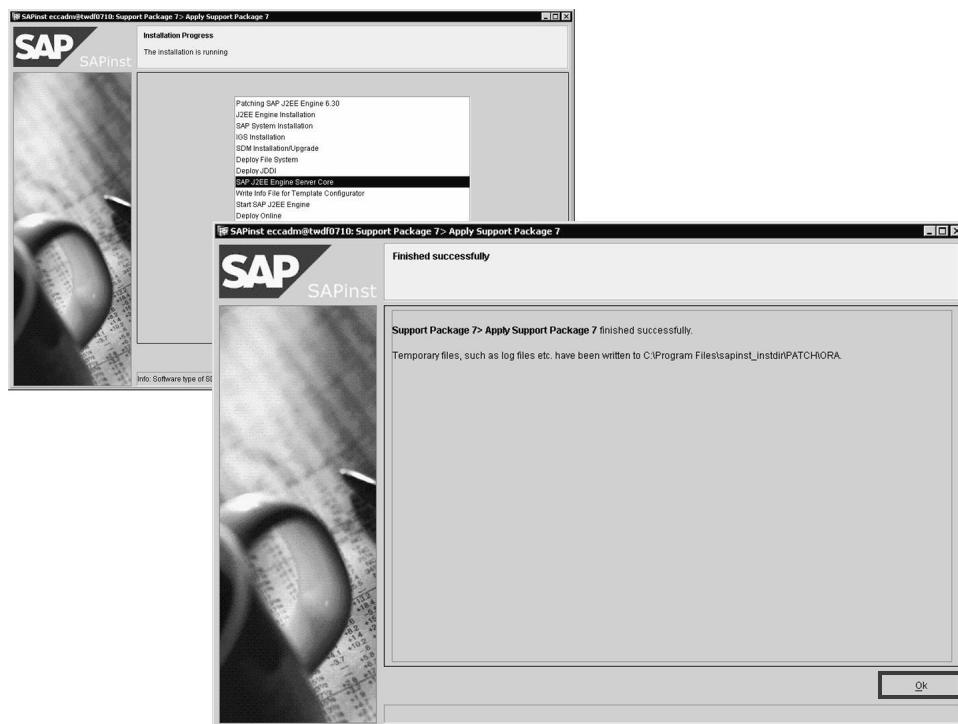


Figure 212: Patch Progress and Patch Finished Successfully

Congratulations!! You have just patched a SAP Web AS Java Central Instance.

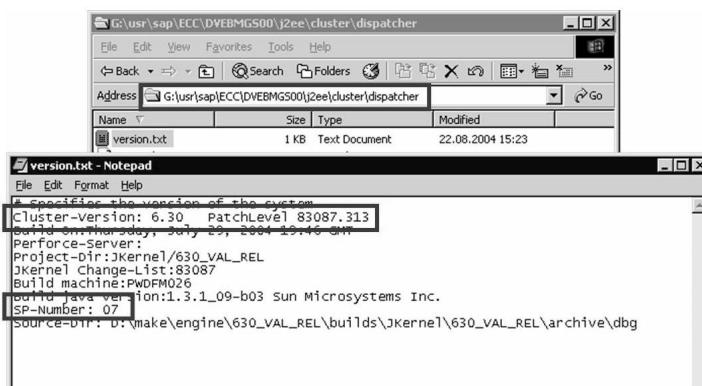


Figure 213: After Patching Status SAP Web AS Java

The screenshot shows the SAP Web AS Java version number after patching.

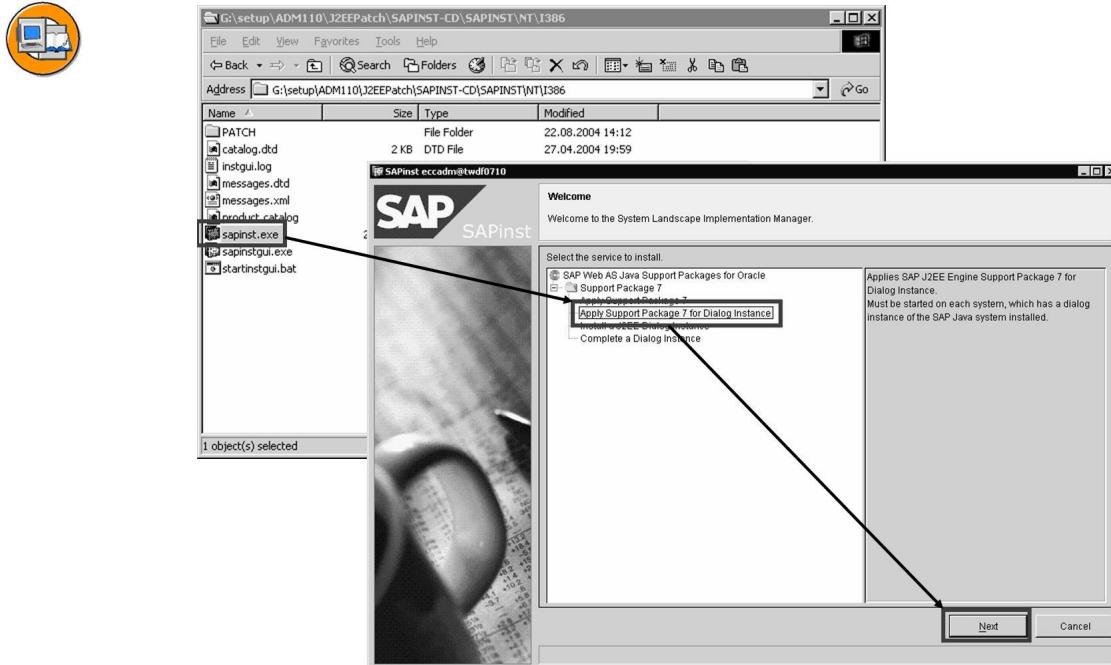
## Steps to Patch a SAP Web AS Java Dialog Instance



**Caution:** DO NOT demo the patching of a SAP Web AS Java Dialog Instance.

1. - You don't have the time!!!
2. - The procedure is the SAME as the Central Instance.
3. - Currently there are too many errors during the patch.

Start sapinst.exe as explained in the Introducing SAPinst lesson. The SAPinst *Welcome* screen displays the patch options, such as apply Support Package 7 or Complete a Dialog Instance.



**Figure 214: Start SAPinst**

To start patching the SAP Web AS Java Central Instance, follow the path *SAP Web AS Java Support Packages for Oracle* → *Support Package 7* → *Apply Support Package 7 for Dialog Instance*.

