Installing an Additional SAP J2EE for a Portal Cluster

SAP Enterprise Portal 6.0 SP2

Document version 2.0

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Icons in Body Text

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see *Help on Help → General Information Classes and Information Classes for Business Information Warehouse* on the first page of the any version of *SAP Library*.

Typographic Conventions

Type Style	Description
Example text	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options.
	Cross-references to other documentation.
Example text	Emphasized words or phrases in body text, graphic titles, and table titles.
EXAMPLE TEXT	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
`Example text`	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
`Example text`	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE TEXT`	Keys on the keyboard, for example, `F2` or `ENTER`.

Contents

Installing an Additional SAP J2EE for a Portal Cluster

Purpose

This guide provides practical information on the installation of additional portals to a portal cluster environment. This installation is performed only after having installed one initial portal platform.

The Enterprise Portal application runs on SAP J2EE Engine. when installing the portal, the SAP J2EE installs on the host both a *dispatcher* and a *server*. You can add more servers to an existing dispatcher or you can install an additional SAP J2EE Engine on a different machine (both a dispatcher and a server) and synchronize it with the application running on the initial machine. The addition of more servers to a dispatcher relieves overload on the CPU of a single host while the addition of more hosts provides means for load balancing solution for the portal.

This guide describes the following procedures:

- Adding SAP J2EE servers to the machine where a portal is already installed, either an initial portal or a clustered portal

- Adding a portal installation on a different machine.

While adding SAP J2EE Engine server is fairly simple, adding an additional portal is more complex. If you are adding a SAP J2EE Server to an existing installation, use only the topic Adding SAP J2EE Server on a Machine with Existing Portal [Page 10]. For installing an additional portal on a different machine, use this guide.

Implementation Considerations

In order to construct the optimal portal cluster configuration for your organization, it is important to have an understanding of the clustered environment before implementing the procedures described here for installing the clustered portal. See the SAP Enterprise Portal Technical Infrastructure guide, which includes discussion on the clustered environment for Enterprise Portal.

Read the installation SAP Notes before beginning the installation. These SAP Notes contain the most recent installation information, as well as corrections to the installation documentation.

Make sure that you have the most recent version of each SAP Note. You can find the SAP Notes in SAP Service Marketplace (`http://service.sap.com/notes`).

List of Related SAP Notes

SAP Note Number	Title
668312	Central Note – Enterprise Portal 6.0 SP2 Installation

See also Clustered Portal Description [Page 10] for an overview of the entire installation process.

Clustered Portal Description

In an Enterprise Portal production system, you have more than one portal machine to ensure availability and performance. After installing an initial Portal Platform, you can add additional SAP J2EE servers on the same machine or install additional portals on other machines.

An additional portal is installed and connected to the initial portal as part of the same J2EE cluster. In a J2EE cluster, all deployed applications (including the IRJ) are synchronized across all the servers in the cluster.

The installation of the SAP J2EE Engine on each machine is done using SAPinst. Additional J2EE servers are added manually using the SAP J2EE Config tool.

Adding SAP J2EE Server on a Machine with Existing Portal

Use

Add a SAP J2EE server to the existing portal installation on the machine to enhance performance.

As part of the scale-in process of the portal, to optimize CPU usage on multiple CPU machines, it is recommended that you add one SAP J2EE server per two CPUs.

Prerequisites

There is a portal installation (either an initial portal or a clustered portal) on the machine.

Procedure

To add an additional SAP J2EE Server:

1. Open the J2EE Config Tool.

2. From the New menu, choose *New Server*.

3. In the New Server dialog that opens, clear the "clear all application data." checkbox.

4. Click *OK*.

    A new server is installed, connected to your portal cluster. This procedure may be time consuming, lasting up to 15 min.

    When the control returns to the Config tool, the new server is installed.

5. In the Config tool, expand the Cluster/Server node (that of the first server). Then, expand the node *Managers → Cluster/Manager*.

6. In the work area, copy the value of the parameter ClusterHosts. (For example: localhost:50010).

7. In the Config tool, expand the Cluster/Server<*new server #*> node. Then, expand the node *Managers → Cluster/Manager*.

8. In the work area, the default values for the new server are displayed.

9. Change the value of the parameter ClusterHosts to that of the main server, and click *Add*.

10. Assign unique numerical values to the following parameters:

   o   JoinPort

   o   ClusterElementId

   o   OpenPort

By default, these parameters receive values ending with the server number according to the order in which it was added. For example, if you are adding a second server to the initial portal, these parameters will end with the digit '2'.

If you are adding servers on more than one machine in the cluster, all of these parameter values on each machine will end with the digit corresponding to their local counter, and hence will not be unique.

Therefore, assign these parameters values that are unique within the cluster, and click *Add*.

11. From the File menu, click *Apply* to save your changes..

Result

The new server is ready to go.

Installation Process

This section details the steps required to install a clustered portal platform.

The installation process is structured in sections, as follows:

-   Planning –information on the actions required before installing.

-   Preparations –how to get ready for the installation.

-   Installation –a step-by-step procedure for installing the portal using SAPinst.

-   Post-Installation –information on settings and configuration required after running the automatic installation procedure and on how to launch the portal.

-   Installation Check –details on how to verify and validate your installation.

Recommended Work Mode

In this section, each of the processes required for the installation is detailed in a table. Use the tables below as a checklist for installing the system and for navigating through the installation procedures.

All necessary installation phases (planning, preparation, installation, and post-installation) are listed in these tables.

Use the links to the general descriptions of the actions and to any additional information to help you perform the actions. This prevents you from missing important information.

We recommend that you proceed as follows to install a clustered portal platform:

1. Print out the tables below.

2. Follow the installation sequence as shown in the tables.

    o   If a step is required for your installation, follow the link for that step to the corresponding section.

    o   Perform the procedure described there.

    o   After you have successfully completed the installation step, mark the corresponding entry in the printed table with a checkmark (!) to log the progress of your installation.

    o   Proceed with the next step listed in the table.

Process Flow

Planning

Careful planning is a prerequisite for the successful installation of the system.

!	Action – Additional Portal Platform for Cluster
	Plan the portal cluster configuration. See the SAP Enterprise Portal Technical Infrastructure guide for information. Also see the Planning [Page 13] section of this guide.
!	Action – Content Management and Collaboration
	If you already have a cluster installation running with a portal and want to add Content Management and Collaboration at a later point in time, follow the instructions for Adding CM and Collaboration to an Existing Cluster Installation [Page 33].

