Installation and Upgrade Manual

Contents

About Installation and Upgrade Manual

SAP J2EE Engine 6.20 is an independent software product developed entirely using Java technology. Supported platforms are the same as for SAP Web AS 6.20.

This document describes how to install, uninstall, and upgrade SAP J2EE Engine 6.20 on your machine, guiding you step by step through the whole procedure. There are many specific issues referring to the used software or the tasks performed by the J2EE Engine, and this document covers most of them. The installation can be performed using Graphical User Interface (GUI) or non-GUI (console text only) interface.

The installation program is XML-based, which enables you to create third-party visualizations or to integrate it into third-party installations. To do so, refer to the corresponding section in the Development Manual.

Target Audience

This document is created for your convenience so that only the appropriate sections are read, and the remainder skipped. The Installation Manual must be read carefully by system administrators and those responsible for the proper installation and functioning of SAP J2EE Engine 6.20.

Structure

It contains three major sections referring to the pre-installation tasks, installation process, and uninstall. The Development Manual describes the installation concepts and the XM files that can be used from third-party tools for successful installation and un-installation.

System Requirements

This section lists the system requirements and pre-installation tasks that must be met to run SAP J2EE Engine 6.20.

Installing on Windows NT/2000

The installation procedure section presents the basic ways of starting the installation. Both the GUI and non-GUI installation procedures are described step by step.

Uninstalling on Windows NT/2000

This section describes how to run the uninstall procedure on Windows NT/2000 and how to complete it successfully.

Installing on Unix/Linux Platforms

This part of the document describes the installation of SAP J2EE Engine 6.20 on Unix/Linux platforms.

Uninstalling on Unix/Linux Platforms

This section describes how to run the uninstall procedure on Unix/Linux platforms, and how to complete it successfully.

Installing on IBM OS/390 Platforms

This part of the document describes the installation of SAP J2EE Engine 6.20 on IBM OS/390 platforms.

Uninstalling on IBM OS/390 Platforms

This section describes how to run the uninstall procedure on IBM OS/390 platforms, and how to complete it successfully.

Installing on IBM OS/400 Platforms

This part of the document describes the installation of SAP J2EE Engine 6.20 on IBM OS/400 platforms.

Uninstalling on IBM OS/400 Platforms

This section describes how to run the uninstall procedure on IBM OS/400 platforms, and how to complete it successfully.

Upgrading SAP J2EE Engine 6.20

This section contains several steps, which you have to perform when upgrading SAP J2EE Engine 6.20.

Index

This is an index of the keywords used in the Installation Manual in alphabetical order.

Further Readings

Make sure you view the *readme.txt* file before proceeding with the documentation. For more information on SAP J2EE Engine 6.20 functions and configuration, refer to the Administration Manual.

Note: To install and run SAP J2EE Engine 6.20 as an NT Service or Unix Daemon, refer to the *Config Tool* section in the Administration Manual.

> **Note:** For information how to install and configure the 6.40 startup framework on SAP J2EE Engine 6.20, see the *Installing and Configuring the 6.40 Startup Framework to Use with SAP J2EE Engine 6.20* guide, attached to SAP Note 748713.

Documentation Conventions

The following font styles are used in SAP J2EE Engine 6.20 documentation to denote specific text expressions, and so on:

- *Italic style*
  Used for file and directory names, system paths, and so on. File and directory paths are given in Windows format (with backslashes separating directory names). For Unix/Linux versions, the directory paths are the same, except that slashes are used instead of backslashes to separate directories.
  Example:
  java.exe, ../cluster/dispatcher/managers/framework.properties, ...
- `Monospaced font`
  This font is used to denote java source code or contents of any other specific file.
  Example:
  ```
  Service_0_Name=cluster dispatcher
  Service_0_RootDir=C:\SAP J2EE Engine 6.20\cluster\dispatcher
  ```

Chapter 1

System Requirements

- Overview
- Pre-Installation Tasks

Overview

System requirements depend on many issues. This document presents the minimal hardware and software requirements that must be met to run the SAP J2EE Engine 6.20 installation procedure. For information about the system requirements, necessary to run the SAP J2EE Engine, see SAP Note 738921.

- Full configuration for "alone" type of Installation Setup
  - o Minimal hardware requirements – 256 MB of RAM, about 75 MB of free hard disk space
  - o Minimal software requirements– JDK 1.3.1, build 11
- Full configuration for "cluster" type of Installation Setup
  - o Minimal hardware requirements – 256 MB of RAM, about 83 MB of free hard disk space
  - o Minimal software requirements – JDK 1.3.1, build 11
- Graphic Tools Installation
  - o Hardware requirements – supporting graphical environment

Note: JDK 1.4 or higher is not supported for SAP J2EE Engine 6.20. See also SAP Note 746673.

Note: If you want to install the J2EE Engine in a cluster on several physical machines, make sure that:

- the time on the different machines is synchronized;
- the language locale settings are equal on all machines.

The different locale settings will result in severe database inconsistencies because when the deployed applications store information in the database, they expect one and the same locale settings on all cluster nodes.

Both time and locale differences lead to reduced supportability of the system, as the mapping between the events on the different machines is not obvious, and this will increase the resolution time for any problems that may occur.

These requirements may vary for different configurations of SAP J2EE Engine 6.20, the applications that are deployed and run on it, and so on. When all of the product's functions are used, more system resources are consumed, resulting in increased system requirements.

Another requirement is to have an IP configured on the workstation on which SAP J2EE Engine 6.20 is to run. The SAP J2EE Engine communication protocols use IP services to communicate, even if they are running on a single machine. It does not matter whether it is assigned dynamic or static address. For more information about how to obtain an IP address, contact your network administrator.

Incompatible Java VM

A new Java VM verification mechanism is introduced from SAP J2EE Engine 6.20 PL 21, which provides information about the current VM and compares it with a set of predefined supported operation systems and Java VM vendor, version, and type.

If during installation, upgrade, or cluster node startup, you receive a warning that your VM is not supported, this means that the VM version or the VM type do not match the predefined set and you will not be able to run SAP J2EE Engine 6.20. In this case, contact the Support team.

Note: Do not specify the *-server* option as the Java VM type. This type is not supported.

Pre-Installation Tasks

Before installing SAP J2EE Engine 6.20, the following pre-installation tasks must be performed for all types of platforms:

- Installing the Library of Tools
- Setting the JAVA_HOME variable
- Setting the PATH variable
- Setting the CLASSPATH

Installing the Library of Tools

Windows NT/2000 Platforms

First, Java™ Development Kit (JDK) must be installed on the workstation. It provides a Java™ Virtual Machine (JVM) and some tools for compiling and debugging applications based on the Java technology. Make sure the installed JDK version is 1.3.1, build 11 or higher but below 1.4.

Note: Two alternative internal thread models – "green" threads and "native" threads – have been supported since JDK 1.1.3. Java application code does not change from one model to the other. The thread model is an internal difference that can have an important impact on the behavior and performance of a Java application. The "green" thread model must be used to run SAP J2EE Engine 6.20. It is the default module used by JDK 1.3 and later. Do not change this setting when installing it.

The availability of Java Runtime Environment (JRE) only is not enough to run all capabilities of SAP J2EE Engine 6.20. JRE is the minimum standard Java Platform for running Java programs. It contains the Java Virtual Machine, Java core classes, and supporting files. It does not contain the *javac.exe* file that enables you to compile Java components that are not *class* files.

Unix/Linux Platforms

Installing the Library of Tools task on Unix/Linux platforms is similar to Windows NT/2000. For more information, refer to the section above.

IBM OS/390 Platforms

Installing the Library of Tools task on IBM OS/390 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

IBM OS/400 Platforms

Installing the Library of Tools task on IBM OS/400 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

Setting the JAVA_HOME Variable

Windows NT/2000 Platforms

This system variable is used by SAP J2EE Engine 6.20 to locate the Java Virtual Machine needed to run the engine and its tools. There is a dialog in the installation procedure called "Choose JVM", which prompts the user to specify the value of this variable. If JAVA_HOME is already set in the corresponding system environment, SAP J2EE Engine 6.20 uses this value at runtime. Therefore, the value specified at installation time is used only if there is not a previously set value for JAVA_HOME.

Note: If JAVA_HOME points to a JRE path, it can be used only for running compiled classes (for example, it cannot be used to compile and run JavaServer Pages). To be able to compile and run Java components that are not classes, the path to Java executables must be set. It must be done using the PATH variable.

Unix/Linux Platforms

Setting the JAVA_HOME variable task on Unix/Linux platforms is similar to Windows NT/2000. For more information, refer to the section above.

IBM OS/390 Platforms

Setting the JAVA_HOME variable task on IBM OS/390 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

IBM OS/400 Platforms

Setting the JAVA_HOME variable task on IBM OS/400 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

Setting the PATH Variable

The PATH variable is a list of directories where the system looks for commands when trying to execute them. If the location of the JDK is not added to your path, it must be specified every time it is used. To make use of the tools that JDK provides, the directory containing Java executables must be added to the PATH variable. This is essential for launching processes that need compilation (for example, JavaServer Pages that are not compiled classes, but *jsp* files). This is not an installation issue, so the user must define the proper value for this variable separately.

Windows NT/2000 Platforms

Setting the PATH variable can be done either using the global environment variable (on Windows NT platforms) or from the command window. Follow the instructions below to complete these tasks:

- Choose *Start→Settings→Control Panel*, doubleclick "System", and select the "Environment" tab. Add the value to your PATH variable – for example, *C:\<jdk_dir>\bin*, where *<jdk_dir>* is the directory containing your JDK. If

there is more than one value assigned to this variable, they are separated by semicolon.

- In the command window type:
  `$set path=c:\<jdk_dir>\bin; %path%`

Unix/Linux Platforms

It cannot be uniformly stated how to set the PATH variable on Unix/Linux platforms because of the peculiarities of each. Describing the process for each particular platform goes far beyond the scope of this document. Therefore, it is recommended that you consult the platforms documentation.

IBM OS/390 Platforms

Setting the PATH variable task on IBM OS/390 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

IBM OS/400 Platforms

Setting the PATH variable task on IBM OS/400 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

Setting the CLASSPATH Variable

To run a Java application, the Java™ Virtual Machine must be provided with the location of the classes to be loaded. This location is given as a value of the CLASSPATH variable.

Note: The instructions presented below apply to running the SAP J2EE Engine 6.20 installation only. If other Java programs are run, the CLASSPATH must be set for them explicitly.

Windows NT/2000 Platforms

You do not have to set the CLASSPATH variable when installing SAP J2EE Engine 6.20 on Windows platforms. The installation package contains a script file called *visual.bat* that starts the installation procedure and sets the proper class path whenever it is run. If this script is not used, the class path must be set manually:

- Choose *Start→Settings→Control Panel*, doubleclick "System", and select the "Environment" tab. Add a value to the CLASSPATH variable (for SAP J2EE Engine 6.20 "." is enough).
- Use the java command with the –classpath option
  `Java –classpath . <Name_of_the_file_to_run>`
  This command overwrites the environment CLASSPATH variable settings and therefore it must be used only when setting the classpaths explicitly.