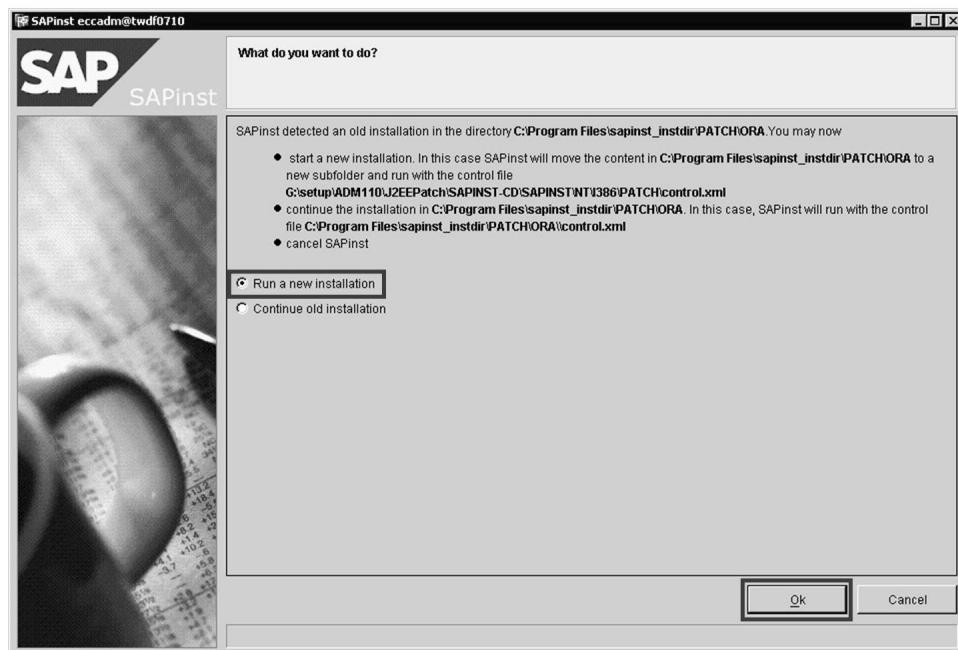


Figure 215: Old Patch Found

SAPinst will detect an old installation. Select *Run a new installation*.

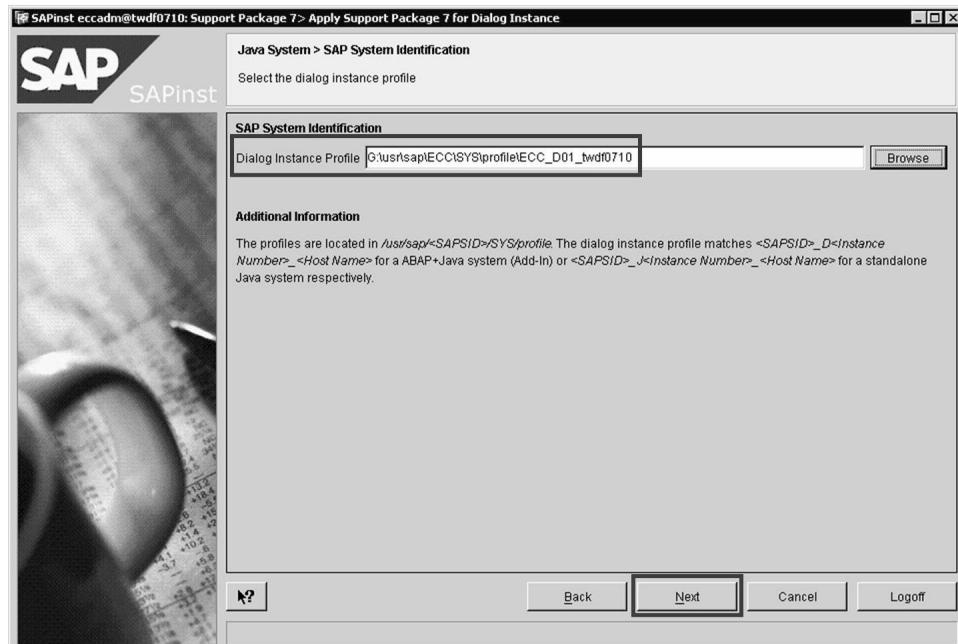
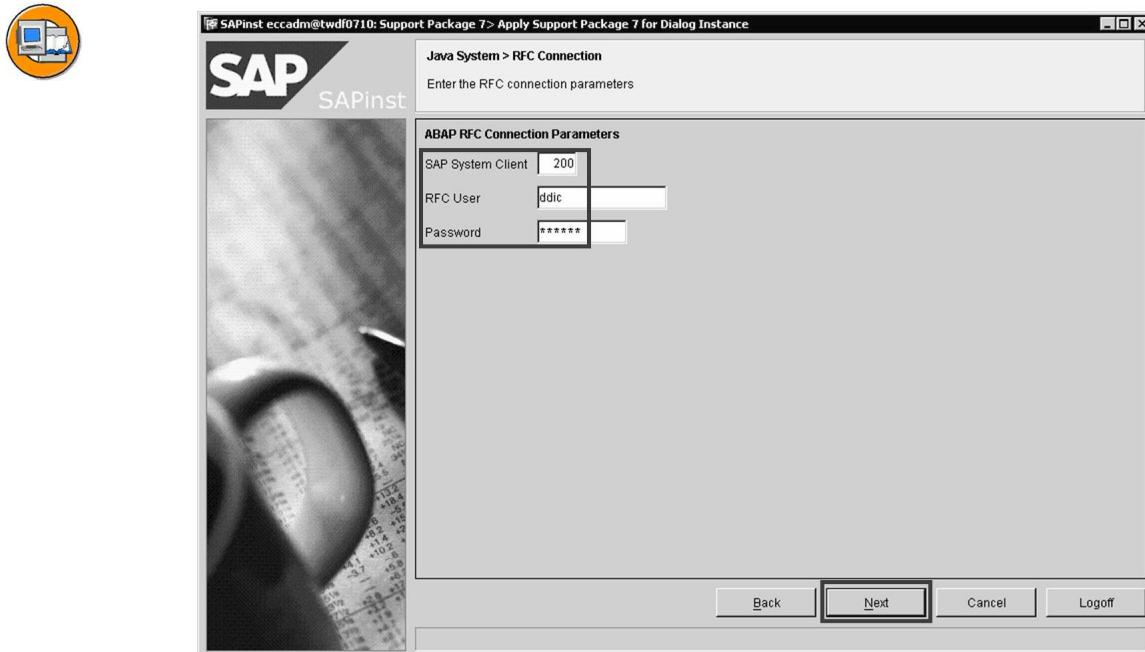


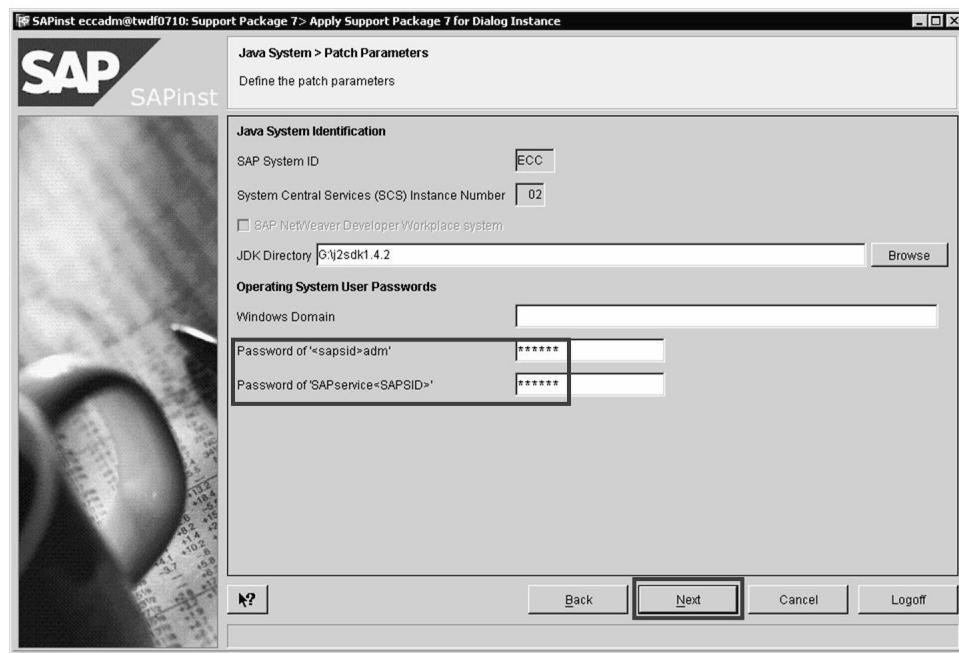
Figure 216: Select Dialog Instance Profile

Select the path to the Dialog Instance profile.