Preparations

Before you install the additional portal platform, you have to perform the following actions:

!	Action – Additional Portal Platform for Cluster
	Make sure that you already have an initial Portal Platform installation up and running.
	Unix only: Configure the portal node host. See Configuring the Portal Host [Page 15] – Unix Only.
	Prepare for Security on **Windows**. See Preparing for Security - Windows Only [Page 15].
	Install JDK on the portal node machine. See Installing Java Development Kit [Page 16].
	Prepare the SAPinst installation. See Preparing the SAPinst Installation [Page 17].
	Unix only: Get the FTP server on the initial portal machine active and listening on the default port (21). See the section on activating the FTP server in Preparing the Initial Portal [Page 18]for Cluster Node Installation – Unix Only.
	Unix: Mount the directory *<initial_portal..>/usr/sap/<system_name>/global* –. See Preparing the Initial Portal [Page 18]for Cluster Node Installation [Page 18] – Unix Only.

Installation

The table below describes the installation procedures.

!	Action – Additional Portal Platform for Cluster
	Run SAPinst and continue with the step-by-step guided installation. See Installing on UNIX [Page 19] or Installing on Windows [Page 22].

Post-Installation

!	Action – Additional Portal Platform for Cluster
	Unix only: Mount the directory */usr/sap/<system_name>/global*. See Mount Global Directory on Initial Installation [Page 27] – Unix Only.
	Start the SAP J2EE Engine. See Start the SAP J2EE Engine [Page 28].
	Logon to portal. See Initial Logon [Page 29].
	Local installation verification. See Installation Check [Page 30].
	Cluster validation. See Installation Check [Page 30] for details.
	Licensing the cluster. See Licensing the Clustered Enterprise Portal [Page 30].

!	Action – Content Management
	Activate the Cluster Installation [Page 31].
	Assign Tasks to Content Management Instances [Page 32].

Planning

It is assumed that infrastructure and cluster planning have already been made. For additional information, refer to the *SAP Enterprise Portal Technical Infrastructure Guide*.

Install Additional Server or Additional Instance

After installing an initial Portal Platform, you can add additional SAP J2EE servers on the same machine or install additional portal instances on other machines. You can also add more J2EE servers on a machine with an additional SAP J2EE instance.

Refer to the *SAP Enterprise Portal Technical Infrastructure Guide* and to the SAP J2EE documentation to decide if you are adding a SAP J2EE server or an instance.

If you are installing an instance on a different machine, follow the instructions in this guide.

 If you are adding a server to an existing instance, you only have to perform the procedure Adding SAP J2EE Server on a Machine with Existing Portal [Page 10].

On Which Machine to Install?

It is possible to install the additional clustered portals in various configurations with other components of the portal architecture. The decision as to the configuration of the cluster and the specific machines on which to install the clustered portals must be the result of planning the cluster.

All machines in the cluster must use the same operating system.

Requirements

The following table lists the requirements for installing an additional clustered Portal Platform 6.0.

The host machine must meet the following requirements:

Requirement Type	Requirement
Hardware Requirements	Disk Space: The portal application requires 1G available. The DB requires 6GB - 10G RAM: 2 GBytes Dual CPU, 2x700
Software Requirements	Supported Operating Systems - see the Platform Availability Matrix (PAM) at *http://service.sap.com/ep60 -> Platform Availability Matrix*. Additional requirements - See in this document.
Other	A running initial portal installation

Preparations

The primary prerequisite for installing an additional portal platform for a cluster is the existence of a running initial portal on a remote machine. The preparations required before starting the installation of the additional portal are described in the following sections listed below.

- Configuring the Portal Host [Page 15]
- Installing Java Development Kit [Page 16]
- Preparing the SAPinst Installation [Page 17]
- Preparing the Initial and Local Hosts [Page 18]

Configuring the Portal Host – UNIX Only

Before installing, the portal host machine must be configured for SAP J2EE Engine installation and for SAPinst installation. To prepare the machine, follow the guide "OS Dependencies". The relevant sections are *Section 1* and the section relevant to your operating system. Find this guide on SAP Service Marketplace at:

http://service.sap.com/instguides --> SAP Web Application Server --> <Release> --> SAP Software on UNIX: OS Dependencies

Preparing for Security - Windows Only

Use

To ensure that only authorized users access the portal file system and start or stop the Web server in all the machines in the cluster, you need to prepare the following:

- A Windows startup user – this user can be the user who installs the portal clustered machine or another one. The user's credentials are required during installation. the user will be automatically added to a local admin group created by SAPinst.

  To facilitate user management in the environment, it is recommended that this user is a domain user.

- Recommended: A domain global group – to hold users with access to all the machines in the portal cluster. It is recommended to use the name SAP_<J2EE_SID>_GlobalAdmin.

In addition, the user who performs the installation must have specific permissions on the installation machine.

Recommended Way of Managing User Security for the Environment

SAPinst provides full control permissions to the portal installation file system only to the users in the SAP_<J2EE_SID>_LocalAdmin group. Add the domain user you specify during installation is to the SAP_<J2EE_SID>_GlobalAdmin group. After installation is completed, you can add this global group to the local group on each machine running a portal cluster to grant additional users in the global group access to portal file system resources.

If you want to change permissions to the file system, you change it once in the global group, and it is automatically updated in all the local groups.

> Make sure that you are logged on with permissions on the SAPPRT folder of the initial portal installation.

Procedure

Create a user

- Define whether to use your own credentials, or create a Windows user with administrative privileges. It is recommended that this user is a domain user.

Create a group

1. Create the global admin group once for the cluster.

   To create the group and the required users, refer to the guide "SAP Web Application Server Installation on Windows: MS SQL Server". Refer to Section 7.5.3.

   Find this guide on SAP Service Marketplace at:

   http://service.sap.com/instguides --> SAP Web Application Server --> <Release> --> ...

2. For each machine is the cluster, add this group the local group SAP_<J2EE_SID>_LocalAdmin.

To grant permissions to the user who runs SAPinst:

1. Access the Local Security Policy dialog as follows:

   From the *Windows Start menu* → *Programs* → *Administrative Tools* → *Local Security Policy*

2. Choose *Local Policies* → *User Rights Assignments.*

3. Assign the following rights to the user who performs the SAPinst installation:

   o Act as part of the operating system

   o Increase quotas

   o Replace a process-level token

4. Logoff and then logon to apply the changes, or restart the machine.

Installing Java Development Kit

Install the Java Development Kit (JDK). For supported version information, see the *Platform Availability Matrix (PAM)* at http://service.sap.com/ep60 -> *Platform Availability Matrix*.

Preparing the SAPinst Installation

Use

The installation tool SAPinst uses a Java-based graphical user interface called SAPinst GUI, and needs at least a Java Runtime Environment (JRE) which is part of the JDK package.

Procedure

Checking your Java Runtime

A Java Runtime Environment must be installed on your host. SAPinst GUI requires the same JRE version as the SAP Web AS. The Java Runtime is not part of the SAP shipment.

