

IBM WebSphere Studio  
Application Developer Version 5.0



# Installation Guide

**Note!**

Before using this information and the product it supports, be sure to read the general information under Notices.

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## Chapter 1. IBM WebSphere Studio Application Developer Version 5.0 Installation Guide

This *Installation Guide* Fourth edition (April 2003) contains the following information for WebSphere Studio Application Developer Version 5.0:

- Hardware and software prerequisites for IBM<sup>(R)</sup> WebSphere<sup>(R)</sup> Studio Application Developer
- How to install and uninstall WebSphere Studio Application Developer
- How to install and uninstall IBM Agent Controller
- How to install messaging and queuing support for WebSphere test environment
- How to set up WebSphere Studio for working in a team environment

Consult the product support site at [www.ibm.com/software/awdtools/studioappdev/support/](http://www.ibm.com/software/awdtools/studioappdev/support/) for the following information:

- Upgrading fixes to WebSphere Studio Application Developer, for example to upgrade from 5.0 to 5.0.1
- Upgrading fixes to Agent Controller
- Upgrading fixes to the WebSphere test environment

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### Related Information

- Refer to the *Migration Guide* for information on how to migrate from VisualAge<sup>(R)</sup> for Java<sup>(TM)</sup>, WebSphere Studio, and previous versions of WebSphere Studio Application Developer.
- Refer to the readme file for information about product problems and limitations, supported software levels for specific features of WebSphere Studio, and changes in this release.
- Refer to [www.ibm.com/software/ad/studioappdev](http://www.ibm.com/software/ad/studioappdev) for updated documentation and troubleshooting information.



This guide is available in both HTML and Acrobat PDF versions, in the /readme directory. Both versions contain the identical information. You can open `install.html` in any Web browser. To open `install.pdf`, you must have installed the Acrobat Reader software, which you can download from [www.adobe.com/products/acrobat/readstep2.html](http://www.adobe.com/products/acrobat/readstep2.html).

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### Hardware prerequisites

The following hardware must be installed before you install WebSphere Studio Application Developer:




- Intel<sup>(R)</sup> Pentium<sup>(R)</sup> II processor minimum. Pentium III 500 MHz or higher is recommended.
- 512 MB RAM minimum (768 MB RAM is recommended)
- Disk space:
  - You will require 940 MB minimum disk space for installing WebSphere Studio Application Developer and additional disk space for your development resources. **Note:** Minimum disk space can be reduced if optional features and run-time environments are not installed.

- You will also require additional disk space if you download the electronic image to install WebSphere Studio Application Developer.
- Display resolution:
  -  800 x 600 display minimum (1024 x 768 recommended)
  -  1024 x 768 display minimum

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## Software prerequisites

The following software must be installed before you install WebSphere Studio Application Developer:

- One of the following operating systems:
  - Windows<sup>(R)</sup> 2000 Professional with Service Pack 2 or higher
  - Windows XP Professional
  - Windows NT<sup>(R)</sup> Workstation or Server Version 4.0 with Service Pack 6a or higher
  -  Red Hat, Version 7.2
  -  SuSE, Version 7.2
- A Web browser to view the license agreements and the online help for the WebSphere Studio Installation Launcher.
-  If you receive an installation error message that you are missing certain prerequisites, you need to obtain one or more RPM packages. Refer to “Missing prerequisites” on page 18.
- For information about supported database servers, Web application servers, and other software products, see the readme file located in the root of both the installation CD and the product installation directory.

## Third-party plug-ins

If you had WebSphere Studio Application Developer Version 4.0.x installed and you downloaded and installed any third-party plug-ins, you need to get the corresponding plug-ins for Version 5 and reinstall them.

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## Chapter 2. Installing WebSphere Studio Application Developer on Windows

This section contains information about installing WebSphere Studio Application Developer on Windows. You may install WebSphere Studio Application Developer either from the CD-ROM or from the electronic images that you download. You may also install WebSphere Studio Application Developer either using the WebSphere Studio Installation Launcher or silently.

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### Migration and coexistence issues

Do not install this version of WebSphere Studio Application Developer over an earlier version. You can either install into a different directory for coexistence, or you can uninstall the previous version before installing this one. However, you *must* uninstall WebSphere Studio Application Developer Version 5.0 Beta or WebSphere Studio Application Developer Version 5.0 Early Availability before you install this version of WebSphere Studio Application Developer.