**Figure 217: Enter SAP Communication User Password and Client**

SAPinst needs to connect to the ABAP part of the SAP Web AS to make some configuration settings for the J2EE Add-In. Enter the DDIC password and the client number.

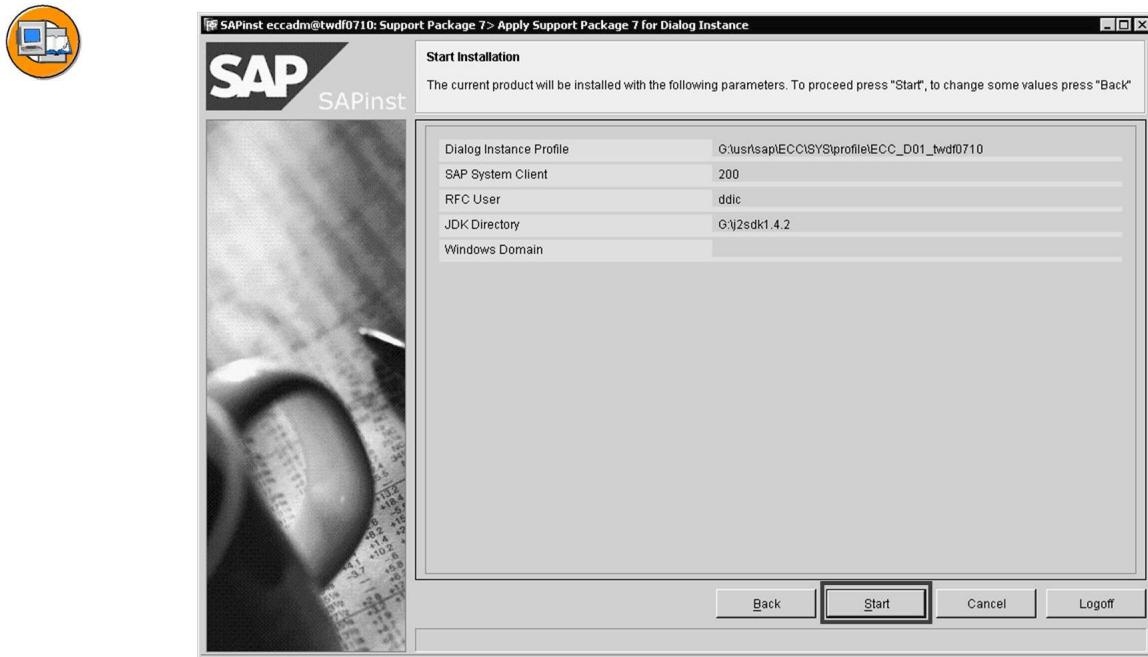


**Figure 218: SDK Path and Passwords for <sid>adm and SAPService<SID> Users**

Check the path to the directory where you installed the Java Development Kit.

Enter the password for the SAP system administrator <sapsid>adm.

Enter the password for the SAP system administrator SAPService<sapsid>.



**Figure 219: SAP Web AS Java Patch Summary**

Check your input in the *Summary* screen and start applying the patch.

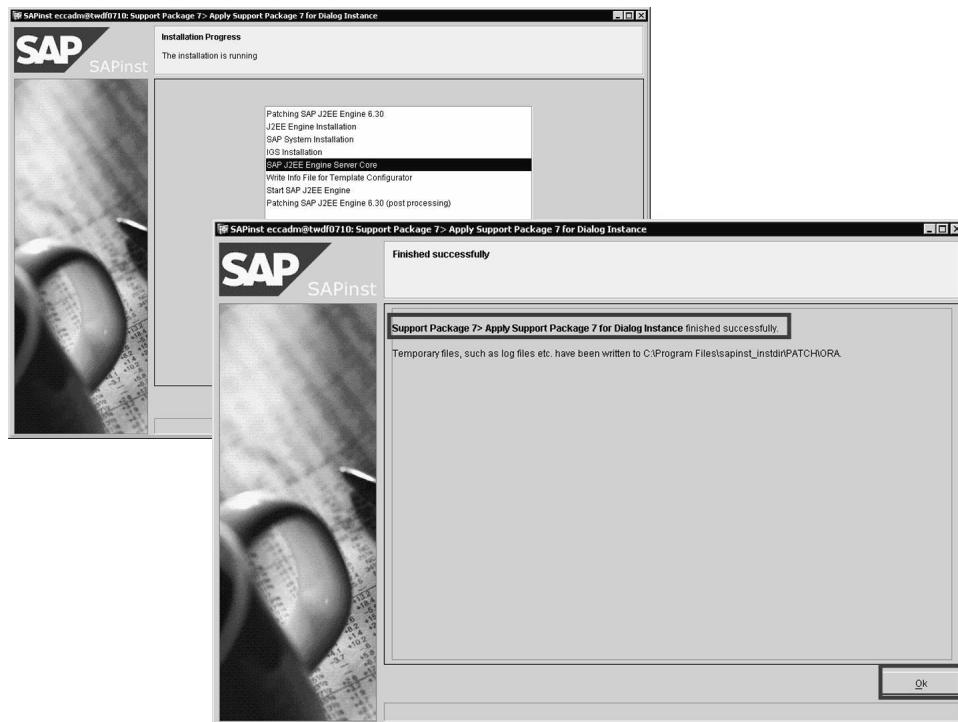


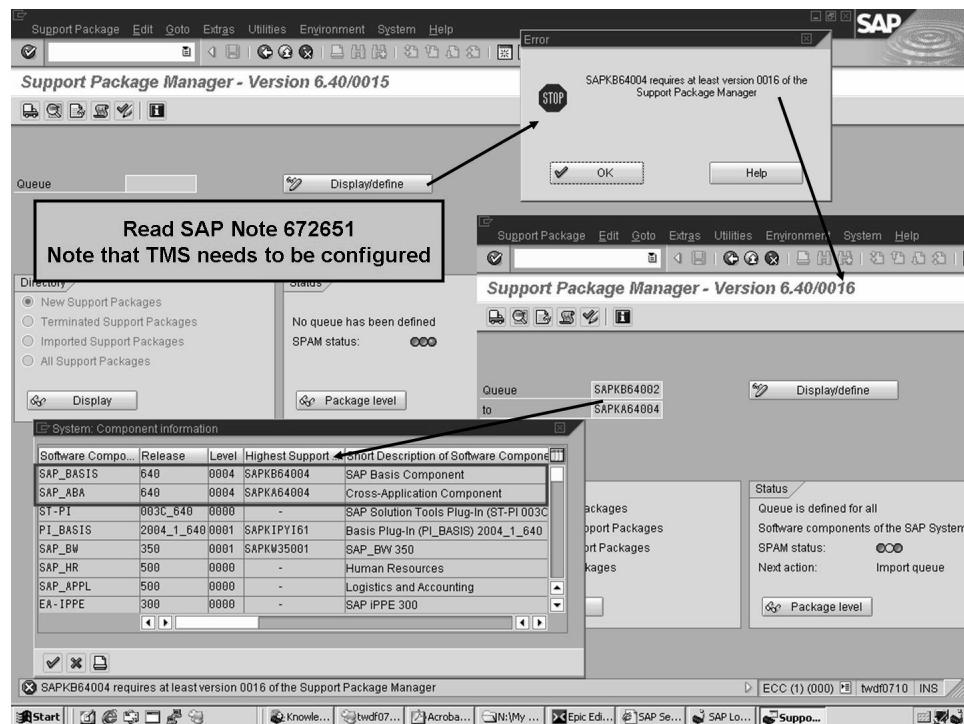
Figure 220: Patch Progress and Patch Finished Successfully