Unix/Linux Platforms

The SAP J2EE Engine 6.20 installation on Unix/Linux platforms uses a script file called *visual.sh* to start the installation file. This script takes care of setting the CLASSPATH variable appropriately to install SAP J2EE Engine 6.20 each time it is run.

The *visual.sh* script does not run on every Unix/Linux platform (check the specific invocation of the shell interpreter of the concrete system). Setting the CLASSPATH has to be performed on the command line and it is recommended that you consult the system administrator. The directory in which the installation package is saved is treated as the root directory.

IBM OS/390 Platforms

Setting the CLASSPATH variable task on IBM OS/390 platforms is similar to Windows NT/2000. For more information, refer to the corresponding section.

IBM OS/400 Platforms

Setting the CLASSPATH variable task on IBM OS/400 platforms is similar to the Windows NT/2000 one. For more information, refer to the corresponding section.

Chapter 2

Installing on Windows NT/2000

- Installation Procedure
- GUI-Based Installation Procedure
- Non-GUI Installation Procedure

Installation Procedure

Overview

This part of the document presents the installation procedure on Windows platforms with the usage of GUI and non-GUI interfaces.

SAP J2EE Engine 6.20 provides two separate installations, for both types of J2EE Engine system configurations – Cluster and Stand-alone. This manual contains a step-by-step description of the Cluster system installation procedure, explained in the sections below. The Stand-alone type of installation is similar.

Running the installation and completing it successfully ensures that all files from the installation distribution are integrated with the machine file system. This is essential to be able to start SAP J2EE Engine 6.20 and make use of its functionality.

You do not have to uninstall previous versions of SAP J2EE Engine. Several versions may exist, or even different builds of the same version of this product, as long as they are installed in different destination directories.

How to Run the Installation

The installation procedures on Windows NT/2000 and Unix/Linux platforms consist of the same steps, regardless of which SAP J2EE Engine 6.20 operational system is installed. The installation procedure on Windows NT/2000 is described below.

There are different ways to run the installation procedure, depending on the installation tool.

GUI-Based Installation

There are two ways to run the SAP J2EE Engine 6.20 GUI-based installation on Windows NT/2000:

- Open a console window in the directory where the *visual.bat* file is located, type `visual` on the command line, and choose "Enter."
- Double-click the *visual.bat* file to start the GUI installation procedure.

The installation process begins and an installation wizard appears. To complete the installation, you must submit all necessary information correctly. This type of installation is described in detail in the *GUI-based Installation Procedure* section.

Non-GUI Installation

This type of SAP J2EE Engine 6.20 installation is similar to GUI-based.

There are two ways to run the non-GUI installation procedure:

- Open a console window in the directory where the *console.bat* file is located, type `console` on the command line, and choose "Enter."
- Double-click the *console.bat* file to start the non-GUI installation procedure.

This type of installation is described in the *Non-GUI Installation Procedure* section.

Third-Party Installation

Instead of using the provided with J2EE Engine installation interfaces (GUI and non-GUI based), you can also want to develop your own installation and/or install J2EE Engine as a part of a more global system. To do that, see the *Developing Third-Party Visualizations of SAP J2EE Engine Tools* chapter in Development Manual.

GUI-Based Installation Procedure

This section concerns the Cluster type of installation. The Stand-alone type differs slightly; therefore, the differences are pointed out as notes after the corresponding steps.

Step 1: Welcome Dialog Box

At this step, a welcome message appears. It recommends that all active programs be closed before proceeding with the next step. When ready, select the next arrow.
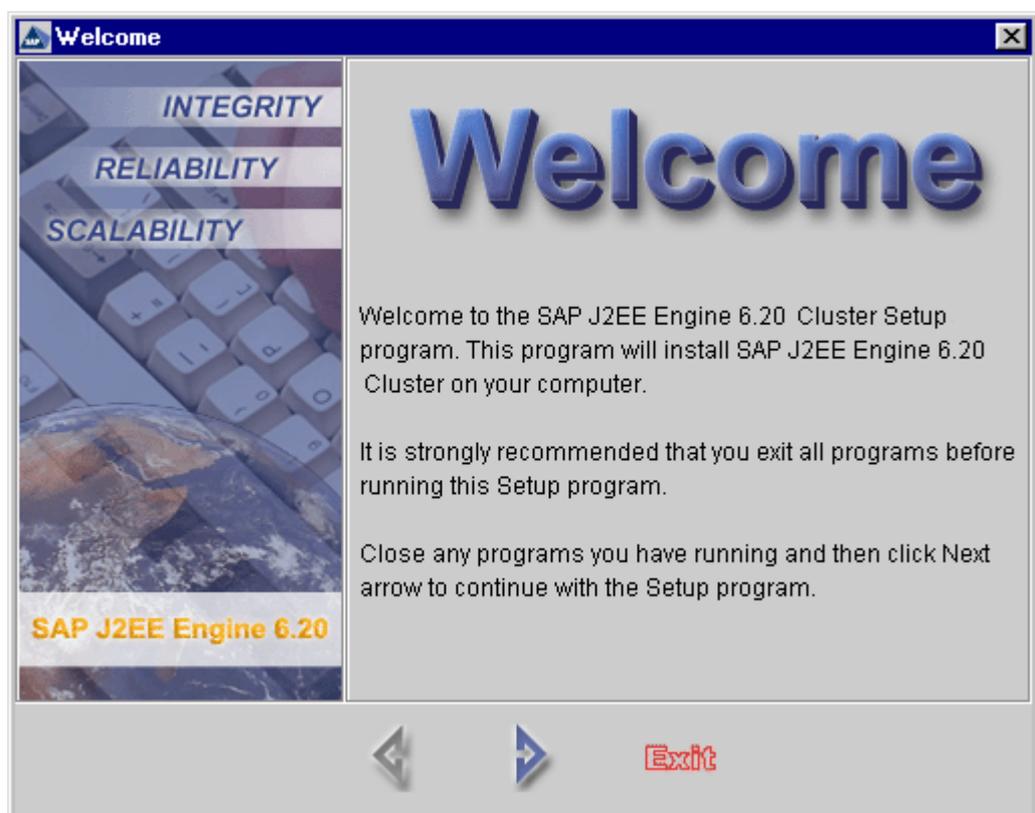
Welcome Dialog Box

Step 2: User Information

This step requires you to submit your personal information in the following fields:

- Name – type your name (optional)
- Company – type the name of the company you work for (optional)

User Information

Note: Some installations require the product serial number, and a "Serial Number" field may exist in this dialog box. You must enter the correct serial number for the corresponding release. The installation types considered do not require you to enter a serial number.

Step 3: Choose Destination Location

The destination directory of the installation is specified. There is an option to browse to select the desired folder. The default value is *C:\SAP_J2EEngine6.20.*

If the destination directory contains an older version of SAP J2EE Engine, the installation procedure will automatically upgrade it. For more information about upgrading your SAP J2EE Engine, see *Upgrading Steps* in this manual.

Note: You can upgrade only an older release of SAP J2EE Engine version 6.20. No upgrades of older versions are supported.

To install a new J2EE Engine, specify a new directory in the *Destination directory* field and proceed to step 4.
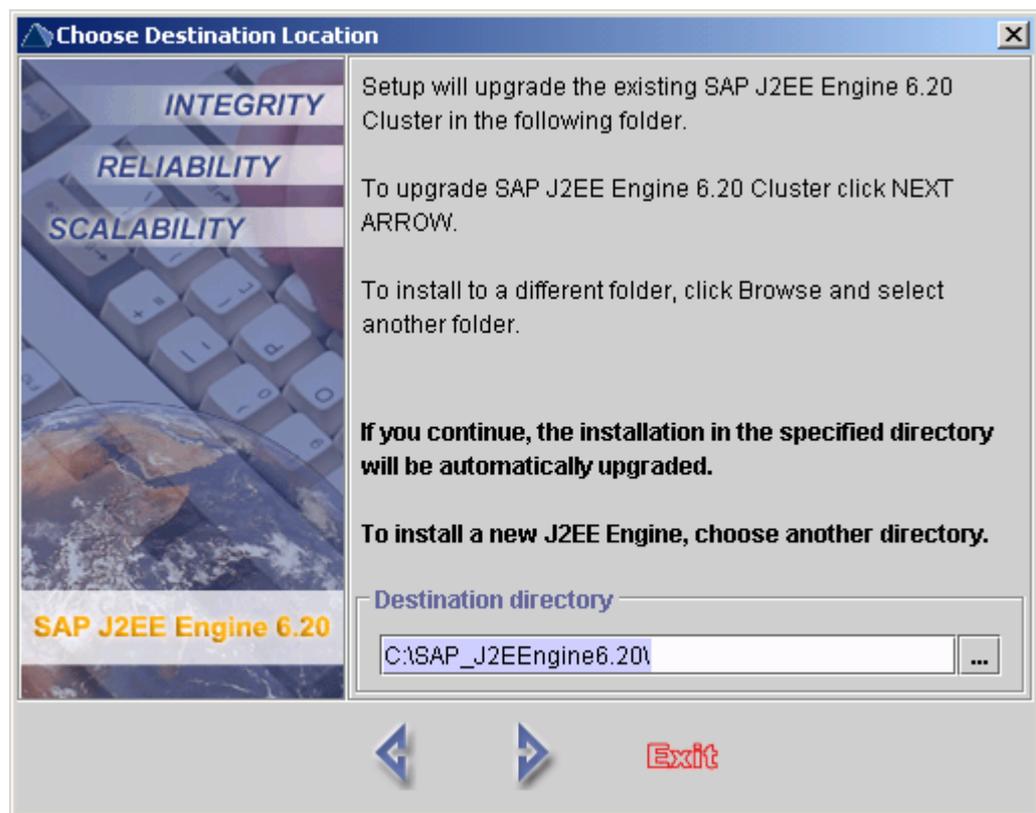
Choose Destination Location

Step 4: Choose Instance Type

At this step you can specify the type of the instance you want to install:

- Central Instance – contains the following components:
  - o one state controller – managing the state of the whole cluster
  - o one dispatcher node – dispatching the requests
  - o one application node – serving client requests
- Dialog Instance – contains the following components:
  - o one application node
  - o one dispatcher node
  - o also, you can create one backup state controller for taking the responsibility for the cluster in case of state controller failure.
    The backup state controller is created if you select the *Create Backup Controller* indicator.

To ensure the correct communication between the dialog instance and the state controller, you have to specify:

- o State Controller Host
- o State Controller Port
- o Backup State Controller Host (if a backup state controller is available in the cluster)

o   Backup State Controller Port (if a backup state controller is available in the cluster)

Note: If you install a dialog instance containing a backup state controller, make sure that you add the host and port of the backup state controller in the *ClusterHosts* property (on the Cluster Manager) of every cluster node installed before the installation of this dialog instance.

Note: If you install a dialog instance and you have not modified the default IDs of the cluster elements, the installation procedure on the dialog instance will create cluster nodes with the same IDs as in the central instance. Thus, the nodes in the dialog instance will not be able to start and to connect to the central instance.