**Important:** If you try to open a Version 4.0.x workspace from the Version 5.0 IDE, the workspace will be converted to a Version 5.0 workspace. Project names, project source files, and project Java build paths (class paths) are retained. However, user interface settings, debug settings, and most preferences are lost. Refer to the *Migration Guide* for instructions on safely migrating your existing projects to Version 5.0.

As a precaution, it is recommended that you make a backup copy of your Version 4.1.x workspace prior to migrating to Version 5.

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### Installing from the CD-ROM

If you are installing WebSphere Studio Application Developer from electronic images, skip to the steps described in “Installing from the electronic image of WebSphere Studio Application Developer” on page 5.

Before you install the product, check the following things:

- In addition to the space required to install the product, you must have at least 50 MB free on your Windows system drive, and your environment variable TEMP or TMP must point to a valid temporary directory with at least 10 MB free.
- You must *not* have the IBM HTTP server or WebSphere Application Server, Version 3.5 running.

To install WebSphere Studio Application Developer from the product CD, follow these steps:

1. Read “Migration and coexistence issues” before you begin the installation procedure.
2. Insert the CD-ROM into your CD drive.
3. Log in as an administrator whose ID does not contain double-byte characters.
4. If autorun is disabled on your system, run **setup.exe** from the root of the CD drive.

5. If autorun is enabled on your system the **launchpad** program will automatically come up. If autorun is disabled on your system, run **launchpad.exe** from the root of the CD drive.
6. The WebSphere Studio Installation Launcher window contains several links that you can select to browse the readme file, this *Installation Guide* and the *Migration Guide*. When you have finished reviewing these documents, select **Install IBM WebSphere Studio Application Developer**.
7. Follow the on-screen instructions for tasks such as specifying the target installation directory. **Important:** Do **not** install a name into a directory that contains double-byte characters or special characters such as a dollar sign. Doing so may cause undesirable results such as class path problems in the WebSphere test environment.
8. By default, WebSphere Studio includes WebSphere Application Server Version 5 as its unit test environment. You can optionally install other unit test environments, for example if you want to develop applications to run on WebSphere Application Server Version 4. To install additional test environments:
  - a. Expand the **Run-Time Environments** category on the Custom Setup page of the installation wizard.
  - b. Select the application servers on which your applications will run.
  - c. Select **This feature, and all subfeatures, will be installed on local hard drive**.
9. If you want to install the user interface and documentation for supported national languages other than English, select to install the **Language Pack**. By default, this feature is not selected if your system locale is English. It is selected if your system locale is one of the other supported national languages.
10. By default, the examples for Eclipse plug-in development are not installed. **Tip:** If you want to go through the "Workbench basics" tutorial that is in the *Getting Started* guide, you must install these examples. To install the examples for Eclipse plug-in development:
  - a. On the Custom Setup page of the wizard, under the **Optional Features** category, click the red X beside **Examples for Eclipse Plug-In Development**.
  - b. Select **This feature, and all subfeatures, will be installed on local hard drive**. The red X beside **Examples for Eclipse Plug-In Development** disappears.
11. By default, the Rational<sup>(R)</sup> ClearCase<sup>(R)</sup> SCM Team Adapter is not installed. If you want to use Rational ClearCase instead of Concurrent Versions System (CVS), then you must install the plug-ins for it. To install the plug-ins for Rational ClearCase SCM Team Adapter:
  - a. On the Custom Setup page of the wizard, under the **Optional Features** category, click the red X beside **Rational ClearCase SCM Team Adapter**.
  - b. Select **This feature, and all subfeatures, will be installed on local hard drive**. The red X beside **Rational ClearCase SCM Team Adapter** disappears.
12. Click **Next** and then click **Install** to install WebSphere Studio Application Developer.
13. When WebSphere Studio Application Developer is installed, click **Finish** to close the installation window.