Congratulations!! You have just patched a SAP Web AS Java Dialog Instance.

## Steps to Apply Support Packages Using Transaction SPAM



No support packages are available on the server. Please refer to course ADM100 and ADM325 if there are any questions.



**Figure 221: Apply Support Packages Using Transaction SPAM**

The use of transaction SPAM is explained in great detail in the course ADM100 – SAP Web AS Administration I. The screenshots remind you how to apply Support Packages. In the example in the screenshots, only the BASIS and ABA Support Packages are applied to the SAP ERP Central Component system. There are several other Support Package types.



## Steps to Apply a Database Patch

- Download the latest database patch,  
<http://service.sap.com/patches>, to your server.
- Follow SAP note 530567 to install patches for SAP DB.
- Follow SAP note 544304 to install FixPaks for DB2 UDB; for DB2 on iSeries/zSeries, see notes.
- Follow SAP note 45876 to install patches for Informix.
- Follow SAP note 159268 to install Service Packs for Microsoft SQL Server.
- Follow SAP note 306408 to install Interims Patches for Oracle using OPatch.

Because different database releases might have different patch strategies, please check <http://service.sap.com/instguides> and go to *Other Documentation → Database Upgrades*.

There are different procedures to apply patches to the different databases supported by SAP systems. When applying patches, you will notice that databases from the same vendor can differ significantly between releases. As a result, ensure that you are using the patch description that fits your database release. In addition, check the SAP notes in the figure before applying a database patch. The content of the notes might have been revised.

For DB2 on iSeries, go to <http://www.4soi.de/IBM-Infoapars.php>. For DB2 on zSeries, follow the instructions on how to fix the operating system. SAP note 81737 lists the operating system fixes that should be applied in an SAP environment.



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## Exercise 13: Applying Patches

Exercise Duration: 15 Minutes

### Exercise Objectives

After completing this exercise, you will be able to:

- Apply a kernel patch
- Apply an SAP Web AS Java patch

### Business Example

You are the system administrator of ABC Limited, a petrochemical company. You installed SAP ERP Central Component. Now, you need to apply a kernel patch and an SAP Web AS Java patch.

#### Task 1:

Apply a kernel patch to your newly installed SAP system.

1. Check the current kernel patch level of your SAP system.
2. Check the new kernel patch level of your SAP system.

#### Task 2:

Apply a patch to SAP Web AS Java of your SAP system.

1. Check the current patch level of SAP Web AS Java.
2. Check the new patch level of SAP Web AS Java.

## Solution 13: Applying Patches

### Task 1:

Apply a kernel patch to your newly installed SAP system.

1. Check the current kernel patch level of your SAP system.
  - a) Use *System → Status* and choose *Other kernel info → Sup.Pkg lvl* to find information.

Alternatively, you can start transaction SM51, select one instance, and choose *Release notes*. You find the kernel patch level under Kernel patch number.
  - b) You find the patch to be applied at the following location:

Proceed as described during the lesson .  
G:\SETUP\ADM110\Kernel\_Patch
2. Check the new kernel patch level of your SAP system.
  - a) See solution for step1.

### Task 2:

Apply a patch to SAP Web AS Java of your SAP system.

1. Check the current patch level of SAP Web AS Java.
  - a) Find the version.txt file in the <Drive>:\usr\sap\<SID>\Instance>\j2ee\cluster\dispatcher\managers directory. Read the PatchLevel number.
  - b) You find the patch to be applied at the following location:

Proceed as described in the lesson.  
G:\SETUP\ADM110\SAP\_J2EE\_Engine\_Patch.
2. Check the new patch level of SAP Web AS Java.
  - a) See Solution for step1.



## Lesson Summary

You should now be able to:

- Discuss what a Support Package Stack is
- Describe the steps to apply kernel patches
- Describe the steps to apply SAP Web AS Java patches
- Describe the steps to apply ABAP support packages



## **Unit Summary**

You should now be able to:

- Discuss what a Support Package Stack is
- Describe the steps to apply kernel patches
- Describe the steps to apply SAP Web AS Java patches
- Describe the steps to apply ABAP support packages

### **Related Information**

- SAP Service Marketplace, <http://service.sap.com/patches>
- SAP notes as listed in this unit



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## Test Your Knowledge

1. What are the steps to apply a kernel patch?

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2. When applying a patch to an existing Dialog Instance SAP Web AS Java, you should select Complete a Dialog Instance.

*Determine whether this statement is true or false.*

- True
- False

3. Only the BASIS and ABA Support Packages are applied to the SAP ERP Central Component system.

*Determine whether this statement is true or false.*

- True
- False



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## Answers

1. What are the steps to apply a kernel patch?

**Answer:**

1. Decompress kernel patch files to a temporary folder.
2. Follow SAP note 19466.
3. Save the old kernel and replace parts of the old kernel with the new files.
2. When applying a patch to an existing Dialog Instance SAP Web AS Java, you should select Complete a Dialog Instance.

**Answer:** False

When applying a patch to an existing Dialog Instance SAP Web AS Java, you should always select Apply Support Package 7 for Dialog Instance.

3. Only the BASIS and ABA Support Packages are applied to the SAP ERP Central Component system.

**Answer:** False

There are several other Support Package types.

# Unit 8



## Converting Non-Unicode to Unicode



This unit describes the Unicode conversion method and all its necessary steps. The installation tools that all learners have used during the SAP ERP Central Component installation are the same for the conversion.

### Unit Overview

This unit explains the preparation for the conversion to Unicode, the procedure to perform a non-Unicode to Unicode conversion, and post-conversion tasks.



### Unit Objectives

After completing this unit, you will be able to:

- Explain the procedure to convert non-Unicode to Unicode

### Unit Contents

Lesson: Procedure for Converting Non-Unicode to Unicode ..... 378

**Lesson: Procedure for Converting Non-Unicode to Unicode**

Lesson Duration: 30 Minutes

**Lesson Overview**

This lesson explains the principle of how to convert non-Unicode SAP systems to Unicode.

**Lesson Objectives**

After completing this lesson, you will be able to:

- Explain the procedure to convert non-Unicode to Unicode



On a theoretical and simplified basis, this lesson explains the Unicode conversion method and all necessary steps.