Therefore, after completing the installation process, change the IDs of the dispatcher node and application node. To perform this, run the Config Tool and select the Cluster Manager for the corresponding node. On the right-hand side of the frame a table of properties is displayed. Select the *ClusterElementId* property and edit its value. Choose *File -> Apply*.

Step 5: Program Folder

This dialog box enables you to set a name for the program folder. By default, it is *SAP J2EE Engine 6.20.*
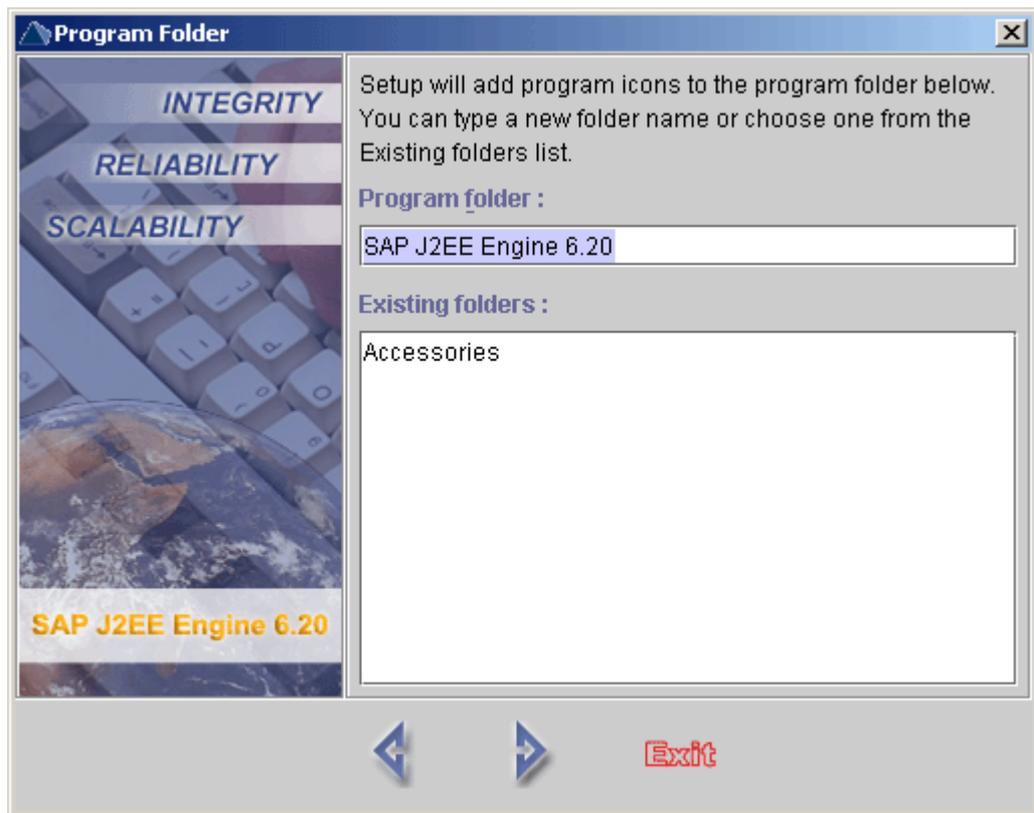
Program Folder Dialog Box

Step 6: Install Groups

This dialog box enables you to set installation components depending on the installation type – "alone" (for Stand-alone version of SAP J2EE Engine 6.20) or "cluster" (for Cluster version of SAP J2EE Engine 6.20). All components groups are available for installation by default.

You can select the components you want to install manually by setting the indicators to fit best your specific requirements. Only the set indicators are installed, and the required memory space changes dynamically according to your choices.

Cluster Install Groups

- admin – installs SAP J2EE Engine 6.20 Visual Administrator. This tool supports remote administration and can be installed on any machine in the Local Area Network (LAN).
- server – installs SAP J2EE Engine 6.20 application node and if specified a state controller or a backup state controller. When "Properties" button is selected, a dialog box appears that enables you to edit the properties of this component. To create a working cluster, you must include the dispatcher component group as well.
- dispatcher – enables the SAP J2EE Engine 6.20 system administrator to configure dispatcher nodes of a cluster system configuration. When "Properties" button is selected, a dialog box appears that enables you to edit the properties of this component. To create a working cluster, you must include the *server* component as well.
- deploying – installs visual Deploy Tool. This tool supports remote connection to the J2EE Engine and can be installed on any machine in the LAN.
- config tool – installs Config Tool. This tool must be installed on the same machine as SAP J2EE Engine 6.20. It cannot connect to the engine remotely.
- docs – installs SAP J2EE Engine 6.20 Documentation.
- tools – installs a client group that lets you deploy client application archives. SAP J2EE Engine 6.20 specific tools are also installed and some of them must be on the same machine as the SAP J2EE Engine 6.20.
- sda pool – installs SDA file for SDM registration.
- uninstall – installs the components needed to uninstall SAP J2EE Engine 6.20.

Note: For detailed information about SAP J2EE Engine 6.20 Tools, refer to the *Administration Tools* section of Administration Manual.

Note: For Stand-alone type of configuration, instead of "server" and "dispatcher" components, there is "alone." It installs the Stand-alone J2EE Engine type. When "Properties" is selected, a dialog box appears that enables you to edit the properties of this component.

Step 7: Choose Java Virtual Machine

This dialog box specifies Java Virtual Machine. This can be performed by browsing the directories of the local hard drives manually, or by choosing "Find", for automatic search. The "Maximum JAVA heap size" field specifies the maximum java heap size (in megabytes) for "dispatcher", "server", and "alone" configuration running. Its default value is 64. The JVM path must be set to the JDK directory on the local machine. Choose the correct path and select the right-hand arrow to continue, the left-hand arrow to go back one step, or "Exit" to quit the installation.

Note: For more information about specifying JVM, refer to the *Setting the JAVA_HOME Variable* section of this document.
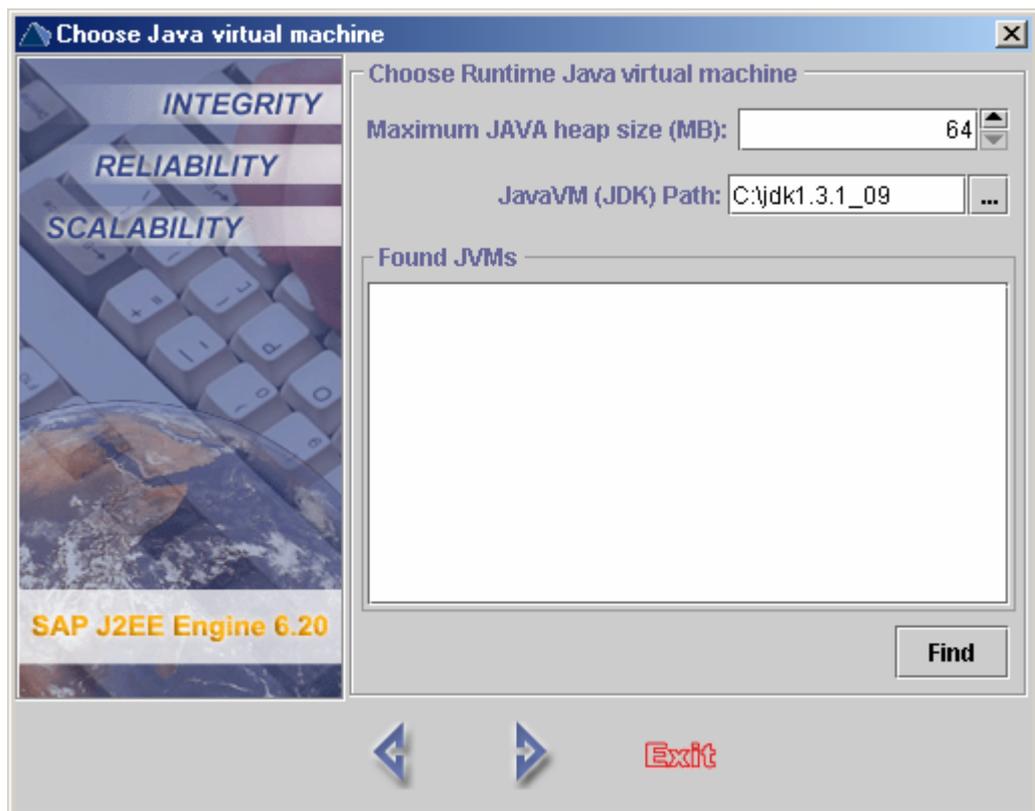
Choose Java Virtual Machine

Step 8: Total Info

This dialog box displays a summary of all information required to start the installation. "Export" exports this information as an external XML file, which may be used for batch file installation. The definition of this file (*BatchSetup.xml*) is described in the Development Manual.

The previous arrow button enables you to go back one step if the information submitted needs changing. "Exit" quits the installation program.

When the correct information has been submitted, choose "Start" to start extracting files.
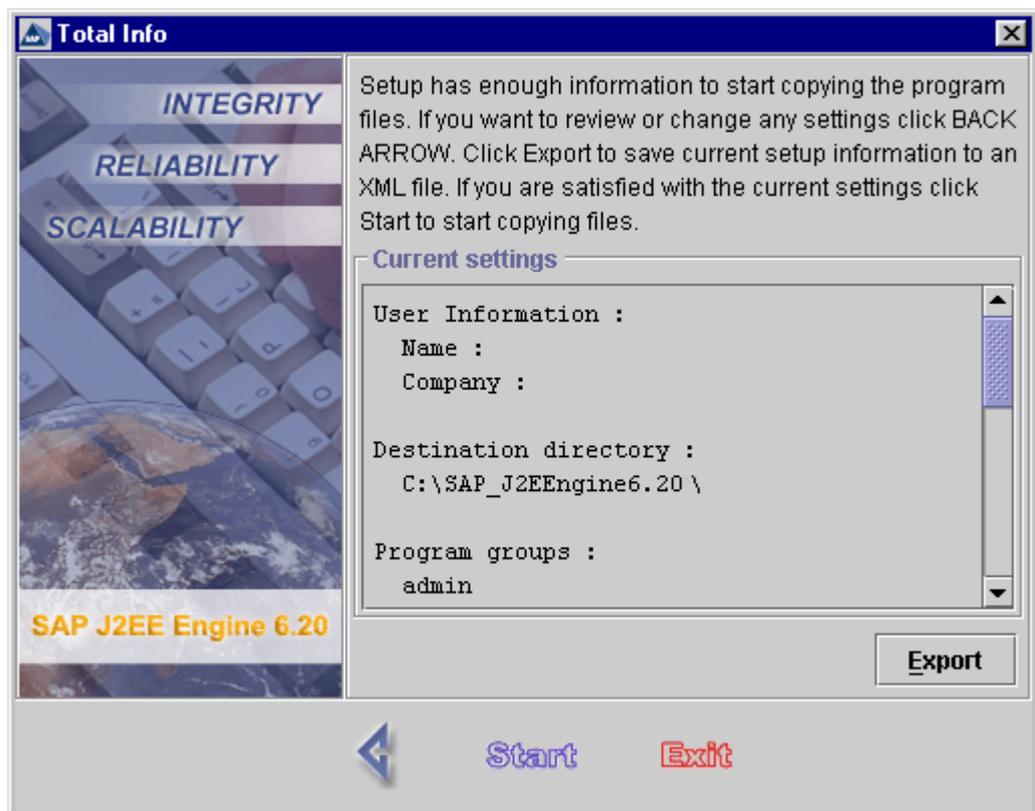
Installation Options Information Review

Step 9: Extracting Files

When the installation process begins, a progress bar appears. It shows information about the extracting procedure in percentage terms.
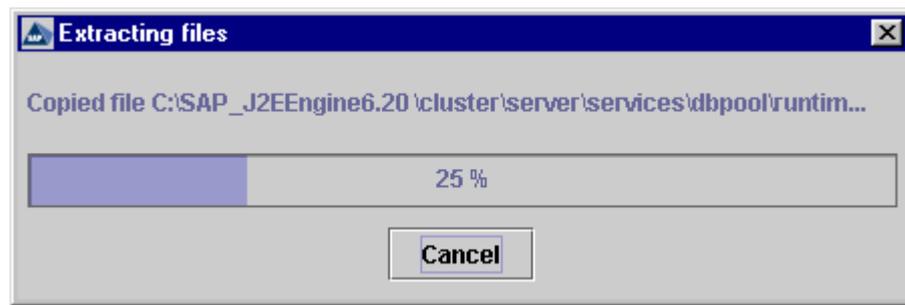
Extracting Files

Step 10: Setup Complete

This dialog box informs that the Setup has finished installing SAP J2EE Engine 6.20. Set the "Yes, I want to view the Readme File" indicator and choose "Exit" to read the *Readme* file. To run SAP J2EE Engine 6.20 Config Tool immediately after the installation, set the "Run Config Tool" indicator.