14. If you plan to use the Agent Controller, you can install the feature now or later. For more Agent Controller installation information, refer to Chapter 4, “Installing IBM Agent Controller”, on page 21.
15. If you plan to develop applications that use Java Message Service (JMS) and test them in the unit test environment that is provided with WebSphere Studio, you can install the feature now or later. For more messaging and queuing installation information, refer to Chapter 5, “Installing messaging and queuing support for the WebSphere test environment”, on page 31.  
**Important:** If MQSeries<sup>(R)</sup> is already installed, do *not* install the messaging and queuing client and server as they are a subset of the functions of the MQSeries.
16. Start WebSphere Studio Application Developer as described in “Starting WebSphere Studio Application Developer” on page 8.

**Note:** Any time after installing WebSphere Studio Application Developer, you can add or remove the optional WebSphere Studio Application Developer features using the Add/Remove Programs. The WebSphere Studio Application Developer maintenance install is launched where you can select **Modify** and then select the optional features that you want to add or remove. Remember when adding features from electronic images, the images must exist on your machine.

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## Installing from the electronic image of WebSphere Studio Application Developer

There are twelve downloadable parts for WebSphere Studio Application Developer. All twelve parts are self-extracting archives. You must install the first nine; the rest are optional. Refer to the list below for details about what each archive contains.

To install the electronic image of WebSphere Studio Application Developer, follow these steps:

1. Log in as an administrator whose ID does not contain double-byte characters.
2. Download all required parts and any desired optional parts.
3. Each part is a self-extracting archive. Extract each part into the same temporary directory.
4. From the temporary directory, run **setup.exe**.
5. Follow the above instructions for installing from the CD-ROM starting from step 5.

The following is a description of each part:

- WebSphere Studio Application Developer - Part 1 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 2 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 3 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 4 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 5 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 6 - REQUIRED. Contains core installation files.

- WebSphere Studio Application Developer - Part 7 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 8 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 9 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 10 - OPTIONAL. Contains Agent Controller. Agent Controller is discussed later in this guide.
- WebSphere Studio Application Developer - Part 11 - OPTIONAL. Contains Rational ClearCase LT. Download this part if you intend to use ClearCase for your SCM solution, and do not have Rational ClearCase (or Rational ClearCase LT) Version 4.2 or later.
- WebSphere Studio Application Developer - Part 12 - OPTIONAL. Contains embedded messaging client and server. This feature is discussed later in this guide. **Important:** If MQSeries is already installed, do *not* install this part as the messaging and queuing client and server are a subset of the functions of the MQSeries.

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## Silent installation

**Important:** When silently installing WebSphere Studio Application Developer, do not use the setup.exe file from the root of the temporary directory. Instead use the setup.exe file in the IBM\_WS\_Application\_Developer directory of the temporary directory.

### Silently installing the default WebSphere Studio Application Developer features

The following default features are installed when silently installing WebSphere Studio Application Developer:

1. Integrated Development Environment
2. WebSphere Application Server Version 5.0 (run-time environment)
3. Language Pack (if your system locale is non-English)

**Note:** Agent Controller, embedded messaging client and server, and Rational ClearCase LT are installed separately.

To install WebSphere Studio Application Developer silently with all the default selected features to the default directory *system\_drive*\Program Files\IBM\WebSphere Studio\ (where *system\_drive* is the hard drive where Windows is installed):

1. Insert the WebSphere Studio Application Developer installation CD.
2. Copy all the files on both of the WebSphere Studio Application Developer CDs to a single temporary directory.
3. From the IBM\_WS\_Application\_Developer directory of the temporary directory, run the following command:

```
setup /s /v/qn
```

**Tip:** To silently install WebSphere Studio Application Developer with all the default selected features to a different directory, type the following command:

```
setup /s /v"/qn INSTALLDIR="<WS_installdir>"
```

where *WS\_installdir* is the directory where you want to install WebSphere Studio Application Developer.