**Business Example**

ABC Limited is a petrochemical company that uses SAP to manage its data. As the system administrator of the company, you installed SAP ERP Central Component, which is the latest version of SAP. Now, you would like to perform the procedure to convert your system from non-Unicode to Unicode.

**Prerequisites of the source system:**

Initialize the worklist:

- To be able to perform the conversion from non-Unicode to Unicode, you require a non-Unicode Kernel CD for the export and a Unicode Kernel CD for the import. As a result, you need both, the non-Unicode and the Unicode installation package.
- In transaction SPUMG, select *Scanner → Worklist → Initialize worklist*. The analysis level should be a Level 1 Consistency check, and this should appear directly above the worklist. All tables in the database's nametab appear in the worklist. The status indicator shows whether the initialization was completed or shows an error. Select the "Display Warnings in Detail" icon (second icon from the right side of the screen) from the toolbar to see the error message for a selected entry. The error log indicates the steps needed to repair the table.

- Changes to the database (Transports, Support Packages, etc.) are not automatically updated in the worklist. Update the worklist periodically. Select *Scanner → Worklist → Update worklist*.
- Initialize the language set: Select *Scanner → Language set → Initialize*. The language set is used in conjunction with language keys to determine the correct code page to use to convert data. It is also possible to exclude languages or include additional ones: *Edit → Language List → Codepage Assignment → edit*. For example, you may want to exclude the languages installed on the system but not used. If you have used an improper front-end code page setting (see SAP note 73606), it is possible to add languages to the language set to save the data.
- Consistency check: The analysis level should be a Level 1 Consistency check, which should appear directly above the worklist. To change the analysis level, select Change Analysis Level from the toolbar.
- Prerequisites of an MDMP system: In an MDMP system, the conversion must use language field information to correctly convert character data. If the restrictions on global data were followed in the MDMP system (see Note 73606), tables without a language field should only contain 7-bit ASCII characters. However, it is possible that other characters were entered into tables without a language field or that some tables may not have a language field. Converting these tables is problematic, but the Conversion Preparation and Post processing phases are designed to prevent any data loss in problematic cases. In transaction SPUMG, collect language information from the MDMP database (see online documentation for SPUMG). For each table in the database, this information is placed in a Conversion Description stored in the Conversion Control Table. The conversion tools read from the Conversion Control Table during database export and use it to correctly convert character data to Unicode. In addition, this data is needed for post-conversion processing.

This step is required only for MDMP systems and must be performed before converting the database to Unicode.

- For code page-dependent text (non 7-bit ASCII characters) without a language key, there are two possibilities to determine the correct language key:
  1. Code page guess function: The heuristic approach to determine the corresponding language based on the amount of different characters in the text.
  2. System vocabulary: Try to find words from this text in other data with language information.
- Plan workerjobs: Select Schedule Workerjob and then set the time and date for the workerjob. Select Monitor from the toolbar to view table statistics, including the number of transparent, cluster and pool tables. The statistics also show the

number of inconsistent tables, which must be repaired before the migration. To obtain the list of all bad tables, choose Select entries from the toolbar and on the Selection screen enter E in the Status field. For information about each table, select DETAIL from the toolbar. To see all errors, select “Display Warnings in Detail” icon (second icon from the right side of the screen).

- To see the running Workerjobs, select Job Overview from the toolbar. In the job overview, there is one master job, UMG\_PMIG\_MASTER\_JOB, for the planned Workerjobs UMG\_PMIG\_WORKER\_JOB. If the Workerjob is cancelled due to an error, the master job will then restart a new Workerjob. This is only true for the consistency check.
- Correct any inconsistencies: There are several types of inconsistencies. These errors must be corrected before the system can be converted. Otherwise, the tables can be manually deleted from the R3Load control file, and the tables will not be exported.
- To see the tables with inconsistencies, select Selection from the toolbar and then Status E. To see a detailed description of the inconsistency and how to handle the error, select  from the toolbar. One of the following error categories are displayed:
  - 1 = Incorrect Table definition (solution: see SAP note 548016)
  - 2 = Table cannot be read
  - 3 = Conversion error with interrupt
  - 4 = Language key is not type LANG (solution: see SAP note 548016)
  - 5 = Guessing function failed (Only for MDMP systems: see SAP note 551334)
  - 6 = Invalid language key
  - 7 = Illegal initial values (solution: see SAP note 548016)
  - 8 = Illegal pool table values (solution: see SAP note 548016)
  - 9 = Multiple language keys
  - A = Pool Table: language key not in table key (These tables will have be repaired manually after conversion: see SAP note 548016)
  - Execute the TWTOOL01 report, which finds all active pool-match code IDs. Unicode SAP systems do not support the match code IDs. (See SAP note 24860)

Ensure that the DDXTT\_CONV\_UC and DDXTT tables are empty before starting the conversion.

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# Preparing for Conversion to Unicode

**This is the default conversion method:**

- Start an export of the entire database using R3Load.
  - Install a new Unicode database.
  - Import the database using R3Load again.



#### **Important notes for Unicode conversion:**

- Conversion from Unicode to non-Unicode is not possible.
  - MCOD (more than one SAP system in one database):
    - A Unicode SAP system is not compatible with a non-Unicode SAP system.
  - Unicode SAP systems are not released for Informix.
  - Upgrades with simultaneous Unicode conversion is currently not possible.



If the source system is an MDMP system, perform the additional steps described in SAP note 551344.

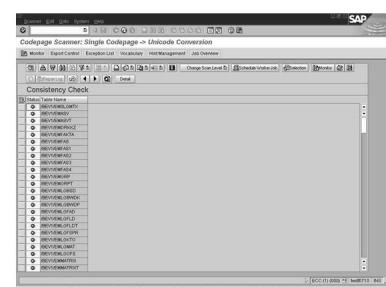
If you are using the HR function within SAP ERP Central Component, additional steps are mandatory. These steps are described in SAP note 573044.

Currently, SAP does not support an upgrade with simultaneous Unicode conversion. As a result, you must first upgrade a non-Unicode system with a Basis release earlier than 6.20 to 6.20 or later. You can convert to Unicode as soon as the non-Unicode system uses Basis release 6.20 or later.



Perform the following steps on the source system (see SAP note 548016) :

- Preparation step in transaction SPUMG
    - Initialize the worklist
    - Initialize the language set
    - Plan worker jobs for consistency check
    - Correct any inconsistencies
  - Prepare table pool conversion
  - Check code pages that are used in your system by referring to table TCPDB (see SAP Note 42305)



**Figure 222: Prerequisites of the Source System**

To be able to perform the conversion from non-Unicode to Unicode, you require a non-Unicode Kernel CD for the export and a Unicode Kernel CD for the import. As a result, you need both the non-Unicode and the Unicode installation packages.



See the Unicode conversion unit in course ADM326 for more information on special actions during the export. Also see the appendix to this unit to obtain more information about Unicode and RFC, and Unicode and ABAP programs.