Note: For more information about configuring SAP J2EE Engine 6.20 using the Config Tool, refer to *Config Tool* section of Administration Manual.

We recommend that you choose to run the Config Tool if the installation host is overloaded. In this case the system might fail to start the SAP J2EE Engine services, which results in the following message: `Timeout starting core services`. This might also occur for the additional services. Therefore, use the Config Tool to set the following properties of Service Manager:

- *CoreLoadTimeout* – change the value of this property to 300
- *AdditionalLoadTimeout* – change the value of the property to 300 as well.

For more information about these properties, refer to Managers *Administration Reference → Service Manager* section in the Administration Manual.

In this step, the *Readme* file appears. Read it carefully and then choose "OK" to exit the installation.
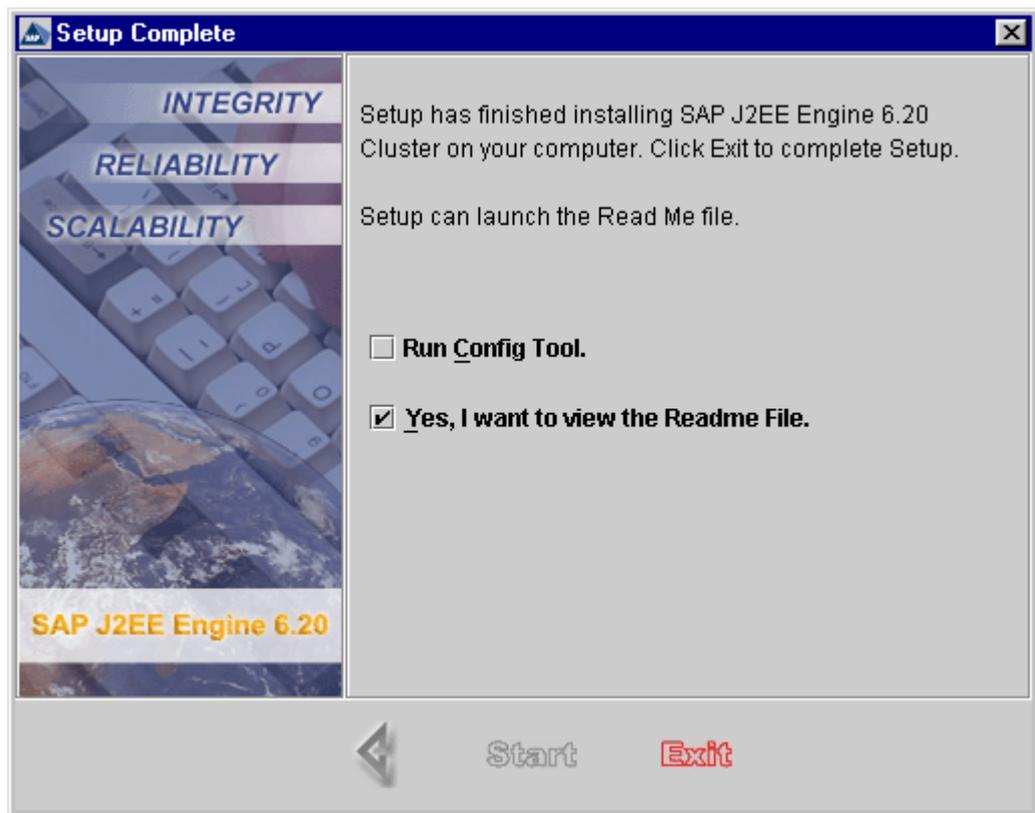
Installation Complete

Step 11: Readme File
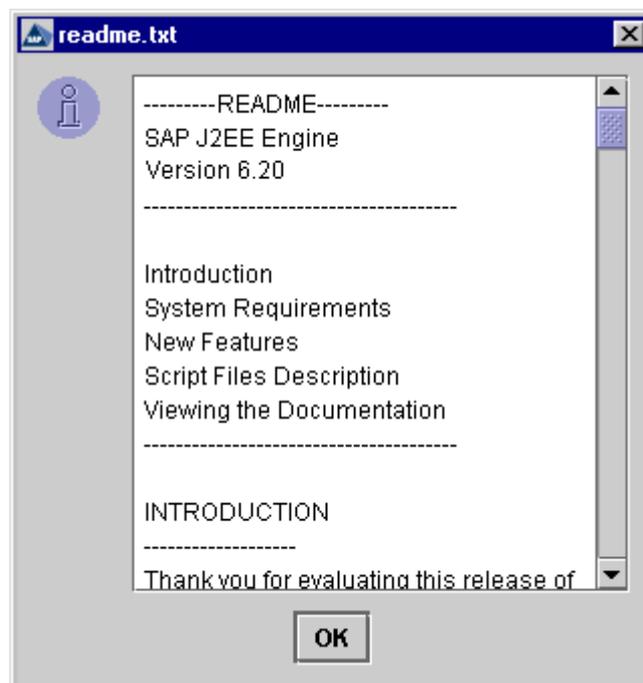
Readme File

After finishing the installation, an *install_log.xml* file is created in the engine destination directory. This file can be used from third-party tools. This XML file is described in the *Developing Third-Party Visualizations of SAP J2EE Engine Tools* section of Development Manual.

Non-GUI Installation Procedure

Step 1: The Welcome Message

The Welcome message recommends that all active programs be closed before continuing with the installation. Two commands are available at this stage:

- <1> – continues the Setup and proceeds with the next step
- <0> – exits the Setup program and terminates the installation process

Step 2: Current User Information

User name and company name must be entered at this step. To modify the current information properties, enter the corresponding number. When the username or company name values are not entered, they are displayed as "".

- <1> – confirms the current user data and continues the setup procedure
- <2> – takes the installation back one step
- <3> – allows you to modify the user name value
- <4> – allows you to modify the company name value
- <0> – exits the Setup program

Note: Some installations require the product's serial number, and this step may contain an option for entering the serial number. You must enter the correct serial number for the corresponding release. The installation types considered do not require you to enter a serial number.

Step 3: Choose Destination Directory

Setup installs SAP J2EE Engine 6.20 in the selected directory. The destination directory by default is: *C:\SAP_J2EEngine6.20.*

- <1> – confirms the destination directory and allows the Setup procedure to continue
- <2> – takes the installation back one step
- <3> – allows you to change the default destination directory. Type the desired destination directory and choose "Enter."
- <0> – exits the Setup program

If the chosen directory contains an older version of SAP J2EE Engine, the installation procedure will automatically upgrade it. Proceed to step 3.1.

To install a new J2EE Engine, specify a new destination directory and proceed to step 4.

Step 3.1: Choose Install Method

This step enables the system administrator whether to install the whole application sever or to upgrade an already existing older SAP J2EE Engine version.

- <1> – installs SAP J2EE Engine
- <2> – upgrades the already existing J2EE Engine older version
- <3> – takes the installation back one step
- <0> – exits the Setup program

Step 4: Choose Instance Type

At this step you can specify the type of the instance you want to install.

- <1> – installs a central instance
  This component contains:
  o   one state controller – managing the state of the whole cluster
  o   one dispatcher node – dispatching the requests
  o   one application node – serving client requests
- <2> – installs a dialog instance
  This component contains:
  o   one backup state controller (optional) – takes the responsibility for the cluster in case of state controller failure
  o   one application node
  o   one dispatcher node
- <3> – takes the installation back one step
- <0> – exits the Setup program

If you choose <2>, you have to specify:

- State controller connect host
- State controller connect port – the port value must be between *1024* and *65535*
- If you want to create a back-up state controller, choose <Y>
- Backup State Controller Host (if a back-up state controller is available)
- Backup State Controller Port (if a back-up state controller is available) - the port value must be between *1024* and *65535*.

Step 5: Choose Setup Type for Cluster Installation

There is an option in this step to choose from two types of installation – full and custom.

- <1> – installs full SAP J2EE Engine 6.20 Cluster type configuration
- <2> – allows custom setup installation
- <3> – takes the installation back one step
- <0> – exits the Setup program

Step 6: Cluster Settings

If <1> was the choice in Step 5, in this step you can view and edit the Cluster type SAP J2EE Engine 6.20 properties.

- <1> - allows the Setup to continue
- <2> - takes the installation back one step
- <3> - displays the application node properties
- <4> - displays the dispatcher properties
- <5> - allows each application node property to be entered and edited
  Three editing options are available. <Y> – lets you enter and edit the current Cluster property value; <N> – displays the next property without changing the current property settings; <D> – confirms the current settings and displays the "Cluster Settings" menu.
  The application node properties that can be edited are
  - JoinPort – default is 2078
  - MemoryElement – default is `false`
  - ClusterHosts – defaults are `localhost: 2077; localhost: 2062; localhost: 2063; localhost: 2064; localhost: 2065`
  - ClusterElementId – default is 4001
  - InfoLogFileName – default is `./managers/log/cluster/INFO.log`
  - ClusterName – default is `SAPJ2EEngine Cluster`
  - ClusterElementType – default is `ApplicationNode`
  - RepeatToConnect – default is `false`
  - OpenPort – default is 2056
  - DependentElement – default is `false`
  - Gateway – default is `false`
  - ClusterElementName – default is `Server One`
  - DebugLogFileName – default is `./managers/log/cluster/DEBUG.log`
  - NoticeLogFileName – default is.`/managers/log/cluster/NOTICE.log`
  - WarningLogFileName – default is `./managers/log/cluster/WARNING.log`
- <6> - lets you enter and edit each dispatcher property.
  Three editing options are available. <Y> – lets you enter and edit the current Cluster property value; <N> – displays the next property without changing the current property settings; <D> – confirms the current settings and displays the "Cluster Settings" menu.
  The dispatcher properties that can be edited are
  - JoinPort – default is 2077
  - MemoryElement – default is `false`
  - ClusterHosts – defaults are `localhost: 2078; localhost: 2062; localhost: 2063; localhost: 2064; localhost: 2065`
  - ClusterElementId – default is 5001
  - InfoLogFileName – default is `./managers/log/cluster/INFO.log`
  - ClusterName – default is `SAPJ2EEngine Cluster`
  - ClusterElementType – default is `Dispatcher`
  - RepeatToConnect – default is `false`
  - OpenPort – default is 2055
  - DependentElement – default is `false`
  - Gateway – default is `false`
  - ClusterElementName – default is `Dispatcher One`
  - DebugLogFileName – default is `./managers/log/cluster/DEBUG.log`
  - NoticeLogFileName – default is `./managers/log/cluster/NOTICE.log`

- o WarningLogFileName – default is
  `./managers/log/cluster/WARNING.log`
- <0> – exits the Setup program.