## Silently installing the complete WebSphere Studio Application Developer

When silently installing the complete WebSphere Studio Application Developer, the following features are installed:

1. Integrated Development Environment
2. WebSphere Application Server - Express (run-time environment)
3. WebSphere Application Server Version 4.0 (run-time environment)
4. WebSphere Application Server Version 5.0 (run-time environment)
5. Language Pack
6. Examples for Eclipse Plug-in Development
7. Rational ClearCase SCM Team Adapter

**Note:** Agent Controller, embedded messaging client and server, and Rational ClearCase LT are installed separately.

To silently install the complete WebSphere Studio Application Developer to the default directory:

1. Insert the WebSphere Studio Application Developer installation CD.
2. Copy all the files on both of the WebSphere Studio Application Developer CDs to a single temporary directory.
3. From the *IBM\_WS\_Application\_Developer* directory in the temporary directory, run the following command:  

```
setup /s /v"/qn ADDLOCAL=ALL"
```

**Tip:** To silently install the complete WebSphere Studio Application Developer to a different directory, type the following command:

```
setup /s /v"/qn ADDLOCAL=ALL INSTALLDIR="\<WS_installdir>\"
```

where *WS\_installdir* is the directory where you want to install WebSphere Studio Application Developer.

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## Installing Page Designer "Classic"

(Optional) WebSphere Studio Application Developer Version 4 shipped Page Designer "Classic." Version 5 contains a new Page Designer, which is the default, but also includes Page Designer "Classic" as an optionally installable component. For differences between the Page Designer shipped in Version 5 and the Page Designer "Classic" shipped in Version 4, refer to the *Migration Guide*.

If you wish to have Page Designer "Classic" associated with HTML/JSP files as the default editor, install Page Designer "Classic", and then change your workbench preference as described below.

To install Page Designer "Classic":

1. If you are running Workbench Studio, exit it before starting the installation.
2. Log in as an administrator.
3. Go to the directory *WS\_installdir/bin* (where *WS\_installdir* is the directory where WebSphere Studio Application Developer is installed) and run `pdclassic.exe`.

4. When you restart Workbench Studio, an Updates dialog box opens. Click **Yes**.  
**Note:** The Updates dialog box and the Configuration Changes dialog box will not appear upon initial startup.
5. A Configuration Changes dialog box opens. Select the check box within the **Detected changes** field which includes **Page Designer Classic (5.0.1)**.
6. Click **Finish**. The Install/Update dialog box opens.
7. Click **Yes**. Restart Workbench Studio to make the changes effective.

---

## Starting WebSphere Studio Application Developer

To start WebSphere Studio Application Developer:

1. Select **Start > Programs > IBM WebSphere Studio > Application Developer**.  
The first time that you start WebSphere Studio Application Developer, a dialog box opens with the default workspace directory already specified in the **Directory** field. By default, your work is stored in a directory called workspace, located in the *My Documents\IBM\wsad* directory, where *My Documents* is the folder on your desktop.
2. In the **Directory** field, you may change the name of the workspace. This will become the default workspace directory.  
**Important:** Do not specify the name of a Version 4.x workspace when you start WebSphere Studio Application Developer. Refer to “Migration and coexistence issues” on page 3.
3. Clear the **Use this workspace as the default and do not show this dialog box again** check box.  
**Tip:** Every time you start WebSphere Studio Application Developer, this dialog box will open, allowing you to switch workspaces, for example if you choose to maintain different workspaces for different projects.
4. Click **OK**. There will be a one-time delay while the workspace structure is created.

**Tip:** For other options related to starting WebSphere Studio Application Developer, refer to the *Getting Started* guide (**Help > Help Contents > WebSphere Studio > Getting Started**).

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## Uninstalling WebSphere Studio Application Developer on Windows

When you are uninstalling WebSphere Studio Application Developer, you must have at least 2 MB free on your Windows system drive, and your environment variable TEMP or TMP must point to a valid temporary directory with at least 5 MB free. To uninstall WebSphere Studio Application Developer:

1. Close WebSphere Studio.
2. Open the Control Panel, then open the Add/Remove Programs window. Select IBM WebSphere Studio Application Developer and click Change/Remove to uninstall.
3. Follow the uninstall wizard to uninstall the product.
4. To completely clean-up any remaining files, go to the installation directory and remove the remaining folders.

Note that Agent Controller and your workspace will not be removed. For instructions on uninstalling Agent Controller, refer to “Uninstalling Agent Controller from Windows” on page 23.

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## Known problems and limitations

This section covers known problems and limitations with installation and uninstallation for WebSphere Studio Application Developer on Windows. Refer to the readme file for information about problems and limitations that affect actual use of the product.

### Disk limitations

Do not install to a Novell NetWare drive. Installation will fail on a Novell NetWare drive.