## Performing a Conversion from Non-Unicode to Unicode



### Perform an export of the source database

- See SAP note 548016 for some database dependent steps
- See documentation *SAP NetWeaver '04 Installation Guide – Homogeneous and Heterogeneous system copy*
- Prepare the SAPinst installation
- Run SAPinst to export the database

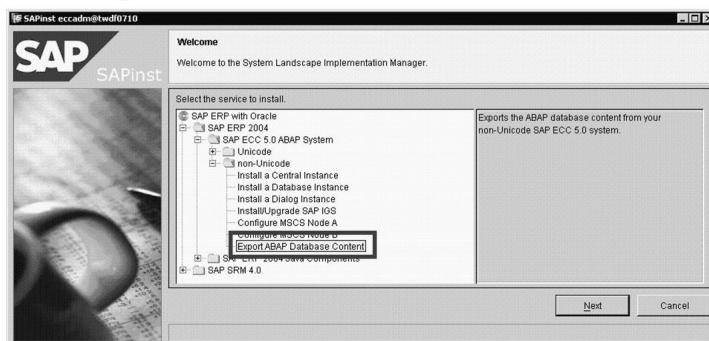


Figure 223: Actions on the Source System



- On the target host, create a directory <EXPDIR> with sufficient space for the database export files available.
- Copy all files and directories (recursively) that are located on the source host in the migration export directory from the source host to the target host.
- If you use ftp, make sure you use *ASCII mode* for transferring the directory <EXPDIR>/DB and use *binary mode* for transferring all other files.

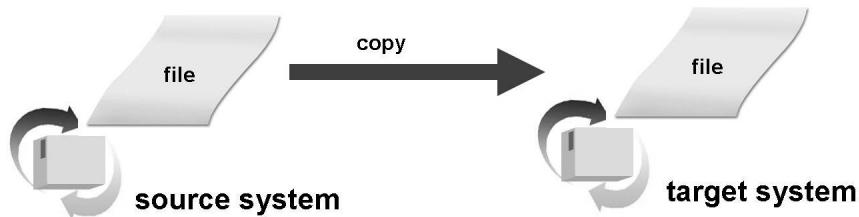


Figure 224: Transferring Export Files to the Target Host

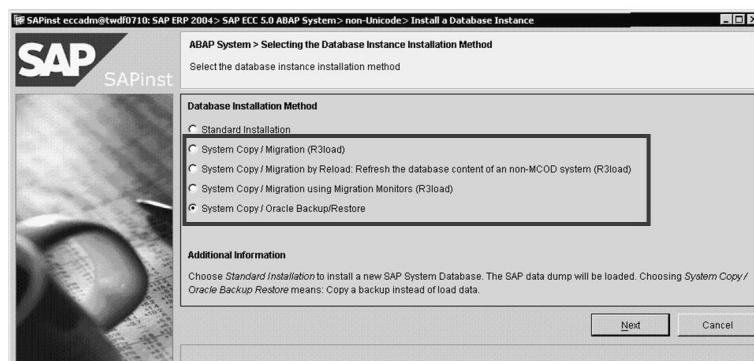


**1. Check free space for the database load:**

To find out the size of the export and the sizes of the tablespaces or dbspaces that will be created, look at the file **DBSIZE.XML** located in the directory **<DRIVE>:\<EXPDIR>\DB\<DATABASE>** (Windows) or **<EXPDIR>/DB/<DATABASE>** (UNIX)

**2. Install the target database system**

Select **System Copy / Migration** in the **Selecting the database instance installation method** screen



**Figure 225: Actions on the Target System (1/2)**

For instructions on how to install the target database system, see the installation guide, SAP Web Application Server on <Platform>:<Database>, the Input for the Installation section.

**In the General Load Parameters window, make the following import settings:**



- Load Packages from *MIGRATION C D*.
- Enter the following parameters:
  - *Migration Key*: Leave this field blank.
  - *Migration Export Directory*: Enter **<EXPDIR>**. Continue the target database system installation as described in the installation guide.



For final actions on the target system, see the installation guide for the “homogeneous and heterogeneous system copy”.

## Performing Post-Conversion Tasks



- Activate the logging mechanism of the database.
- Run installation check: Installation Check (transaction SM28).
- Perform post-installation activities (transaction SE06) with the *Database Copy* option.
  - This releases all transport, repair, and customizing requests that have not been released in the source system.
- Delete all entries from the following tables: ALCONSEG, ALSYSTEMS, DBSNP, MONI, OSMON, PAHI, SDBAD, SDBAH, SDBAP, SDBAR.
- Execute the RSBTCDEL program and select the *Delete with forced mode* field to delete cancelled and finished jobs.
- Check the consistency of Temporary Sequential Objects (TemSe) using transaction SP12. For more information, see SAP note 16875.
- Adapt the definition of the printers to meet the new system requirements.
- Delete entries in the DDLOG table for buffer synchronization. Synchronize the buffers as described in SAP note 25380.
- Adapt the client information for logical systems.
- Adapt the RFC destinations (transaction SM59) and clean the transactional RFCs (transaction SM58).



- Create new operation modes, remove old ones, adapt the operation mode time tables (transactions RZ04 and SM63).
- Check the consistency of the database (transaction DB02).
- Delete all entries from the TPFET and TPFHT tables that contain information about changes made to the profile of your source system.
- Delete all entries from the TLOCK table, which holds the repair requests from your source system.
- Reschedule cancelled jobs.
- Redefine database actions, such as backup and update statistics, (transaction DB13).
- Check the entries of the following tables in all involved systems:
  - TXCOM (SM54)
  - THOST (SM55)
- Post-processing of customer objects:
  - If customer objects are not original in the new system, modify the corresponding entries in the TADIR table.

- If you encounter problems while modifying a customer package using transaction SMTS or SM31, use *Validate* (ENTER) instead of *Save* to save your changes.

Refer to the installation guide, SAP NetWeaver '04 Installation Guide – Homogeneous and Heterogeneous system copy, the Final Activities section.



## **Facilitated Discussion**

### **Discussion Questions**

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the pros and cons of a Unicode conversion.

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## Lesson Summary

You should now be able to:

- Explain the procedure to convert non-Unicode to Unicode



## **Unit Summary**

You should now be able to:

- Explain the procedure to convert non-Unicode to Unicode

### **Related Information**

- SAP Service Marketplace, <http://service.sap.com/unicode>
- SAP notes as listed in this unit



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## Test Your Knowledge

1. To be able to perform conversion from non-Unicode to Unicode, you require a non-Unicode Kernel CD for the export and a Unicode Kernel CD for the \_\_\_\_\_.

*Fill in the blanks to complete the sentence.*



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## **Answers**

1. To be able to perform conversion from non-Unicode to Unicode, you require a non-Unicode Kernel CD for the export and a Unicode Kernel CD for the import.

**Answer:** import

# Unit 9



## Troubleshooting Installation Problems



This unit provides a general guideline to solve installation problems. There are some examples available that show different error situations.

### Unit Overview

This unit explains the methods to solve installation problems with the SAP ERP Central Component installation. It also explains how to handle SAPinst, installation problems, and restart an installation.



### Unit Objectives

After completing this unit, you will be able to:

- Explain the ways to solve different problems during the SAP ERP Central Component installation

### Unit Contents

Lesson: Solving Problems During SAP ERP Central Component Installation.....	392
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## Lesson: Solving Problems During SAP ERP Central Component Installation

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Lesson Duration: 30 Minutes

### Lesson Overview

This lesson explains the various methods to solve the SAP ERP Central Component installation problems.