SAPinst requires that the $JAVA_HOME environment variable is set correctly to successfully issue Java calls.

> Make sure that your $JAVA_HOME environment variable is set to the directory where JDK is installed:
>
> - Example For Solaris: setenv JAVA_HOME /opt/j2sdk1_3_1_09
>
> - Example for HP: setenv JAVA_HOME /opt/java1.3
>
> - Windows: Set the JAVA_HOME environment variable as follows: Right-click My Computer. From the menu, choose Properties. From the Advanced tab, choose Environment Variables, then follow system commands.

> You can run SAPinst GUI standalone from a separate Windows or UNIX host. This enables you to perform the installation on a remote host while monitoring the installation with SAPinst GUI from a local host.

Checking Your JRE ext Directory

There are no *.jar files from a XML parser tool (like Xerces or Xalan that you might have installed) permitted in the JRE *ext* folder. This leads to a SAPinst GUI start-up error.

To check the JDK ext folder:

1. Log on to the host on which you intend to run the SAPinst GUI.

2. Check whether there are already `<parser_name>.jar` files (`xerces.jar,` for example) in your `ext` folder. The default path is:

   o UNIX: <JAVA_HOME>/JRE/lib/ext

   o Windows: <JAVA_HOME>\JRE\lib\ext

3. If you find any *.jar files, rename them (xerces.xxx, for example)

⚠️

Do **not** forget to rename the files back to their original names after the installation procedure is complete.

Preparing the Initial Portal for Node Installation – Unix Only

To prepare for the clustered portal installation, you need to facilitate the copying of files between source and target machines and the synchronization of portal services and components between the initial portal and the additional portal clustered installations. This section includes the following:

- Activate FTP Server – to facilitate synchronization
- Share Global Folder for Mount – for copying files

These procedures are not relevant for Windows installation.

Activate FTP Server

To facilitate the synchronization of portal services and components between the initial portal and the additional portal clustered installations, enable the FTP server on the initial machine.

Make sure that the FTP server is listening on the default port (**21**).

How to enable FTP service may vary for different flavors of UNIX. For your system, check the man pages or consult your system administrator.

Share Global Folder for Mount

To enable logon to the portal from any clustered machine, mount the initial portal global folder on the local (clustered) machine. To do so, you first have to share and export the global directory on the initial portal and then you mount it on the local clustered machine.

The mount takes place after the clustered installer has finished and before you start the cluster the first time.

Procedure on the Initial Portal Machine

The procedure of sharing the global directory is performed once. Then the directory is ready to be mounted on each of the clustered machines. Skip this procedure if you have already performed it.

💡

The mount procedure is performed on the local clustered machine after installation.

To prepare for remote mount on Solaris:

1. Logon with root user credentials.
2. Launch the following file with an Editor application:

    /etc/dfs/dfstab

3. add the following line to the file:

    ```
    share –F nfs –o rw /usr/sap/<system_name>/global
    ```

4. Save the file and exit.

5. Export the file, using the command:

   `share /usr/sap/<system_name>/global`

To prepare for remote mount on HP:

- Use the SAM application to share the file system:

  `/usr/sap/<system_name>/global`

To prepare for remote mount on AIX:

- Use the command:

  mknfsexp -d /usr/sap/<`system` name>/global

  Alternatively, use:

  smit $\rightarrow$ Communications Applications and Services $\rightarrow$ NFS $\rightarrow$ Network File System (NFS) $\rightarrow$ Add a Directory to Exports List $\rightarrow$ PATHNAME : /usr/sap/<system name>/global

Installation

This section provides information on the input required during the installation procedure and how to start and handle SAPinst, both on Unix and on windows.

Installing on UNIX

Use

This procedure describes how to run SAPinst to install the Additional SAP J2EE Engine for a Portal Platform Cluster on supported UNIX platforms.

This section describes a local installation. For more information on remote installation, see Controlling a SAPinst Installation from a Remote Machine [Page 34.].

Prerequisites

- If you start SAPinst GUI on your host, your `DISPLAY` and `JAVA_HOME` environment variables must be set correctly.

- Read the information on how SAPinst works before proceeding.

How SAPinst Works

Upon executing the command, SAPinst extracts files pertaining to the specific installation to the directory from which you executed the "sapinst" command.

If there are no write permissions to this directory, the SAPinst control files are automatically extracted to a temporary directory.

You can run SAPinst in one of the following manners:

- Call the command file on the CD from a specific directory in your local host (Recommended).

  When you install a component with SAPinst for the first time, SAPinst stores important log and command files specific to the installation, in the installation directory which you create before starting the installation, (see instructions below). This directory is referred to as SAPinst installation directory.

  - o Make sure that you use a separate installation directory for each installation you perform. Otherwise, you might lose previous log and command files stored in the SAPinst installation directory.

  - o If you wish to use an existing directory for an installation, execute the newinst.cmd file in the installation directory before you run sapinst.exe again. By doing so, you make sure that the log and command files of the installed instance are moved to a subdirectory and the installation of each new instance has its own log and command files.

- Execute the "sapinst" command from the CD.

  If you run SAPinst from the installation CD, the SAPinst control files are copied to a temporary installation directory, typically under the TMP directory. In this case, if SAPinst stops before completing the installation, or if you need the log files for maintenance, they might not be available. Therefore, it is **not** recommended to execute SAPinst from the CD.

- Extract the SAPinst executable files to a local directory, placing the installation command in that local directory, enabling execution from there, and not the CD.

  SAPinst does not install its own executable files on the local host. If you wish to do so, to avoid the need to use the CD for future use of SAPinst, use the clause "-extract" when running SAPinst, as explained below. Although performance may improve if you run SAPinst from the local host, it is recommended to run it as explained in the first bullet.

Procedure

1. Log on to your installation host as a user with *super user (root)* permission.

2. Mount the Installation CD.

   Mount the CD locally. We do **not** recommend using Network File System (NFS).

3. Create an installation directory for SAPinst with full permissions (777). The directory you create must be under a subdirectory, and not directly under the root directory. For example: */subdir/sapinst*. To create the directory, enter:

   `mkdir /<subdir>/<installation directory>`

   `chmod 777 <installation directory>`

   Each installation instance must have its own separate installation directory to prevent loss of previously generated log and command files.

   Sun Solaris only:

   Do **not** use `/tmp` and its subdirectories because they are removed when the system is rebooted. For more information, see the documentation *SAP Software on UNIX: OS Dependencies*, section *<Your operating system>: Preparing the Installation*.