If <2> was the choice of Step 5, a custom Cluster installation can be performed. The installation components are displayed with "Component name," "Description," and "Size." The options are: <Y> – installs the component, <N> – does not install the component, and <B> – confirms the current settings and takes the process back one step.

The Cluster custom Setup installation components are:

- admin – installs SAP J2EE Engine 6.20 Visual Administrator. This tool supports remote administration and can be installed on any machine in the LAN.
- server – installs SAP J2EE Engine 6. application node and if specified a state controller or a backup state controller. When "Properties" is selected, a dialog box appears that lets you edit the properties of this component. To create a working cluster, you must include the dispatcher component group as well.
- dispatcher – enables the SAP J2EE Engine 6.20 system administrator to configure dispatcher nodes of a cluster system configuration. When "Properties" is selected, a dialog box appears that lets you edit the properties of this component. To create a working cluster, you must include the "server" component as well.
- deploying – installs visual Deploy Tool. This tool supports remote connection to the J2EE Engine and can be installed on any machine in the LAN.
- config tool – installs Config Tool. This tool must be installed on the same machine as SAP J2EE Engine 6.20. It cannot connect to the J2EE Engine remotely.
- sda pool – installs SDA file for SDM registration.
- docs – installs SAP J2EE Engine 6.20 Documentation
- uninstall – installs the components required to uninstall SAP J2EE Engine 6.20
- tools – installs a client group that lets you deploy client application archives. SAP J2EE Engine 6.20 specific tools are also installed and some of them must be on the same machine as SAP J2EE Engine 6.20, so the whole group must be with the engine.

Note: For detailed information about SAP J2EE Engine 6.20 Tools, refer to the *Administration Tools* section of Administration Manual.

Step 7: Choose Java Virtual Machine

Select Java Virtual Machine by specifying the path to the JDK directory on the local machine.

- <1> – takes the installation back one step
- <2> – allows you to type the full path to the Java Virtual Machine manually
- <3> – finds all Java Virtual Machines on the local hard drives and lets you choose one of them
- <0> – exits the setup program

Step 8: Java Heap Size

This step specifies the current max Java heap size (in megabytes) for "dispatcher", "server", and "alone" configuration running. Its default value is 64.

- <1> – continues with the installation process
- <2> – takes the process back one step
- <3> – changes the maximum Java heap size
- <0> – exits the setup program

Step 9: Run the Installation and Export to XML File

This is the final step before the installation procedure begins. The installation settings are displayed. You can export all user-defined settings such as installation directory, program folder, and components to be installed, can to an external XML file to be reused for other installations.

- <1> – begins the installation procedure
- <2> – takes the installation setup back one step
- <3> – saves current Setup information to an XML file and exits the Setup program
- <0> – exits the Setup program

After installing the J2EE Engine, you can run SAP J2EE Engine 6.20 Config Tool and read the *Readme* file be selecting the appropriate "Y" or "N" answers.

Note: For more information about configuring SAP J2EE Engine 6.20 using the Config Tool, refer to *Config Tool* section of Administration Manual.

We recommend that you choose to run the Config Tool if the installation host is overloaded. In this case the system might fail to start the SAP J2EE Engine services, which results in the following message: `Timeout starting core services`. This might also occur for the additional services. Therefore, use the Config Tool to set the following properties of Service Manager:

- CoreLoadTimeout – change the value of this property to 300
- AdditionalLoadTimeout – change the value of the property to 300 as well.

For more information about these properties, refer to the *Managers Administration Reference → Service Manager* section in the Administration Manual.

3

Chapter

Uninstalling on Windows NT/2000

- How to Run the Uninstall Procedure
- GUI Uninstall Procedure
- Non-GUI Uninstall Procedure

How to Run the Uninstall Procedure

There are several ways to run the uninstall procedure, depending on the uninstalling tool.

GUI-Based Uninstall Procedure

To run the GUI-based uninstall procedure on Windows 2000/NT, open a console window in the *<SAPj2eeEngine_install_dir>/uninstall* folder where the *visual.bat* file is located. Type `visual` on the command line and choose "Enter." Alternatively, you can choose *Start→Programs→SAP J2EE Engine 6.20→Uninstall*. A third way is to double-click the *visual.bat* file located in the *uninstall* folder.

The installation starts and an uninstalling wizard appears. To complete the uninstall procedure, several steps must be passed and the required information must be submitted. This type of uninstall procedure is described in the *GUI Uninstall Procedure* section.

Non-GUI Uninstall Procedure

This type of uninstalling SAP J2EE Engine 6.20 is similar to GUI-based.

There are two ways to run the non-GUI un-installation procedure:

- Open a console window in the *<SAPj2eeEngine_install_dir>/uninstall* folder where the *console.bat* file is located. Type `console` on the command line and choose "Enter."
- Double-click the *console.bat* file to start the non-GUI uninstall procedure.

This type of uninstall procedure is described in the *Non-GUI Uninstall Procedure* section.

Third-Party Uninstall Procedure

You can use third-party tools instead of the visual tools provided with J2EE Engine (GUI and non-GUI based). A third-party tool implements a different user interface on batch Setup level. You can use it to fit the uninstall procedure as part of a more global system, or to change its user interface according to your requirements. Third-party tools must use *install_log.xml* and *uninstall.xml*, which are described in the Development Manual. Such tools must read from *install_log.xml* and generate the *uninstall.xml* file properly.

GUI Uninstall Procedure
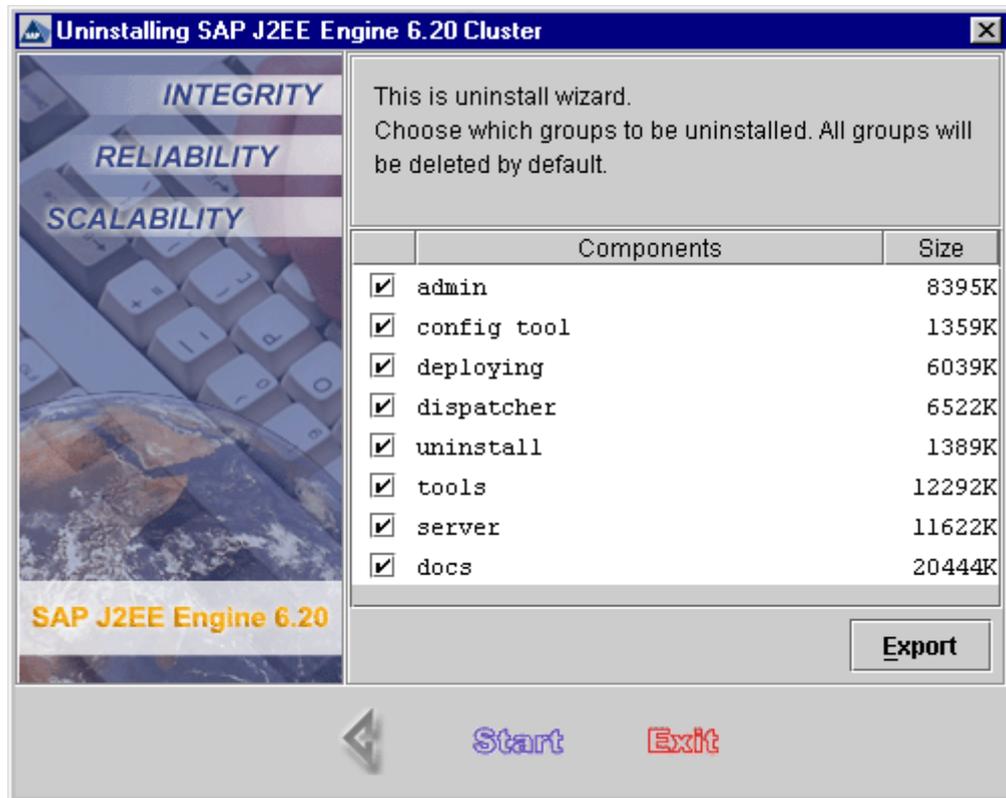
Uninstalling Window

Deselect the indicators of the installed components you want to remove. "Export" saves the current uninstalling configuration in the *uninstall.xml* file. This file can be further given as a parameter to run the *batchuninstall* script file, located in the *<SAPj2eeEngine_install_dir>/uninstall* directory.

"Start" starts the uninstall process. "Exit" exits the uninstall procedure.

After "Start" is selected, the uninstall procedure completes, and a status window is displayed.
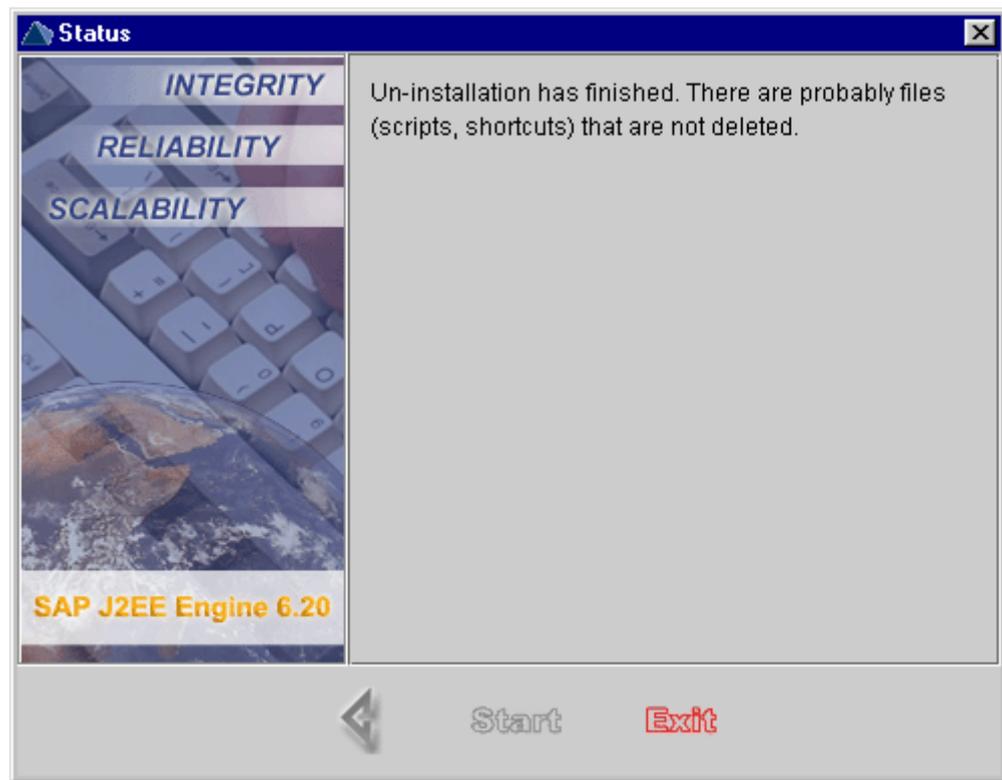
Un-installation Status

Choose "Exit" to finish the un-installation of SAP J2EE Engine 6.20.