### Lesson Objectives

After completing this lesson, you will be able to:

- Explain the ways to solve different problems during the SAP ERP Central Component installation



This lesson provides a general guideline to solve installation problems. It also provides some examples that show different error situations.

### Business Example

ABC Limited, a petrochemical company, uses SAP to manage its data. The company decides to install the latest version of SAP, SAP ERP Central Component, to use the functions delivered with the extension set of SAP ERP Central Component. As the system administrator of the company, you have been assigned the task of installing SAP ERP Central Component. However, you face some problems during the installation process. You need to handle these problems and restart the installation.



Explain how to deal with problems which occur during installation to learners. Mention installation guides and SAP notes, which contain preparation steps to prevent error situations and hints to solve installation problems.

## Guideline to Solving Installation Problems



- Check the sapinst.log file for the ERROR message type.
- Check if it is a known problem:
  - SAP notes mentioned in the installation guide
  - SAPinst troubleshooting guide
  - SAP notes located at service.sap.com/notes
- Check if it is an unknown problem:
  - Repeat the command on the operating system; check if the return code provides more information.
  - Create a customer message.  
Copy the keydb.xml and sapinst\_dev.log file to the sapservX SAP FTP server.
- Implement the solution and continue the installation.

Go to the end of sapinst.log and search the ERROR message type. You can find details about the error situation and the step that failed. If sapinst.log refers to other log files in the relevant sections, also check these log files.

Known problem:

- Search SAP notes using SAP Service Marketplace, which contains possible solutions.
- Search in SAP notes provided by the installation guide or other troubleshooting guides. Go to service.sap.com/sapinstfeedback and find the SAPinst troubleshooting guide.

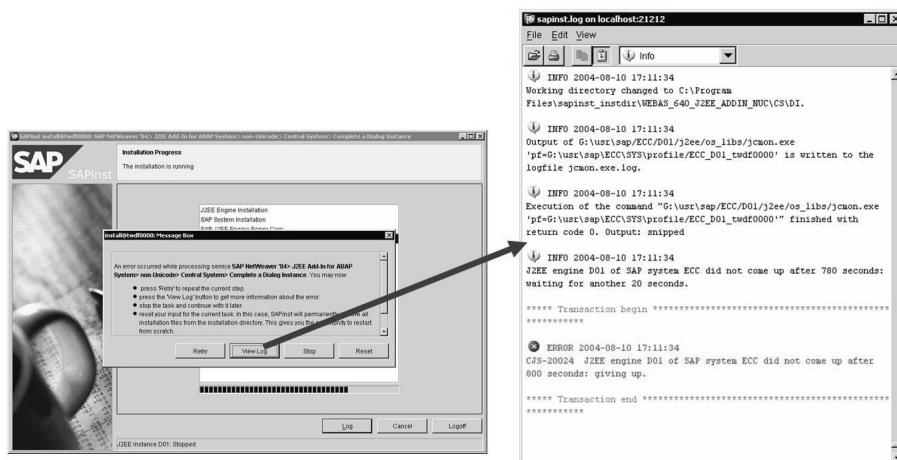
Unknown problem:

- Try to find the reason for the error by repeating the command at the operating system level and checking if the return code provides more information.
- Copy the following files from your installation directory, <SAPinst\_INSTDIR>, **to sapserv<x>** (see SAP note 40024): keydb.xml, sapinst\_dev.log
- Additional log file(s), if sapinst.log reference the file(s) in the error message.
- Create a customer message via SAP Service Marketplace (<http://service.sap.com/message>) or SAP Net - R/3 Front-End using the BC-INS component.



Explain how to restart an installation and distinguish between the different starting situations.

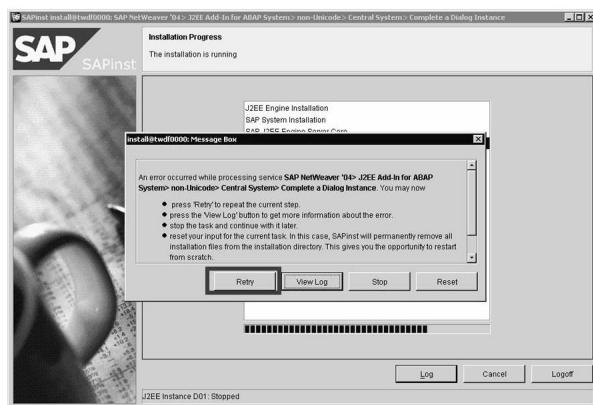
## Steps to Restart the Installation



**Figure 226: Restart Installation (1/5)**

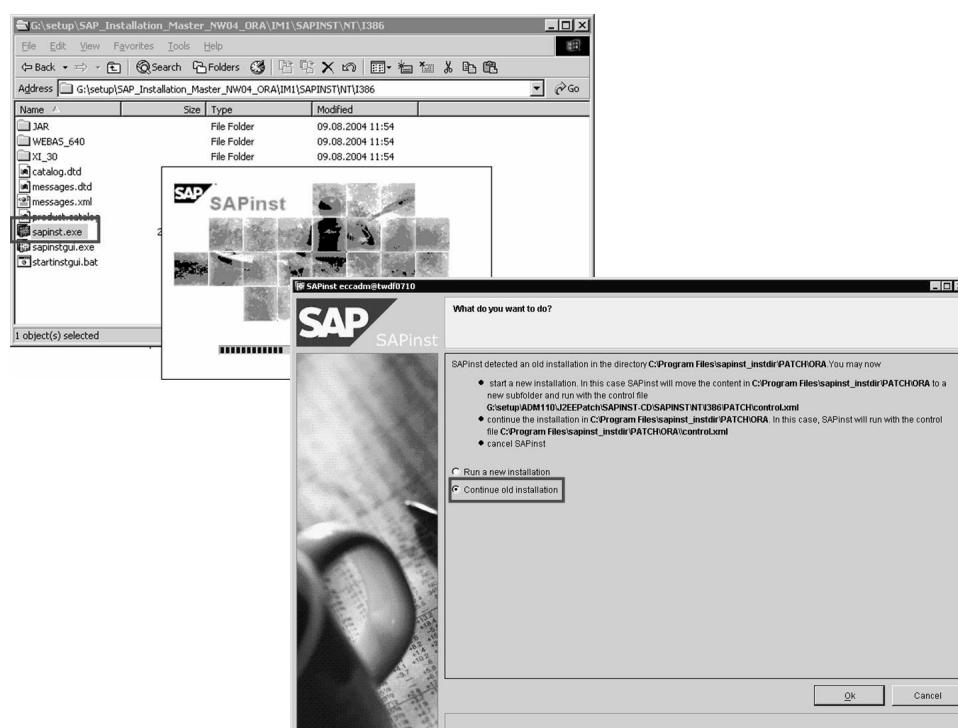
### Restarting the installation

- SAPinst does not abort the installation in error situations.
- SAPinst records the installation's progress in the keydb.xml file.
- You can continue the installation from the failed step without repeating the previous steps.



**Figure 227: Restart Installation (2/5)**

After you have solved the problem, select the *Retry* button to continue with the installation.