4. Change to the installation directory:

   `cd <installation directory>`

5. Enter:

   `Installation CD/SAPINST/UNIX/<OS>/sapinst`

   The SAPinst GUI now starts automatically by displaying the *Welcome* screen.

   - If the directory <SAPinst_instdir> does not contain any files from a previous installation, a new installation starts. Otherwise, the previous installation is continued.

   - The above command starts SAPinst from the CD in directory <installation directory>. If you want the SAPinst executable to be copied to that directory, see below: *Extracting SAPinst Executable Files*.

   - If a message appears about ports being used, see SAPinst Ports [Page 35].

6. Follow the instructions on your screen. The input parameters are listed in the section Input Parameters for Installing Additional SAP J2EE [Page 24].

7. After you have entered all input parameters, SAPinst starts the installation and displays installation progress during the processing phase. If the installation was successful, the message "The installation finished successfully" is displayed.

If problems occur, see Troubleshooting the SAPinst Installation [Page 40].

Extracting SAPinst Executable Files

If you want the SAPinst executable to be copied to `<SAPinst_INSTDIR>`, instead of executing the command *sapinst* from the CD, do the following:

1. Enter the following command:

    `Installation CD/SAPINST/UNIX/<OS>/sapinst –extract`

2. Start SAPinst from your installation directory with the following command:

    `./sapinst`

Installing on Windows

Use

This procedure describes how to run SAPinst to install an additional SAP J2EE Engine for a portal cluster on supported Windows platforms.

This section describes a local installation. For more information on remote installation, see Controlling a SAPinst Installation from a Remote Machine [Page 34].

Prerequisites

*   Make sure that your `JAVA_HOME` environment variable must be set correctly.

*   Read the section on How SAPinst Works before proceeding.

How SAPinst works

Upon executing the command, SAPinst extracts files pertaining to the specific installation to the directory from which you executed the "sapinst" command.

If there are no write permissions to this directory, the SAPinst control files are automatically extracted to a temporary directory.

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- Call the command file on the CD from a specific directory in your local host (Recommended).

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    o If you wish to use an existing directory for an installation, execute the `newinst.cmd` file in the installation directory before you run `sapinst.exe` again. By doing so, you make sure that the log and command files of the installed instance are moved to a subdirectory and the installation of each new instance has its own log and command files.

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- Extract the SAPinst executable files to a local directory, placing the installation command in that local directory, enabling execution from there, and not the CD.

  SAPinst does not install its own executable files on the local host. If you wish to do so, to avoid the need to use the CD for future use of SAPinst, use the clause "-extract" when running SAPinst, as explained below. Although performance may improve if you run SAPinst from the local host, it is recommended to run it as explained in the first bullet.

Procedure

1. Log on to your host as a user who is a member of the local administration group.

2. Create an installation directory for SAPinst, for example: C:\SAPinst.

3. Insert the portal Installation CD in your CD drive.

4. Open the command line in the installation directory, and run the command:

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

   The Welcome screen appears, and the installation begins.

   > If the directory does not contain any files from a previous installation, a new installation is started. Otherwise, the previous installation is continued.

   > With this command, SAPinst is started from the CD, and it only extracts files specific to the <component> installation to the installation directory. If you want the SAPinst executable file to be copied to your local file system, use the following command instead:

   `<CD drive>:\SAPinst\NT\<OS>\sapinst.exe -extract`

   > If you get an error message about the ports being used, see SAPinst Ports [Page 35].

5. Follow the instructions on your screen. The input parameters and the values required are listed in the section Input Parameters for Installing Additional SAP J2EE [Page 24].

6. After you have entered all input parameters, **SAPinst** starts the installation and displays installation progress during the processing phase. If the installation was successful, the message `The installation finished successfully.` is displayed.

   > If problems occur, see Troubleshooting the SAPinst Installation [Page 40].

Input Parameters for Installing Additional SAP J2EE

The following table shows the window names that appear during the installation procedure of the Additional SAP J2EE Engine for a Clustered Portal Platform 6.0, and the prompts that are required for a successful installation:

Window Name	Prompt
CD Browser	A CD Browser may ask for the file LABEL.ASC containing the required label. The default path is: **SAPinst CD root folder** For more information on the CD Browser dialog, see Handling the CD Browser Dialog [Page 41].
Welcome	The screen is displayed and then the License screen appears. Read the license terms and, if you accept the terms, click *I Agree* to continue.
Enterprise Portal 6.0 Installation Options	From the *Install or Upgrade?* menu, choose **New Installation**. From the *Choose an Installation Option* menu, choose ***Additional SAP J2EE System for a Portal Cluster***.

Window Name	Prompt
Additional SAP J2EE Engine screen	In this screen, you do the following: • Provide values for installing and configuring the new SAP J2EE instance. • Provide values for connecting to the initial portal installation. **Parameters for Installing the New SAP J2EE Engine:** *Instance Number* – Enter a two-digit number (00-99) to indicate the instance on which the clustered portal will be deployed. This number does not relate to the instance number you chose for the initial portal, nor does it affect the portal URL. **Windows only:** *System Drive* - Indicate the system drive on which you want to install. *Maximum Heap Size for Java Virtual Machine* – Set the memory to be used for JVM. It is recommended that you set this value to half of the installed physical memory of the machine, but not less than 512 MBytes and not more than 1536 Mbytes. Make sure not to enter a value larger than the maximum Java heap size of your platform (see the corresponding documentation of your Java Development Kit). **Connecting to Existing SAP J2EE Engine of the Initial Portal Platform Installation:** **UNIX only:** At this point it is recommended to mount the directory "/usr/sap/*<SYSTEM_NAME>*/global" of the SAP J2EE Engine on the initial portal machine. *System Name* – System name of J2EE Engine on the initial installation machine. *Host Name* – Name of the machine on which the initial portal installation resides. *Instance Number* – Enter the instance number of the SAP J2EE Engine on which you deployed the initial portal platform. *User on Remote Host* – Provide the user name of a user with access to the j2ee folder on the initial portal machine (may be the user j2eeadm with whom the initial portal was installed). *Password* – Provide the password of the above user. *Confirm* – Enter the password again for confirmation.

Window Name	Prompt
Windows Startup User **Windows only**	To ensure that full permissions to the portal file system are granted only to specific users, SAPinst automatically creates an admin group, named SAP_<J2EE_System Name>_LocalAdmin. In this screen, specify the user to be included in this group. This user will have permission to the portal installation file system and will be able to start and stop the SAP J2EE Engine. Choose the user who is currently installing the portal (*Current*), or specify another existing user (*Other*). If you choose *Other*, enter the user name and password of a user with administrator privileges. SAPinst includes the user in the admin group SAP_<J2EE_System Name>_LocalAdmin. Make sure to include the user you select in this screen in the global admin group. For more information, see Preparing for Security - Windows Only [Page 15].