### Shell extension (Windows NT)

If you get a message that indicates that the installation program has detected a shell extension for Windows NT, the installation cannot proceed. You should then perform the following steps:

1. Make sure you have an Emergency Recovery Disk. Instructions for creating this are available in the Windows help documentation.
2. Type `regedit.exe` at a command prompt.
3. In the Registry Editor, expand the key  
`\\HKEY_LOCAL_MACHINE\\SOFTWARE\\Microsoft\\Windows NT\\CurrentVersion\\Winlogon`
4. Select the shell name in the name/data pairs for the above key. **Important:** Make a note of the data recorded for this name, because you will need it after installing WebSphere Studio Application Developer.
5. Select **Edit > Modify** from the menu bar for the shell name/data pair.
6. Set the value for the shell name to `Explorer.exe`. Click **OK**.
7. Select **Registry > Exit** from the menu bar.
8. Restart and complete the WebSphere Studio Application Developer installation.
9. Once installation is complete, restore the previous registry entry as follows:
  - a. Type `regedit.exe` at a command prompt.
  - b. In the Registry Editor, expand the key  
`\\HKEY_LOCAL_MACHINE\\SOFTWARE\\Microsoft\\Windows NT\\CurrentVersion\\Winlogon`
  - c. Select the shell name in the name/data pairs for the above key.
  - d. Select **Edit > Modify** from the menu bar for the shell name/data pair.
  - e. Restore the value for the shell name to the value that was recorded in Step 4. Click **OK**.
  - f. Select **Registry > Exit** from the menu bar.

### Recovering from failed installation

If your installation fails, you must remove any WebSphere Studio Application Developer files that have been installed. If the directory where you intended to install WebSphere Studio Application Developer is empty, then the installation process has already removed any files that were installed and you can delete the empty directory if you want to. However, if the directory contains files, then you must start the installation process again. It will open in maintenance mode and you must select to remove your partial installation of WebSphere Studio Application Developer before you can try to install the product again.

## Another WebSphere Studio configuration that offers greater function has been detected on your system

You have attempted to install one product configuration of WebSphere Studio Version 5.0 on a system that already has a different configuration of WebSphere Studio Version 5.0 that has more features. This "downgrade" scenario is not supported. For example, you cannot install WebSphere Studio Application Developer on the same system as WebSphere Studio Application Developer Integration Edition. If you want to replace the existing product configuration, uninstall it before installing the smaller product configuration.

## Another WebSphere Studio configuration that offers less function has been detected on your system

You have attempted to install one product configuration of WebSphere Studio Version 5.0 on a system that already has a different configuration of WebSphere Studio Version 5.0 that has less features. This "upgrade" scenario is not supported. If you have WebSphere Studio Site Developer installed, you must uninstall it before installing WebSphere Studio Application Developer.

## Windows Installer errors

The following is a list of Windows Installer errors you should be aware of during installation.

- "Error 1603 (Windows NT 4.0 only)"
- "Error 1606 and Internal Error 2707" on page 11
- "Error 1631 or Internal Error 2755 (Windows NT 4.0 only)" on page 11
- "Fatal LoadLibrary() error" on page 11
- "Internal Error 20552" on page 12
- "Internal Errors 2381, 1303, 1310, 1313 (Windows NT only)" on page 12
- "Internal Error 2735 Engine Startup" on page 12

### Error 1603 (Windows NT 4.0 only)

If you receive error message 1603 when you are installing WebSphere Studio Application Developer, this indicates that Windows Installer has failed to initialize and the installation cannot proceed.

Certain products (such as Symantec's VisualCafé<sup>(TM)</sup>) automatically install a file called sfc.dll when they are installed on any Windows platform. It is only used on Windows 2000, where Windows Installer invokes it for security processing.

If a file with this name resides on the PATH on Windows NT 4.0, the Windows Installer will attempt to load it, even though sfc.dll is only applicable to Windows 2000. Windows Installer will then fail.

To work around this problem, follow these steps:

1. Select **Start > Find > Files or Folders** and search for the sfc.dll file on your system.
2. Temporarily rename the sfc.dll file (the version that resides on the Windows NT 4.0 PATH) to sfc.old.
3. Install WebSphere Studio Application Developer.
4. After you have successfully installed WebSphere Studio Application Developer, rename sfc.old to sfc.dll.