Non-GUI Uninstall Procedure

Step 1: The Welcome Message

A Welcome message introduces you to the uninstall procedure. This message is followed by two choices:

- <1> – continues the uninstall procedure and jumps to the next step
- <0> – exits the un-installation process

Step 2: Choose Uninstall Type

Two uninstalling types are available – full and custom. The full uninstall procedure removes all files from the installed groups automatically. The custom uninstall procedure removes only the selected SAP J2EE Engine 6.20 groups. The custom uninstall type helps you to keep only the components necessary for your specific requirements.

- <1> – leads to the full type of SAP J2EE Engine 6.20 uninstall procedure, and goes to "Step 4"
- <2> – leads to the custom type of SAP J2EE Engine 6.20 uninstall procedure, and goes to "Step 3"
- <3> – takes the uninstalling back one step
- <0> – exits the un-installation process

Step 3: Select the Components to Uninstall

This step is reached if the Custom type of uninstall procedure was chosen in the previous step. Each SAP J2EE Engine 6.20 component is described by its name. Each component can be uninstalled separately. You can choose from the installed components: server, dispatcher (both for cluster installation for Stand-alone Setup type, the component is "alone"), admin, deploying, config tool, tools, docs, and uninstall.

- <Y> – uninstalls the component
- <N> – does not uninstall the component after the uninstall procedure, the component remains usable

Step 4: Begin Un-installation

This step follows Full type un-installation, or after the uninstall components have been specified in "Step 3:"

- <1> – starts the uninstall process
- <2> – exports the specified information to *uninstall.xml* file. This file can be given as a parameter to run the *batchuninstall* script file located in *<SAPj2eeEngine_install_dir>/uninstall* directory.

- <3> – goes back to "Step 2"
- <0> – exits the un-installation process

Chapter 4

Installing on Unix/Linux Platforms

- Installation Procedure

- GUI Installation Procedure

- Non-GUI Installation Procedure

Installation Procedure

Overview

In this section, the installation procedure on Unix/Linux platforms is presented with the corresponding specifics. It contains a step by step description of the Cluster system installation procedure, explained detailed in the sections below. The Stand-alone type is similar.

Running the installation and completing it successfully ensures that all files from the installation distribution are integrated with the file system of the machine. This is essential to be able to start SAP J2EE Engine 6.20 and make use of its functions.

You do not have to uninstall previous versions of SAP J2EE Engine 6.20. Several versions may exist, or even different builds of the same version of this product, as long as they are installed in different destination directories.

Note: A known bug in JDK 1.3 disables the Config tool running after the installation procedure and the Unix Daemon performance. For more information, refer to: `http://developer.java.sun.com/developer/bugParade/bugs/4333346.html`

How to Run the Installation

Running the installation of SAP J2EE Engine 6.20 on Unix/Linux platforms is described below.

There are two different types of the installation – a GUI-based installation and a non-GUI one (console).

GUI-Based Installation

To start the GUI-based installation, the *visual.sh* file located in the distribution directory of SAP J2EE Engine 6.20 must be run. Set the permission of this file to `executable`. An installation wizard appears. To complete the installation, you must submit all necessary information correctly. This type of installation procedure is described in the *GUI Installation Procedure* section of the *Installing on Windows NT/2000* chapter of this document.

Non-GUI Installation

This type of SAP J2EE Engine 6.20 installation is similar to GUI-based. Analogically, the script file *console.sh* must be run to start the non-GUI installation. Set the permission of this file to `executable`.

GUI Installation Procedure

The description of the GUI-based installation procedure can be read in the *GUI Installation Procedure* section of the *Installing on Windows NT/2000* chapter of this document.

Non-GUI Installation Procedure

The description of the non-GUI installation procedure can be read in the *Non-GUI Installation Procedure* section of the *Installing on Windows NT/2000* chapter of this document. It is the same as the corresponding procedures on Windows platforms, except for the look and feel of the GUI-based one.

Chapter 5

Uninstalling on Unix/Linux Platforms

- How to Run the Uninstall Procedure

How to Run the Uninstall Procedure

There are two ways to run the uninstall procedure, depending on the uninstalling tool.

GUI-Based Uninstall Procedure

To run the GUI-based uninstalling procedure on Unix/Linux platforms, execute a script file named *visual.sh*. It is located in the *<SAPj2eeEngine_install_dir> /uninstall* folder.

Non-GUI Uninstall Procedure

This type of uninstalling SAP J2EE Engine 6.20 is similar to GUI-based. Numerical values or words must be entered on the command line. The uninstall procedures on Unix/Linux platforms consist of the same steps as the uninstall ones on Windows platforms.

To run the non-GUI uninstall procedure on Unix/Linux platforms execute a script file named *console.sh*. It is located in the *<SAPj2eeEngine_install_dir> /uninstall* folder. This type of uninstall procedure is described in the *Non-GUI Uninstall Procedure* section of the *Uninstalling on Windows NT/2000* chapter of this document.

Chapter **6**

Installing on IBM OS/390 Platforms

- Installation Procedure
- Description of the Installation

Installation Procedure

Overview

In this section, the installation procedure on IBM OS/390 platforms is presented, with the corresponding specifics. The installation scenario of installing a Cluster system configuration is described. The Stand-alone configuration install is similar.

You do not hove to uninstall previous versions of SAP J2EE Engine 6.20. Several versions may exist, or even different builds of the same version of this product, as long as they are installed in different destination directories.

There are several system requirements that must be met to run SAP J2EE Engine 6.20. Most of them are described in the *System Requirements* chapter and must be performed for all types of platforms. For IBM OS/390, another requirement must be met. In addition to the minimal hardware configuration specified, the hard disk space requirement must be increased by about 30-MB.

Note: A known bug in JDK 1.3 disables the Config tool running after the installation procedure and the Unix Daemon performance. For more information, refer to:
`http://developer.java.sun.com/developer/bugParade/bugs/4333346.html`

How to Run the Installation

Running the installation of SAP J2EE Engine 6.20 on IBM OS/390 platforms is described below.

There is only a non-GUI installation (console).

Non-GUI Installation Procedure

To run the installation procedure:

- Open a console window in the directory where the *console.os390* file is located, make it executable, and run the installation.

Description of the Installation

The code table is EBCDIC not ASCII, therefore the JDK chosen during the installation has been copied in the *<SAPj2eeEngine_install_dir>/tools/jdk* directory, and the *java.policy* and *java.security* files have been converted from EBCDIC into ASCII.

Note: The hard disk space increase is necessary because of the copied JDK.

The installation procedure on Windows NT/2000 and IBM OS/390 platforms consist of the same steps, regardless of which SAP J2EE Engine 6.20 operational system is installed.

The script files that run the SAP J2EE Engine 6.20 tools are generated in EBCDIC format, but the JVM runs under ASCII mode.

The description of the installation procedure can be read in the *Non-GUI Installation Procedure* section of the *Installing on Windows NT/2000* chapter. It is the same as the corresponding procedures on Windows platforms.

7

Chapter

Uninstalling on IBM OS/390 Platforms

- How to Run the Uninstall Procedure

How to Run the Uninstall Procedure

The uninstall procedure on IBM OS/390 platforms consists of the same steps as on Windows platforms. Numerical values or words must be entered on the command line.

To run the non-GUI uninstall procedure on IBM OS/390 platforms, execute a script file named *uninstall*. It is located in the *<SAPj2eeEngine_install_dir> /uninstall* folder. This type of uninstall procedure is described in the section *Non-GUI Uninstall Procedure* of the *Uninstalling on Windows NT/2000* chapter.

Note: After the uninstall process, the copied JDK is not deleted. For more information, refer to the *Installing on IBM OS/390* chapter.

Chapter **8**

Installing on IBM OS/400 Platforms

- Installation Procedure

Installation Procedure

Overview

In this section, the installation procedure on IBM OS/400 platforms is presented, with the corresponding specifics. The installation scenario of installing a Cluster system configuration is described. The Stand-alone configuration install is similar.

Running the installation and completing it successfully ensures that all files from the installation distribution are integrated with the file system of the machine. This is essential to be able to start SAP J2EE Engine 6.20 and make use of its functions.

You do not hove to uninstall previous versions of SAP J2EE Engine 6.20. Several versions may exist, or even different builds of the same version of this product, as long as they are installed in different destination directories.

Note: A known bug in JDK 1.3 disables the Config tool running after the installation procedure and the Unix Daemon performance. For more information, refer to: `http://developer.java.sun.com/developer/bugParade/bugs/4333346.html`

How to Run the Installation

Running the installation of SAP J2EE Engine 6.20 on IBM OS/400 platforms is described below.

There is only a non-GUI installation (console).

Non-GUI Installation Procedure

To run the installation procedure:

* Open a 5250 terminal to the iSeries machine
* Log on as a user that has permission to write to the integrated file system (IFS)
* To start the Qshell interpreter, enter *QSH* and choose *Enter*
* Change to the directory where the *console.os400* file is located
* To start the installation, enter *.console.os400*

Description of the Installation

The installation procedure on Windows NT/2000 and IBM OS/400 platforms consist of the same steps, regardless of which SAP J2EE Engine 6.20 operational system is installed.

Note: All scripts that start SAP J2EE Engine visual tools are generated in Windows format to access remote machines with Windows platforms (for example: `../admin/go.bat`).

The description of the installation can be read in the *Non-GUI Installation Procedure* section of the *Installing on Windows NT/2000* chapter. It is the same as the corresponding procedures on Windows platforms.

Chapter **9**

Uninstalling on IBM OS/400 Platforms

- How to Run the Uninstall Procedure

How to Run the Uninstall Procedure

The uninstall procedure on IBM OS/400 platforms consists of the same steps as on Windows platforms. Numerical values or words must be entered on the command line.

To run the non-GUI uninstall procedure on IBM OS/400 platforms, execute a script file named *uninstall*. It is located in the *<SAPj2eeEngine_install_dir> /uninstall* folder. This type of uninstall procedure is described in the section *Non-GUI Uninstall Procedure* of the *Uninstalling on Windows NT/2000* chapter.

Chapter 10

Upgrading SAP J2EE Engine 6.20

Upgrading SAP J2EE Engine 6.20 on Windows NT/2000

This section contains some specifics when upgrading between different versions of SAP J2EE Engine 6.20. If you want to upgrade to SAP J2EE Engine 6.30/6.40, refer to the migration/upgrade documentation for the corresponding version.