Group Information
 	
Unix only
	The portal installation uses the system user *j2eeadm*, from the group *sapsys,* to perform the installation. If this user does not exist, this screen appears.
	
	In this screen you are creating the group *sapsys* in the UNIX operating system. It is recommended to ask the system administrator for best values for the parameters below.
	
	   o Description – Enter a description for the *sapsys* group.
	
	   o Group ID – Enter an ID for the group *sapsys*.

User Information
 	
Unix only
	This screen appears only if the Group Information screen appeared.
	
	In this screen, you are creating the user *j2eeadm* in the UNIX operating system. It is recommended to ask the system administrator for best values for the parameters below.
	
	   o User ID – Enter an ID for the user *j2eeadm*.
	
	   o Home directory – Enter the name for a home directory for the user *j2eeadm*. The default value is `/home/j2eeadm`.
	
	   o Password – Enter a password for the user *j2eeadm*.
	
	   o Confirm – reenter the password you entered above to confirm it.

The Group Information and User Information screen appear for a second time, with the values you entered already. Click Next to continue, or change your choices now. The later values are the ones used for the installation.

Post Installation

After running SAPinst, the following post-installation procedures are required.

The post-installation process entails the following:

- **Unix** Only - Mount Global Folder on Initial Installation [Page 27]
- Start SAP J2EE Engine [Page 28]
- Initial Logon [Page 29]
- Installation Check [Page 30]
- Licensing the Clustered Enterprise Portal [Page 30]

If you have installed Content Management, you also need to:

- Activate the Cluster Installation [Page 31]
- Assign Tasks to CM Instances [Page 32]

Mount Global Portal Directory – Unix Only

Use

The procedure of mounting the global directory is performed on each of the clustered machines.

Procedure

To mount the global directory on Solaris:

1. Launch the following file. The path of the mount point on the local (clustered) machine must be identical to that of the shared directory on the initial portal (remote) machine:

```
mount <initial_portal host name>:/usr/sap/<system_name>/global
/usr/sap/<system_name>/global
```

Note that there is a single space between the remote path and that of the local mount point.

The mount must be performed before attempting to launch the portal from clustered machines for the first time

It is recommended to perform the mount before installation, but at this point it is imperative.

To mount the global directory on HP:

- Use the SAM application to mount the file system:

   `/usr/sap/<system_name>/global`

Start the SAP J2EE Engine

After successfully completing the installation of the additional clustered portal, the new SAP J2EE Engine must be started. When starting, the new SAP J2EE Engine then connects to the initial portal installation and synchronizes additional applications and libraries to the clustered location.

To start the SAP J2EE engine on UNIX:

1. Make sure that the initial portal installation is up and running.

2. Open a new terminal window with the user *j2eeadm*.

3. Go to the following directory:

   `/usr/sap/<SAP J2EE instance name>/j2ee/j2ee_<instance number>/cluster/dispatcher`

4. In the shell, run the following command:

   `./go`

   > This command starts the dispatcher and launches the SAP J2EE server. The synchronization process, which starts upon starting the server, is time consuming.

5. To verify that portal applications and libraries have been synchronized, check the current output log file in:

   /usr/sap/<system_name>/j2ee/j2ee##/cluster/server/managers/console_logs

   Look for the line "Synchronization of all applications completed!".

   In the event that errors appear, see <u>Log File Indicates Errors [Page 44]</u>.

To start the SAP J2EE engine on Windows:

1. Make sure that the initial portal installation is up and running.

2. Go to the following directory:

   <portal installation drive>`:\usr\sap\`*<SAP J2EE instance name>*`\j2ee\j2ee_`*<instance number>*`\cluster\dispatcher`

3. Double-click to run the following file:

   `go.bat`

   > This command starts the dispatcher and launches the SAP J2EE server. The synchronization process, which starts upon starting the server, is time consuming.

4. To verify that portal applications and libraries have been synchronized, check the current output log file in:

   <portal installation drive>:\usr\sap\<system_name>\j2ee\j2ee##\cluster\server\managers\console_logs

   Look for the line "Synchronization of all applications completed!".

   In the event that errors appear, see Log File Indicates Errors [Page 44].

Initial Logon

After starting the SAP J2EE Engine, you are ready to log on for the first time.

User names and passwords are registered in a directory server or a user list. Initially, there is no directory server or user list associated with the portal. To make the connection, you have to create a user management configuration. Until you establish a connection with a user list, you log on to the portal using the default user credentials.

The default user logon provides you with access to the portal as a fully qualified administrator (super user).

If you have already created a user management configuration after installing the initial portal, you do not have to create an additional one. You can now log on using the credentials of a user with administrative role.

To log on to the portal with default credentials:

1. Open your Web browser.

2. Type the portal URL in the Internet browser address field, and press ENTER.

3. In the Enter Network Password screen, enter the following:

   o User Name: **sap***

   o Password: **06071992**

   If a user management configuration is already created, enter the username and password of a user with administrator role.

   If logon fails, try restarting the SAP J2EE Engine. See Synchronizing the Application [Page 44].

Installation Check

Verifying Local Installation

Successfully logging on to the portal indicates that the installation of the additional clustered portal succeeded.

Verifying Cluster Functionality

1. Verify that the user management configuration on the local machine is identical to that of the initial installation.

2. All J2EE Engine instances of the cluster must be up and running. Open the SAP J2EE Engine Administrator, using the following command:

   /usr/sap/<SYSTEM_NAME>/j2ee/j2ee_<instance_number>/admin/go

   > At initial logon to the SAP J2EE Engine Administrator, the password is empty by default.
   >
   > In the Port field, you must enter the P4 port.

Check that all the J2EE instances existing in the cluster appear in the left panel of the SAP J2EE Administrator console.

There must be two nodes for each portal installation: one dispatcher and one server.

Licensing the Clustered Enterprise Portal

Following are the rules for licensing a portal cluster,

- A temporary license is automatically installed upon installation of the initial portal.

- When installing the license on the initial portal, SAP recommends that you do not call up the License Key iView via the load balancer (if installed). Instead, call it up directly from the machine on which you want the key to be installed.

  o Only on the portal which contains the HWKey of the license are you able to see if the license is working correctly after you installed it. The license key is also displayed on the other portals, but only on the portal with the correct hardware key will it be displayed as "valid". All the others will display "invalid". In the running portal, go to *System Administration > System Configuration > Portal Licensing* to check for validity.

- The license automatically covers all the machines in the clusters. When adding clustered portals, no action needs to be taken.

  o Only if you want to create failover scenarios, you have to install additional permanent licenses. See information below.

- If you change the license (expired, etc), the machines are automatically updated through the database, where the license keys are installed.