## Error 1606 and Internal Error 2707

If you receive this error message:

```
Error 1606. Could not access network location
    \Profiles\AllUsers\StartMenu\Programs\Administrative Tools\
Internal Error 2707. INSTALLDIR.
```

then the value of your Common Administrative Tools registry file may be incorrect.

You must edit the value of the Common Administrative Tools registry file before you can install WebSphere Studio Application Developer. To do so, follow these steps:

1. Type `regedit.exe` at a command prompt.
2. Expand and select the key  
`HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\`  
`User Shell Folder`
3. Select **Common Administrative Tools**.
4. Select **Edit > Modify**.
5. In the Value Data field, type the following:  
`%SystemRoot%\Profiles\AllUsers\StartMenu\Programs\Administrative Tools`
6. Click **OK**.
7. Select **Registry > Exit** from the menu bar.
8. Install WebSphere Studio Application Developer.

## Error 1631 or Internal Error 2755 (Windows NT 4.0 only)

If you install WebSphere Studio Application Developer on Windows NT 4.0, you may receive one of the following error messages:

- Error 1631: The Windows Installer service failed to start. Contact your support personnel.
- Internal Error 2755: Please contact product support for assistance.

If you receive either of these error messages, you may have registry keys with null values. When you start the WebSphere Studio Application Developer installation, the `userenv.dll` file will attempt to parse various registry keys, and if any of the keys have null values, the installation will fail with one of the above error messages.

To work around this behavior, you should either remove null environment variables or modify them (change the value from null to a valid value) before you install WebSphere Studio Application Developer. After you have installed WebSphere Studio Application Developer, you can return them to their original value.

**Caution:** Remove or modify null variables with caution. You should consider any potential impact that may occur before removing or modifying them.

## Fatal LoadLibrary() error

The Fatal LoadLibrary() error occurs because one or more WebSphere Studio Application Developer installation kernels (IKernels) were not properly registered by Windows Installer. To work around this problem, you must delete the InstallShield directory in which the IKernal files reside, and then reinstall WebSphere Studio Application Developer by following these steps:

1. If necessary, exit the installation.

2. Delete the following directory: *x:\Program Files\Common Files\InstallShield* (where *x* is the drive you attempted to install WebSphere Studio Application Developer).
3. Reinstall the product.

### Internal Error 20552

If you receive error 20552, check to see if you have the IBM HTTP server or WebSphere Application Server, Version 3.5 running. If you do have them running, shut them down.

### Internal Errors 2381, 1303, 1310, 1313 (Windows NT only)

If you are attempting to install WebSphere Studio Application Developer and any or all of the following conditions are true:

- You are installing WebSphere Studio Application Developer on Windows NT 4.0
- The drive that contains the *winnt* folder or the drive that you are installing WebSphere Studio Application Developer on is formatted with the NTFS file system
- You have incorrect permissions set on these drives
- You have read-only permissions on the directory where you are installing WebSphere Studio Application Developer.

Then you may receive one or more of the following error messages:

- Internal Error 2381: Please contact product support for assistance.
- Internal Error 1303: The Installer has insufficient privileges to access this directory: *DirectoryName*
- Internal Error 1310: Error attempting to create the destination file: *FileName*  
System error code: *ErrorCode* (this code varies depending on your problem)
- Internal Error 1315: The specified folder '*FolderName*' is not writable.

This problem has been reported to occur when there were only Read permissions on the following folders:

- *\Program Files\IBM\Application Developer*
- *\WinNT\Installer*

To resolve this problem, ensure that you have the necessary permissions on your drives or directories. To do this, follow these steps:

1. In Windows Explorer, select the appropriate drive or directory.
2. Right-click the folder and select **Properties** from its pop-up menu.
3. Select the **Security** tab. Click **Permissions**.
4. Select **Everyone**. From the **Type of Access** drop-down menu select **Full Access**.
5. Select the **Replace Permissions on Subdirectories** check box.
6. Click **OK**.
7. Click **Yes** when prompted to confirm if you want to replace permissions on all subdirectories.
8. Click **OK**.
9. Install WebSphere Studio Application Developer.