The upgrade procedure does not differ from the installation in terms of user input. The differences refer to the background activities, which the upgrade procedure performs automatically.

Pre-Upgrade Tasks

- When you upgrade your SAP J2EE Engine 6.20 cluster with a new patch, make sure you upgrade every J2EE Engine, which has been installed on each machine in this cluster. This is necessary because the upgrade procedure does not synchronize the versions of the SAP J2EE Engine services across the cluster nodes.
- Before upgrading your SAP J2EE Engine, make sure you have stopped all running nodes in the cluster.
- To upgrade the existing SAP J2EE Engine 6.20, use the installation procedure. You cannot upgrade it using the SAPInst.
- Make sure the J2EE directory is excluded from any virus scanners, which may slow down the upgrade procedure.
- Before running the upgrade procedure, make sure you do not have any Services or MMC (Microsoft Management Console) windows opened.

Note: The upgrade procedure will overwrite the *web.xml* file located in *<J2EEngine_install_dir>/bin/cluster/server/services/servlet_jsp/work/jspTemp/_$SAP _J2EE_Engine_default_context/root/WEB-INF/.* If you have manually applied settings to this file, they will be lost during the upgrade procedure. Therefore, before starting the procedure, make a copy of this file and after finishing the upgrade, apply your custom settings to the new file. However, do not replace the new file, with the old one.

The upgrade procedure will remove the *./docs/StartPage/documents* directory and some other outdated documentation files from the *./docs* directory. If you have stored your own custom files in the *./docs/StartPage/documents* directory, copy them before the upgrade. The upgrade procedure will also replace the *index.html* file located in the *./docs* directory, therefore if you have customized that file, make sure that after the upgrade, you apply the same changes to the new file.

Upgrading Steps

Start the Installation

The SAP J2EE Engine 6.20 upgrade procedure is the same as the corresponding installation procedure. Therefore, to start upgrading your J2EE Engine, see *How to Run the Installation* and *Installation Procedure* sections in this manual. Perform all the actions in Step 1 and Step 2 of the installation procedure.

Note: We recommend that you make a full backup of the existing J2EE Engine.

Note: If you install a state controller or a backup state controller, make sure that you have enough hardware resources to support this installation.

During upgrade, when you install a state controller or a backup state controller, the starting *go* scripts are copied from the initial server node of the existing cluster and the values for *MaxHeapSize* and *InitialHeapSize* are set by default to 256MB and 64MB correspondingly.

Specify Destination Directory

At Step 3 of the installation you have to specify the destination directory of the existing J2EE Engine that you want to upgrade. There is an option to browse and select the desired folder. The default value is *C:\SAP_J2EEngine6.20.*

Choose *Next*.

The upgrade procedure:

- Configures all server nodes as application nodes
- Configures the dispatcher nodes
- If you have selected to install a state controller or a backup state controller, creates them and configures accordingly the other cluster nodes.
- Creates *<SAPj2eeEngine_install_dir>/backup/* directory and copies the old JAR and XML files in it, before starting to update them in their original locations.

Note: When you create a state controller, the following applies to the DB files – the state controller copies the files from the former primary server or from the most up-to-date former primary server if the cluster contains more than one.

Specify NT/2000 Service

If you upgrade a SAP J2EE Engine instance, where the cluster nodes are registered as NT services, select the *Engine running as NT Service* indicator and enter operating system user name and password to register the NT service.
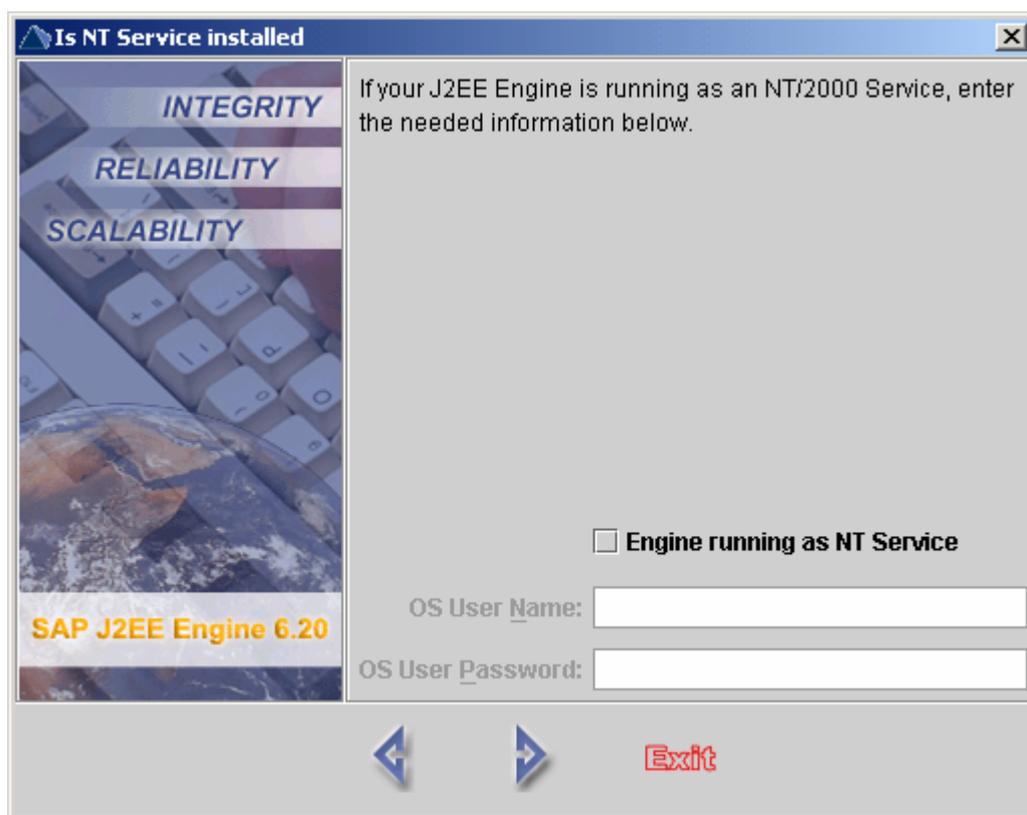
Note: If the primary server on the existing J2EE Engine is set as an NT/2000 Service or Unix Daemon, then when you upgrade the J2EE Engine to version 6.20 PL 25 or higher, the primary server node will be configured as an application node and will remain as an NT/2000 Service or Unix Daemon.

Note: Wait for the upgrade procedure to finish; it may take some time if you have lots of applications deployed.

Upgrading Configurations

If you want to upgrade a configuration that consists of more than one machine, then you have to consider the following issues:

- Where to install the central instance and where to install the dialog instances
- If you want a backup state controller, on which machine to create it
- You have to run the upgrade procedure on each machine and to connect the dialog instances to the state controller.

The following example demonstrates how to perform a successful upgrade procedure if you have a cluster with three machines.

Note: If you are upgrading from 6.20 PL 21, then you are not asked to install central instance or dialog instances, since they already exist. The upgrade procedure directly upgrades your configuration.

Example: A Cluster with Three Physical Machines

You have a cluster configuration that consists of three machines (A, B, and C) as each one of them has one dispatcher and one primary server. To upgrade this cluster, you have to perform the following steps.

Note: Before proceeding with the upgrade procedure, make sure that all of the cluster nodes are stopped.

Step 1: Installing the central instance

You want to install the central instance on machine A. To perform this, run the installation procedure on A and at the second dialog window displayed choose *Central Instance*.
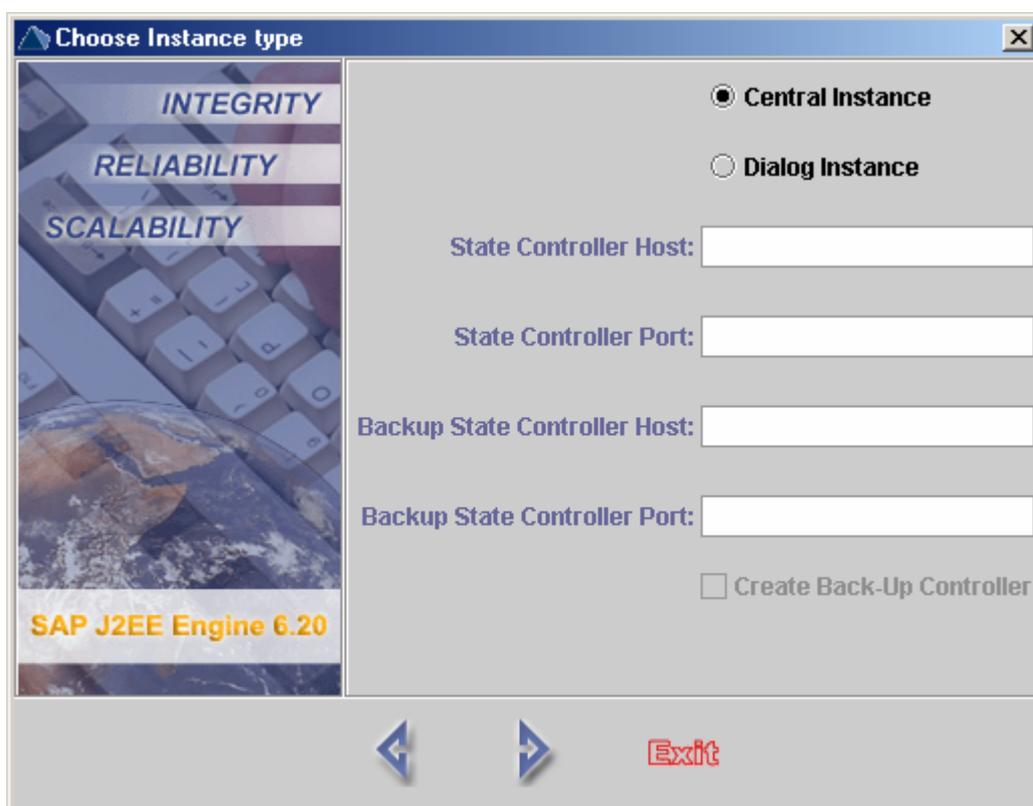
Complete the upgrade procedure as specifying the J2EE Engine version which you want to upgrade in the *Destination Directory* step.

When the upgrade completes, the old dispatcher is preconfigured and the primary server is transformed as an application node, named "server". Also, a state controller is created with the name "state". To see the new configuration, open *<SAP_J2EE_Engine_v6.20_install_dir>/cluster*

Step 2: Getting the state controller host and port values

Before proceeding with the upgrade procedure on the other machines, you have to get the host and port values of the state controller. To perform this, run the Config

Tool from *<SAP_J2EE_Engine_v6.20_install_dir>/configtool* and select *cluster\state -> managers -> ClusterManager*. In the displayed table with properties, see *ClusterHosts* and *JoinPort*. Remember these values, they are needed when connecting the dialog instances to the state controller.

Step 3: Installing a dialog instance on machine B

Run the installation on machine B and at the second dialog window displayed choose *Dialog Instance*. In the provided fields, enter the state controller host and port values from Step 2.