- The license is cached for one hour, so it is possible to stop and restart the portal server on which the license was installed, but it should not be stopped for longer periods of time. For high availability of the portal, SAP recommends that you install a license on several portal servers.

Avoiding License Failover

If your cluster has 6 servers (**A**,**B**,**C**,**D**,**E**,**F**) and you only have one license key installed, for server A for example, then you don't have a failover scenario because if server **A** becomes unavailable for more than 60 minutes, the whole cluster will be unlicensed.

If you want to create a failover scenario you can install more licenses, for example for servers **A**,**D** and **F**. So if server **A** is unavailable for more than 60 minutes, the cluster stays licensed because **D** and **F** also have a valid license, and this is communicated to all other portals through the common database.

> It doesn't matter which portal in the cluster is used to install one or more permanent licenses since they are all connected to the same database.

Post-Installation Steps for Content Management

Purpose

If you have installed Content Management (CM), you must prepare it for operation in a cluster.

Process Flow

To enable CM to function properly in a cluster, it is necessary to:

- Activate the CM cluster with a flag
- Assign the tasks of CM services to cluster nodes

Activating the Cluster Installation

Use

If the Content Management component is included in the portal cluster installation, you need to set a flag to activate it.

Prerequisite

CM is installed on each portal server in the cluster.

Procedure

1. In the top-level navigation bar of the portal, access the CM configuration settings with *System Administration* → *System Configuration* → *Knowledge Management* → *Configuration.*

2. Choose *Content Management* → *Global Services* → *System Landscape Service.*

3. On the right, under *View 'landscape'*, click *Edit*. Select *Cluster Installation* and save your entry with OK.

4. Restart SAP J2EE Engine on **all the nodes in the cluster**.

   Content Management is now set for operation in a load-balanced cluster.

5. Check whether all the CM systems in the cluster appear in the configuration.

   Choose *Configuration → Content Management → Global Services → System Landscape Definitions → Systems → Content Management System.*

   Make sure that all the CM systems in the cluster are listed.

Assigning Tasks to Cluster Nodes

Use

Content Management (CM) services, like index management or content exchange, regularly generate tasks. In a cluster, you must assign these tasks to a specific CM instance.

Procedure

1. In the portal, access the Knowledge Management configuration settings with *System Administration → System Configuration → Knowledge Management → Configuration.*

2. Choose *Content Management → Global Services → Scheduler Tasks.*

   A list of scheduler classes is displayed.

3. Select the appropriate CM system for each task under the following classes:

   o *Check Valid From*

   o *Check Valid Until*

   o *CM Repository GC*

   o *Content Exchange Task Queue Reader*

   o *Index Management Task Queue Reader*

   o *Polling Scheduler Task*

   o *Report Scheduler Task*

   o *WebRepository GC*

   After the installation the following tasks are visible, but not yet active. If you configure these tasks at a later point in time, do not forget to assign them to a CM system:

   o *CPETTasksimple*

   o *WFTaskActivity*

   o *WFTTaskDeadline*

To assign a task to a system:

   a. Click the task you want to edit. In the next screen, use the checkbox to select the task again and choose *Edit*.

   b. Under System ID, select the system where the task is to run and save the entry.

⚠️

If, after the installation, you plan to set up a file system repository, make sure that it is set to read only. The file system repository does not support simultaneous editing of files by multiple servers. For more information, see the *SAP Enterprise Portal Administration Guide* at `http://help.sap.com/ep`. Choose *Administration Guide → Knowledge Management Platform.*

Adding CM and Collaboration to an Existing Cluster

Purpose

This section explains how you proceed if the portal is already set up in a cluster and you want to add Content Management (CM) and Collaboration for SAP Enterprise Portal at a later point in time.

⚠️

The additional steps described here are not necessary if you have already installed CM and Collaboration together with the portal in a cluster. Only follow the instructions here, if the portal is already set up and running on a cluster, but Content Management and Collaboration are still missing.

Prerequisites

The portal platform is already installed and running on **all the nodes** of the cluster.

Process Flow

Proceed as follows:

Action
Stop SAP J2EE Engine on all the nodes except the **initial node**. The initial node is where you originally installed the portal before it was replicated to other cluster nodes by SAP J2EE Engine.
Install CM and Collaboration on the initial node where SAP J2EE Engine is still running. To do this, follow the instructions in the documentation *Installing the Portal Platform and Content Management* in the *SAP Enterprise Portal Installation Guide*. This guide is located at `http://service.sap.com/ep60` → *Documentation & More → Installation*
Copy CM property files from the initial CM installation to all the other cluster nodes. For more information, see Copying CM Property Files [Page 34].
Restart SAP J2EE Engine on all the cluster nodes. During the restart SAP J2EE Engine synchronizes all the cluster nodes and automatically sets up CM and Collaboration on all the nodes.
Perform the post-installation tasks required for a CM cluster installation. For more information, see Post-Installation Steps for Content Management [Page 31].

Copying Content Management Property Files

Use

To set up the configuration of Content Management (CM) correctly on all nodes, you need to copy a folder from the primary CM installation to all the other nodes.

This task is only necessary if you are adding CM to an already existing portal cluster.

Prerequisites

You have installed CM on the initial node of the cluster. The SAP J2EE Engine **has not yet been restarted** to synchronize the installation on all nodes.

Procedure

1. On the initial node where you have installed CM, switch to the appropriate directory for your operating system:

   Unix

   ```
   /usr/sap/<SAP J2EE instance
   name>/j2ee/<j2ee_instance>/cluster/server/
   services/servlet_jsp/work/jspTemp/irj/root/WEB-INF/portal/system
   ```

   Windows

   ```
   \usr\sap\<SAP J2EE instance
   name>\j2ee\<j2ee_instance>\cluster\server\
   services\servlet_jsp\work\jspTemp\irj\root\WEB-INF\portal\system
   ```

2. Copy the subfolder `cm` that contains the files `cfw.properties` and `cm.properties` to the same location on all the other cluster nodes.

Controlling a SAPinst Installation from a Remote Machine

Use

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

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

The overall process is as follows:

1. Install SAPinst on your remote host and SAPinst GUI on your local host.

2. Start the SAPinst server on your remote host.

3. Start SAPinst GUI on your local host.

4. Perform the installation using SAPinst GUI.

For details see the appropriate procedures below.

Prerequisites

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

  For more information, see "Preparations [Page 17]" in this documentation.

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

  To test this:

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

  o Log on to the local host and enter the command `ping <remote host>.`

- SAPinst ports – Make sure that SAPinst ports are free. Otherwise, define other ports and use the commands accordingly. See SAPinst Ports [Page 35].