### Internal Error 2735 Engine Startup

If you receive error 2735, perform the following steps to work around it:

1. Search for the following files in your Windows 32 system directory:
  - *shd401lc.dll*



- shdoclc.dll
  - shdoc401.dll
  - shdocvw.dll
2. Rename **shd401lc.dll** to **shd401lc.old**.
  3. Rename **shdoclc.dll** to **shdoclc.old**.
  4. Select **Start > Run** to open the Run dialog. Run the following commands to unregister these .dll files.
    - regsvr32 /u shd401lc.dll
    - regsvr32 /u shdoclc.dll
  5. Register these dlls by running the following commands from the Run dialog:
    - regsvr32 shdoc401.dll
    - regsvr32 shdocvw.dll
  6. Install WebSphere Studio Application Developer.



---

## Chapter 3. Installing WebSphere Studio Application Developer on Linux

This section contains information about installing WebSphere Studio Application Developer on Linux. You may install WebSphere Studio Application Developer either from the CD-ROM or from the electronic images that you download.

---

### Migration and coexistence issues

**Important:** If you try to open a Version 4.0.x workspace from the Version 5.0 IDE, the workspace will be converted to a Version 5.0 workspace. Project name, project source files, and project Java build path (class path) are retained. However, user interface setting, debug setting, and most preferences are lost. Refer to the *Migration Guide* for instructions on safely migrating your existing projects to Version 5.0.

As a precaution, it is recommended that you make a backup copy of your Version 4.0.x workspace prior to migrating to Version 5.

---

### Preparing to install from electronic download

If you have downloaded the WebSphere Studio Application Developer gzipped tar files (IBMWSAppDev-5.0.0-part\*.tar.gz) you must extract the contents of the archive in order to install the product. If you are installing from a CD, or the files are already extracted, go to “Installing from CD-ROM or downloaded files” on page 16.

To install the electronic images of WebSphere Studio Application Developer, extract the contents of the download by typing the following commands in a terminal window:

```
tar -zxvf IBMWSAppDev-5.0-0-part1.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part2.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part3.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part4.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part5.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part6.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part7.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part8.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part9.tar.gz
tar -zxvf IBMWSAppDev-5.0-0-part10.tar.gz
```

This will create a subdirectory called IBMWSAppDev-5.0-0 which contains the files you need to install the product.

There are ten downloadable parts for WebSphere Studio Application Developer for Linux<sup>™</sup>. All parts are gzipped tar files. You must install the first five; the rest are optional. The following is a description of each part:

- WebSphere Studio Application Developer - Part 1 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 2 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 3 - REQUIRED. Contains core installation files.

- WebSphere Studio Application Developer - Part 4 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 5 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 6 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 7 - REQUIRED. Contains core installation files.
- WebSphere Studio Application Developer - Part 6 - OPTIONAL. Contains WebSphere Application Server Version 4 Runtime Test Environment files.
- WebSphere Studio Application Developer - Part 7 - OPTIONAL. Contains WebSphere Application Server - Express Version 5 Runtime Test Environment files.
- WebSphere Studio Application Developer - Part 8 - OPTIONAL. Contains the embedded messaging client and server files and Agent Controller (Linux) files. Both of these features are discussed later in this guide. **Important:** If MQSeries is already installed, do *not* install this part as the messaging and queuing client and server are a subset of the functions of the MQSeries.
- WebSphere Studio Application Developer - Part 9 - OPTIONAL. Contains Rational ClearCase LT files. This feature is discussed later in this guide.
- WebSphere Studio Application Developer - Part 10 - OPTIONAL. Contains Agent Controller (multiple platforms) files. This feature is discussed later in this guide.

---

## Installing from CD-ROM or downloaded files

WebSphere Studio Application Developer is installed on Linux from two CDs (CD1, CD2). Each CD has an `./install.sh` command to take you through the installation.