Also, if you want to create a backup state controller on machine B, select the *Create Backup Controller* indicator.

Complete the upgrade procedure as specifying the J2EE Engine version which you want to upgrade in the *Destination Directory* step.

When the upgrade completes, the old dispatcher is preconfigured and the primary server is transformed as an application node, named "server" . Also, a backup state controller is created with name "state". To see the new configuration, open *<SAP_J2EE_Engine_v6.20_install_dir>/cluster*

**Step 4: Getting the backup controller host and port values**

Before proceeding with the upgrade procedure on the last machine, you have to get the host and port values of the backup state controller. To perform this, in the Config Tool select *cluster\state -> managers -> ClusterManager*. In the displayed table with

properties, see *ClusterHosts* and *JoinPort*. Remember these values, they are needed when connecting the other dialog instance to the backup state controller.

**Step 5: Adding the backup state controller host and port**

After installing the dialog instance with a backup state controller, you have to add the host and port value of the controller to all cluster nodes of the central instance in order to connect to the backup controller in case of state controller failure.

From machine A with the central instance, run the Config Tool and edit the *ClusterHosts* property of all central instance nodes as adding the host and port of the dialog instance. Choose *File -> Apply*.
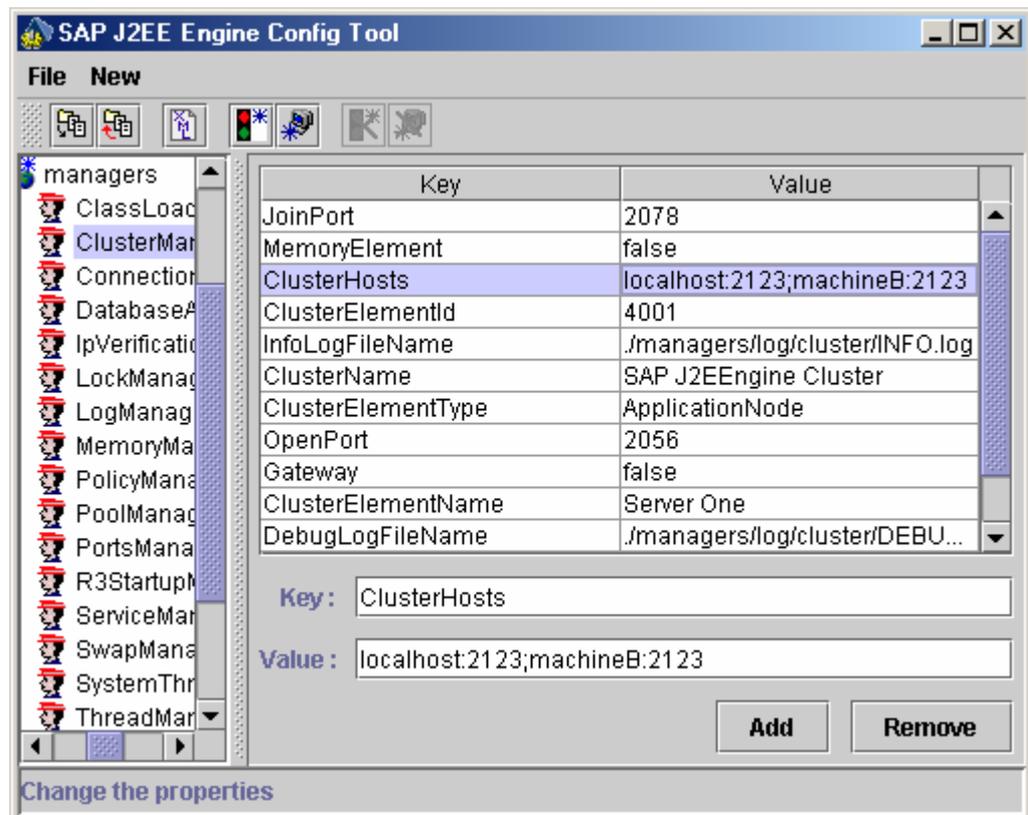
Step 6: Installing a dialog instance on machine C

Run the installation on machine C and at the second dialog window displayed choose *Dialog Instance*. In the provided fields, enter the state controller host and port values (from Step 2) and the backup state controller host and port values (from Step 4).
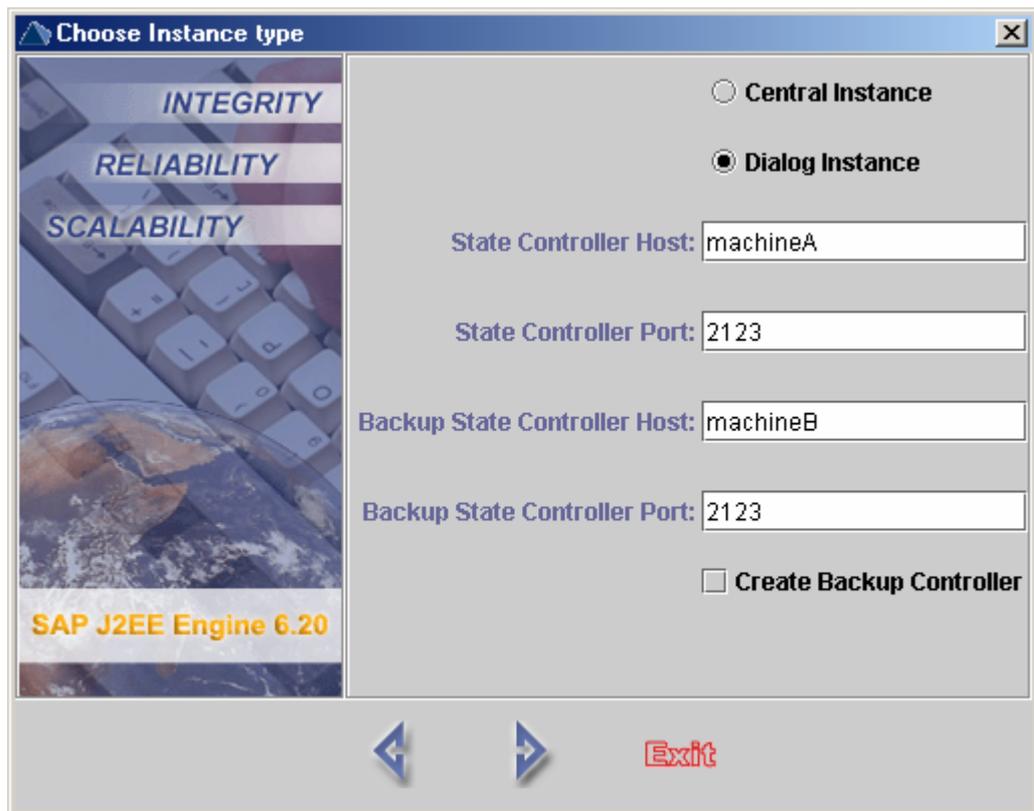
When the upgrade completes, the old dispatcher is preconfigured and the primary server is transformed as an application node, named "server". To see the new configuration, open *<SAP_J2EE_Engine_v6.20_install_dir>/cluster*

Your cluster is now upgraded.

Step 7: Post-Upgrade Steps

If you have Enterprise Portal, make sure that the startup mode of R3Startup Service and Metamatrix Service is set to "manual". You can view this information using the Config Tool. See also SAP Note 711383.

Upgrading SAP J2EE Engine 6.20 on Unix/Linux Platforms

This section contains some specifics when upgrading between different versions of SAP J2EE Engine 6.20. If you want to upgrade to SAP J2EE Engine 6.30/6.40, refer to the migration/upgrade documentation for the corresponding version.

The upgrade procedure does not differ from the installation in terms of user input. The differences refer to the background activities, which the upgrade procedure performs automatically.

Pre-Upgrade Tasks

Make sure that you perform the upgrade of the J2EE Engine using the *j2eeadm* user. Do not perform the upgrade using the *root* user.

Upgrading Steps

The SAP J2EE Engine 6.20 upgrade procedure on Unix/Linux is the same as the corresponding procedure on Windows NT/2000. Therefore, to start upgrading your J2EE Engine, see *Upgrading SAP J2EE Engine 6.20 on Windows NT/2000* section in this manual.

Note: The step *Specifying NT/2000 Service* is missing from this upgrade procedure because the Unix Daemons do not have to be restarted.

Note: We recommend that you make a full backup of the existing J2EE Engine.

Note: If you install a state controller or a backup state controller, make sure that you have enough hardware resources to support this installation.

During upgrade, when you install a state controller or a backup state controller, the starting *go* scripts are copied from the initial server node of the existing cluster and the values for *MaxHeapSize* and *InitialHeapSize* are set by default to 256MB and 64MB correspondingly.

11

Chapter

Starting SAP J2EE Engine 6.20

Starting SAP J2EE Engine 6.20

There are several ways for starting your SAP J2EE Engine 6.20. Choose the one that best suits to your needs:

Standard Startup

Open the directory where the J2EE Engine is installed and execute the *go* script files of all cluster nodes. For example, the path to the *go* script file for the dispatcher node is *<SAP_J2EE_Engine_v6.20_install_dir>/cluster/dispatcher/go.bat* (for Windows users).

Startup with Automated Restart if a Cluster Node Fails

Open the directory where the J2EE Engine is installed and execute the *go_loop* script files of all cluster nodes. For example, the path to the *go_loop* script file for the dispatcher node is *<SAPj2eeEngine_install_dir>/cluster/dispatcher/go_loop.bat* (for Windows users).

When starting the cluster nodes with *go* and *go_loop* scripts, follow the steps below:

- Start the state controller first
- Start the remaining dispatcher and application nodes in the cluster
  These nodes will connect to the state controller
- Start the backup state controller.

The backup state controller will connect to the state controller. The existence or successful start of the backup state controller is not critical for successful start of the whole cluster.

Note: To initially start the cluster, you always have to start the state controller first. You cannot start the cluster by using the backup state controller as a state controller. The backup state controller can only take the responsibilities of the state controller in an already started and running cluster when the state controller has failed, but the backup state controller cannot be used to start a new cluster.

Using the 6.40 Startup Framework

We recommend that all Enterprise Portal (EP) customers use the 6.40 startup framework on SAP J2EE Engine 6.20 for starting the J2EE Engine. For information how to install and configure the 6.40 startup framework, see the *Installing and Configuring the 6.40 Startup Framework to Use with SAP J2EE Engine 6.20* guide, attached to SAP Note 748713.

Note: If you upgrade SAP J2EE Engine PL 19 or 20 to a higher version, you have to manually configure the new state controller and the backup state controller (if created) to use the startup framework. Otherwise, the life cycle of the new node will not be managed by the startup framework.

Startup in ABAP Environment

This startup sequence is present if the *r3environment* property of the R3Startup Manager running on the dispatcher node is set to *yes*. In this case the ABAP dispatcher triggers the startup of the whole SAP J2EE Engine cluster.

Running the SAP J2EE Engine as an NT/2000 Service or Unix Daemon

To run the J2EE Engine in background mode, refer to the *SAP J2EE Engine 6.20 as an NT/2000 Service or Unix Daemon* section in the Administration Manual.