Procedures

Perform the following procedures:

1. Starting SAPinst on the Remote Host [Page 36]
2. Starting SAPinst GUI on the Local Host [Page 37]

SAPinst Ports

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

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

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

UNIX:

From the installation directory, call the command from the installation CD as follows:

`<sap installation CD>/sapinst/unix/<os>/<command>`

Where <command is one of the following:

- SAPinst: `./sapinst SAPINST_DIALOG_PORT=<free_port_number>`

- SAPinst GUI: `./sapinstgui.sh -port <free_port_number>`

- Start SAPinst GUI `./startinstgui.sh -port <free_port_number>`

Windows:

From the installation directory, call the command from the installation CD as follows:

`<sap installation CD>:\sapinst\NT\i386\<command>`

Where <command is one of the following:

- SAPinst: `sapinst SAPINST_DIALOG_PORT=<free_port_number>`

- SAPinst GUI: `sapinstgui.bat -port <free_port_number>`

- Start SAPinst GUI `startinstgui.bat -port <free_port_number>`

Starting SAPinst on the Remote Host

Use

You use this procedure to run SAPinst on the **remote** host when you want to control it from a machine other than the installation machine.

Procedure

Your Remote Host Runs on a Windows Platform

1. Log on to your remote host as a user who is a member of the local administration group.

2. Insert the installation CD in your CD drive.

3. Create `<SAPinst_INSTDIR>` and change to this directory.

4. Enter the following command from the Windows command prompt:

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

   SAPinst starts without the SAPinst GUI and waits for the connection to the SAPinst GUI.

5. Start the SAPinst GUI on your local host, as described in .

Your Remote Host Runs on a UNIX Platform

1. Log on to your remote host as user `root`.

2. Mount the installation CD.

3. Create `<SAPinst_INSTDIR>` and change to this directory.

4. Enter:

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

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

   `guiengine: waiting for connect...`

5. Start the SAPinst GUI on your local host, as described in .

Starting SAPinst GUI on the Local Host

Use

You use this procedure to run SAPinst GUI on the **local** host when you want to control the SAPinst installation from a machine other than the installation machine. The local host is the host where you want to control the installation with the SAPinst GUI.

Procedure

Your Local Host Runs on a Windows Platform

1. Log on to your local Windows host.

2. Insert the installation CD into your CD drive.

3. Enter the following command from the Windows command prompt:

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

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

   If prompted, enter the following parameters:

   - *Hostname* : Enter the host name of the remote computer.

   - *Port:* Enter the same port number as SAPinst uses on the remote host.

4. Perform the installation from your local host.

Your Local Host Runs on a UNIX Platform

1. Log on to your local UNIX host as user `root.`

2. Mount your installation CD.

3. Change to the following directory:

   `<Installation CD>/SAPINST/UNIX/<OS>`

4. Enter:

   `startInstGui.sh`

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

   If prompted, enter the following parameters:

   - *Hostname*: Enter the host name of the remote computer.

   - *Port:* Enter the same port number as SAPinst uses on the remote host.

5. Perform the installation from your local host.

Troubleshooting

Purpose

If you run into trouble while installing, launching, or using the portal, try the troubleshooting actions listed in this section. If the problem is still not solved, contact your local support center/software supplier.

Process Flow

- Problems during installation process: Try the troubleshooting procedures. See Troubleshooting the SAPinst Installation [Page 40].

- Problems when starting the SAP J2EE Engine: See Log File Indicates Errors [Page 44].

- Problems when logging on to the portal: Stop the SAP J2EE Engine and then start it again. See Synchronizing the Application [Page 44].

- Problems with the user managements component: changes made in one of the cluster machines do not appear in another machine in the cluster. See User Management Settings Not Updated in the Cluster [Page 44].

Portal system Information - Local Clustered Portal

This section provides information that may be required for further use or for maintenance purposes. The topics covered in this section are:

- Path to portal file system

- Portal file system user permissions

- Calculating the SAP J2EE Engine's P4 Port Number

Path to Portal File System

UNIX Installation

The portal installation creates the following path on your machine:

/usr/sap/<SAP J2EE instance name>/j2ee/j2ee_<instance number>/...

Windows Installation

The portal installation creates the following path on your machine:

<Installation drive>\usr\sap\<SAP J2EE instance name>\j2ee\j2ee_<instance number>\...

File System User Permissions

UNIX Installation

The portal installation creates a SAP J2EE user with the following credentials:

- o   User Name   *j2eeadm*
- o   Password   *j2eeadm*

If the user *j2eeadm* already exists, the portal uses it for the installation.

Windows Installation

During installation, full control permissions to the portal file system are granted to a group created by SAPinst and to the local admin groups. The groups are:

- o   *SAP_<instance name>_LocalAdmin*
- o   Local *Administrators* group
- o   Local *System* group

During installation, you are required to specify a user to be associated with this group. The user you indicate can be either the one who installs the portal or a user that you specify during installation.

To facilitate clustered portal management on the domain level, it is strongly recommended that:

- ■   The user with permissions to the portal file system is a domain user.
- ■   You include this user in a global admin group.
- ■   You include the global admin group in the local admin group, to which permissions are granted.

Calculating the SAP J2EE Engine's P4 Port Number

The P4 port number is used to connect to the SAP J2EE Engine with the SAP J2EE Engine Administrator. The P4 port number is based on the number of the SAP J2EE instance on which you have installed the portal, according to the following formula:

P4 Port = 50,000 + (100*<instance number>) + 4

If the SAP J2EE is installed with instance number 01,

P4 Port = 50,000 + (100 * 1) + 4 = **50104**

Troubleshooting the SAPinst Installation

Use

If the SAPinst installation is interrupted, try the following procedures.

Procedure

1. If an error occurs during the **dialog phase**, SAPinst:

   o stops the installation

   o displays a dialog that informs you about the error

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

   ▪ *If the problem has to do with the system (for example: "Unable to create pipe, bad file number", ask the UNIX system administrator to try to solve the problem by changing relevant Kernel settings.*

   Finally, you must abort the installation with *OK,* and try to solve the problem.

2. If an error occurs during the **processing phase**, SAPinst:

   o stops the installation

   o displays a dialog that informs you about the error

   You can now:

   o directly view the log file by choosing *View Logs.*

   ▪ *If the problem has to do with the system (for example: "Unable to create pipe, bad file number", ask the UNIX system administrator to try to solve the problem by changing relevant Kernel settings.*

   o try to solve the problem (see SAPinst Troubleshooting Guide at: http://service.sap.com/sapinstfeedback).

   o continue the installation by choosing *Retry.*

   o abort the installation by choosing *OK.*

3. After solving the problem, see: .

4. If you have stopped in the synchronization step, see .

Handling the CD Browser Dialog

The following tells you how to handle the CD Browser dialog.