**Figure 228: Restart Installation (3/5)**

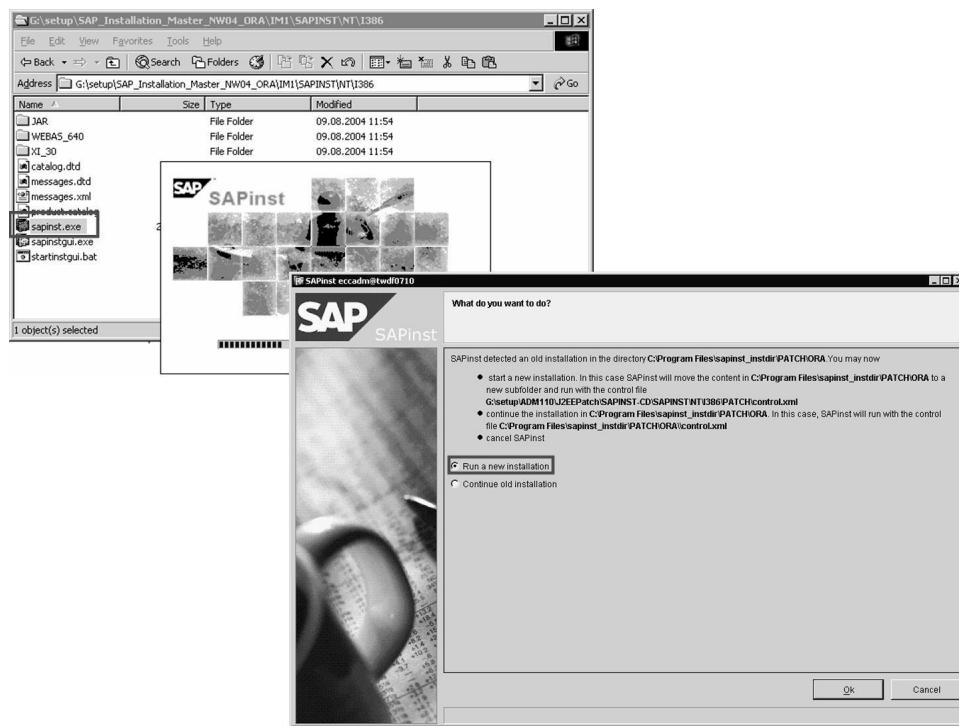


Figure 229: Restart Installation (4/5)



**Figure 230: Restart Installation (5/5)**

Reset the installation after using the *Cancel* button. If you cancel the installation in the dialog phase (that is the phase in which you enter the parameters) of SAPinst with *Cancel*, you have to restart the installation from the CD with SETUP.CMD (Windows). The cancelled installation cannot be continued during the dialog phase, which is the phase in which you enter parameters. You can cancel and continue an installation in the processing phase.

## SAP Notes with Known Installation Problems



- 668608 - Master Guide SAP NetWeaver '04
- 723288 - Central Installation Note SAP Web AS 6.40
- 746576 - SAP ERP Central Component 5.0: Installation/upgrade
- 729326 - INST: SAP ERP Central Component 5.0 ABAP on UNIX
- 735793 - INST: SAP ERP Central Component 5.0 on Windows
- 675940 - SAP Web AS 6.40 Installation on Windows: Oracle
- Other SAP notes for other databases:

## Flow Trace



- Flow Trace provides more detailed information about the installation progress and success.
- For detailed information during error situations, restart SAPinst, as follows:
  1. Set the FLOW\_TRACE environment variable to enabled.
  2. Start SAPinst, as follows:  
sapinst SAPINST\_MESSAGE\_THRESHOLD=flow\_trace

## Problems With SAPinst

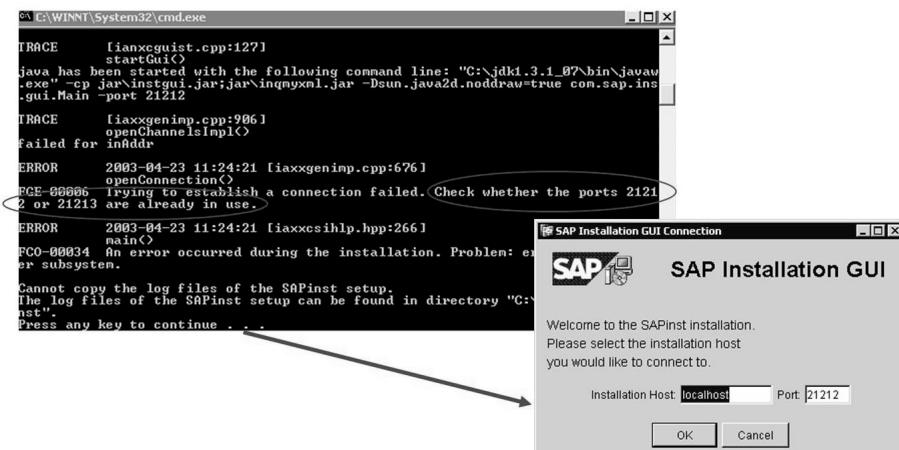


Figure 231: SAPinst and Ports

- SAPinst uses the 21212 and 21213 ports for communication with the SAPinst GUI.
- An error message occurs if the ports are already in use:

There are two ways to solve the problem and start SAPinst, one on Windows and one on UNIX:

- Select any key to continue and choose an unused port on this host.
- On Windows, start SAPinst with special parameters:

```
.\\sapinst.exe SAPINST_CONTROL_URL=control_bootstrap.xml  
SAPINST_DIALOG_PORT=<port> (where, <port> is an unused port on your  
host)
```

- On UNIX, start SAPinst with special parameters:

```
<SAPinst CD>/SAPINST/UNIX/ \\ <platform>/INSTALL -port \  
<free_port_number>
```



- **You must not modify the SAPinst XML files, especially the keydb.xml file, unless SAP delivers a description for the modification.**



**Figure 232: Restriction**



## **Facilitated Discussion**

### **Discussion Questions**

Use the following questions to engage the participants in the discussion. Feel free to use your own additional questions.

Discuss the steps to restart the installation.

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## Lesson Summary

You should now be able to:

- Explain the ways to solve different problems during the SAP ERP Central Component installation



## **Unit Summary**

You should now be able to:

- Explain the ways to solve different problems during the SAP ERP Central Component installation

### **Related Information**

- SAP Service Marketplace, <http://service.sap.com/patches>
- SAP Service Marketplace, <http://service.sap.com/instguides>
  - SAP Web Application Server: Homogeneous and Heterogeneous System Copy
  - SAP Web Application Server on <Platform> : <Database>
- SAP notes as listed in this unit



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## **Test Your Knowledge**

1. What is the use of Flow Trace?

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**368**

## **Answers**

1. What is the use of Flow Trace?

**Answer:** Flow Trace provides more detailed information about the installation's progress and success.



## Course Summary

You should now be able to:

- List the new features of SAP ERP Central Component
- List the requirements to install SAP ERP Central Component
- Perform the necessary preparation steps to install SAP ERP Central Component
- Install the SAP GUI
- Install a central instance, a dialog instance and a database instance
- Install SAP Web Application Server Java
- Perform the necessary post-installation activities
- Apply patches to SAP ERP Central Component
- List the necessary steps to convert non-Unicode to Unicode
- Handle SAPinst and installation problems



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# *Feedback*

SAP AG has made every effort in the preparation of this course to ensure the accuracy and completeness of the materials. If you have any corrections or suggestions for improvement, please record them in the appropriate place in the course evaluation.