SAPinst displays this window in following situations:

1. SAPinst wants to check the availability of the software package.

    You can recognize this situation by the flag *Check Location* displayed on the *CD Browser* Window.

    Choose one of the following actions:

Action	Result
You do not enter any *Package Location* and leave the flag *Check Location* deselected.	SAPinst skips the check and you can continue the installation procedure. However, SAPinst asks later for the missing LABEL.ASC (see step 2 below).
You enter the path of the Package Location and leave the flag *Check Location* deselected.	SAPinst skips checking the label location, but your entered package locations are used later for the installation. SAPinst only asks again for a missing LABEL.ASC if the package location is incorrect (see step 2 below).
You enter the path of the Package Location and select the flag *Check Package Location*	SAPinst checks the label location and displays an error message if the location is incorrect. If all locations are correct, SAPinst does not ask again for the LABEL.ASC files later.

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

    You can recognize this situation by the missing flag *Check Location* on the *CD Browser* window. You now have to enter the path to the correct LABEL.ASC. Otherwise, the installation cannot continue.

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

Continuing an Interrupted Installation

Use

As SAPinst does not abort the installation in error situations, you can continue an interrupted installation in the following situations:

- You have **not** canceled the installation
- You have **already** canceled the installation

Prerequisites

You solved the problem that caused the error situation.

Procedure

- You have **not** canceled the installation

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

  In the error dialog box, choose *Retry*.

  SAPinst now retries the installation step.

- You have **already** canceled the installation

  That is, the installation was aborted and now you want to continue it. Since SAPinst records the installation progress in the keydb.xml file, it can continue the installation from the failed step without repeating previous steps.

  You have two alternatives:

  - Continuing the installation
  - Restarting from the beginning, that is, starting the installation with the default keydb.xml file as delivered

  These two alternatives are described below.

  In some cases, you must uninstall already installed components, before repeating the installation from the beginning. For example, this applies to an SAP system installation. For more information, see the uninstallation description in the corresponding installation guide.

How to Proceed on UNIX

Continuing the Installation

1. Make sure that there are no java processes running SAPinst Gui. To obtain a list of java processes, enter the following command:

   `ps -ef | grep java`

   You can identify running SAPinst GUI java processes in the command line substring "...java -cp JAR/instgui.jar..." of the output.

2. Make sure that all environment variables are set as described in the corresponding installation documentation.

3. Start SAPinst from your `<SAPinst_INSTDIR>` with:

   `./sapinst`

Restarting from the Beginning

You have the following alternatives

- Restart the installation from installation CD

  Start SAPinst from CD again as described in the corresponding installation documentation.

  SAPinst deletes all files in your installation directory and asks you if you want to overwrite any existing installation directory.

- To reset the installation and start from the beginning, prepare the new installation manually (installation CD is not needed).

  from your `<SAPinst_INSTDIR>,` run the following command:

  /**`newinstall`**

  The old log files will be saved in the subdirectory:
  `<SAPinst_INSTDIR>/log_<timestamp>`

Log File Indicates Errors

Procedure

When starting SAP J2EE Engine for the first time, in the event that the output log file does not indicate the completion of synchronization, do the following:

- Check the output log for errors.

- Check if the initial portal directory (<initial_portal>../usr/sap/<*system_name*>/global) has been mounted correctly.

- Contact your local support center/software supplier with the output log file available for reference.

Synchronizing the Application

Procedure

If you cannot log on to the portal after first starting SAP J2EE Engine, maybe the synchronization failed. Try to reactivate it as explained below.

To synchronize the application:

1. Stop the SAP J2EE Engine. To do so, in the dispatcher console enter the command:
2. `shutdown`
3. For additional methods, see .

   Wait for the dispatcher to stop the server.

4. Start the dispatcher with:

   `./go`

User Management Settings Not Updated in the Cluster

Symptom

Changes to user management data are only applied to the cluster node where the changes were made.
Examples of changes to user management data are assigning a role to a user or group, changing a user's profile, and so on.

Cause

The User Management Engine (UME) on the cluster nodes is configured to use a local cache instead of a distributable cache. Therefore the changes are only applied to the cluster node where the changes were made.

Solution

Configure the UME to use the distributable cache.

To do so, set the property `ume.cache.default_cache` in the file *sapum.properties* to:

`ume.cache.default_cache=distributableCache.`

For more details on setting user management properties, see *Administration Guide → Portal Platform → System Administration → User Management Configuration → User Management Properties*.

Uninstalling the Portal Platform

What is Uninstalled

This section provides information on how to uninstall the Portal Platform application from a clustered portal machine. The initial portal and the portal content remain intact.

The initial portal is the hub for a portal cluster. When it is uninstalled, the rest the portals in the cluster are no longer functional. Therefore, it is important to first uninstall the portal from each clustered machine and then to uninstall it from the initial machine.

Prerequisites

Make sure that no users are engaged with the portal.

Procedure

To uninstall the clustered portal:

1. Shut down SAP J2EE Engine. See Stopping the SAP J2EE Engine [Page 46].

   Make sure all related processes disappeared.

2. Delete the portal directory:

   …/usr/sap/<SYSTEM_NAME>/

Stopping SAP J2EE Engine

Prerequisites

SAP J2EE Engine is not in use by any application.

Procedure

To stop the SAP J2EE engine use one of the following methods:

- Log on to the SAP J2EE Engine using the *SAP J2EE Engine Administrator*. Select the cluster node and, from the button toolbar, choose the *shutdown* symbol, to shutdown the whole engine (dispatcher and all local server nodes).

- From the dispatcher console on which you started the SAP J2EE Engine, stop the processes using the following command:

  ```
  shutdown
  ```

- Stop the SAP J2EE Engine using telnet, as follows:

  a. Logon via telnet using the following command:

  ```
  telnet <j2ee_host_name> <j2ee_telnet_port>
  ```

     The SAP J2EE Engine telnet port can be determined by the following formula:

  ```
  50000 + (100 * <j2ee_instance_number>) + 8
  ```

  b. When the SAP J2EE Engine Telnet welcome screen is displayed, logon with the J2EE Engine administrator account and type:

  ```
  shutdown 0
  ```

  ⚠️

  If the console is unknown, or if you cannot use the SAP J2EE Administrator, you can terminate all SAP J2EE Engine processes using the process numbers that belong to the user *j2eeadm*, running the following command for each of the processes. Keep in mind that this performs a hard kill of the SAP J2EE Engine processes and should be used in critical cases only:

  ```
  kill <process number>
  ```

  If the process is still active, use the command:

  ```
  kill -9 <process number>
  ```

Result

The SAP J2EE Engine is stopped.