To install WebSphere Studio Application Developer, follow these steps:

1. Read “Migration and coexistence issues” on page 15 before you begin the installation procedure.
2. Log in as root and go to the directory where WebSphere Studio Application Developer package is located. If installing WebSphere Studio Application Developer from one of the installation CDs, go to the directory where the CD-ROM is mounted (for example, `/mnt/cdrom`). If installing from one of the downloaded files, go to the `IBMWSAppDev-5.0-0` sub-directory.
3. For CD1 and CD2, type the following command:  
`./install.sh`
4. Follow the on-screen instructions to select which features (such as, run-time environments, examples for Eclipse plug-in development, and Rational ClearCase SCM Team Adapter plug-in) you want installed. A summary of features to be installed is shown. If you choose *not* to install a feature now, you may install it later using the `./install.sh` command. Remember when adding features from electronic images, the images must exist on your machine.
5. Press **Enter** to start the installation.

WebSphere Studio Application Developer is installed into the `/opt/IBM/WebSphereStudio` directory.

**Notes:**

1. If you plan to use the Agent Controller, you can install the feature now or later. For more Agent Controller installation information, refer to Chapter 4, “Installing IBM Agent Controller”, on page 21.
2. If you plan to develop applications that use Java Message Service (JMS) and test them in the unit test environment that is provided with WebSphere Studio, you can install the feature now or later. For more messaging and queuing installation information, refer to Chapter 5, “Installing messaging and queuing support for the WebSphere test environment”, on page 31. **Important:** If MQSeries is already installed, do *not* install this part as the messaging and queuing client and server are a subset of the functions of the MQSeries.

---

## Starting WebSphere Studio Application Developer

To start WebSphere Studio Application Developer, follow these steps:

1. Log in as any non-root user.
2. In a command prompt, type the following command:  
`/usr/bin/wsappdev50`

The first time that you start WebSphere Studio Application Developer, a dialog box opens with the default workspace directory already prefilled. By default, your work is stored in a directory called workspace, located in the \$HOME/IBM/wsad directory.

### Tip:

- To start WebSphere Studio Application Developer with the workspace that you want without opening the dialog box, type `wsappdev50 -data workspace_name -showlocation` where *workspace\_name* is the fully-qualified directory of the workspace that you want to use. The *showlocation* argument is optional but it adds the name of the workspace to the title of the workspace.

---

## Uninstalling WebSphere Studio Application Developer on Linux

To uninstall WebSphere Studio Application Developer on Linux, follow these steps:

1. Log in as root.
2. Change to the `/opt/IBM/WebSphereStudio/` directory.
3. Uninstall WebSphere Studio Application Developer by typing:  
`./uninstall.sh`

Note that Agent Controller and your workspace will not be removed. For instructions on uninstalling Agent Controller, refer to “Uninstalling Agent Controller from Linux” on page 25.

---

## Known problems and limitations

This section covers known problems and limitations with installation and uninstallation of WebSphere Studio Application Developer for Linux. Refer to the readme file for information about problems and limitations that affect actual use of the product.

### Disk limitations

- Do not install to an HPFS network or HPFS local drive since Windows 2000 has trouble handling long file names on HPFS.

- Do not install to a Novell NetWare drive. Installation will fail on a Novell NetWare drive.

## Another WebSphere Studio configuration that offers greater function has been detected on your system

You have attempted to install one product configuration of WebSphere Studio Version 5.0 on a system that already has a different configuration of WebSphere Studio Version 5.0 that has more features. This "downgrade" scenario is not supported. For example, you cannot install WebSphere Studio Application Developer on the same system as WebSphere Studio Application Developer Integration Edition. If you want to replace the existing product configuration, uninstall it before installing the smaller product configuration.

## Missing prerequisites

If when you install WebSphere Studio Application Developer, you receive an error message that you are missing certain prerequisites, you will have to install the missing prerequisites before you can continue with the installation. The error message will list whatever prerequisites you are missing. You can use your Linux installation CDs, or the following Web site to locate the desired RPM packages: [www.rpmfind.net/](http://www.rpmfind.net/)

The following list contains the packages that are required to install WebSphere Studio Application Developer on Linux.

- |                       |   |
|-----------------------|---|
| • /bin/bash           | • libpthread.so.0                         |
| • /bin/ksh            | • libSM.so.6                              |
| • /bin/sh             | • libstdc++-libc6.1-1.so.2                |
| • ld-linux.so.2       | • libstdc++-libc6.2-2.so.3                |
| • libcrypt.so.1       | • libX11.so.6                             |
| • libc.so.6           | • libXext.so.6                            |
| • libdl.so.2          | • libXi.so.6                              |
| • libgdk-1.2.so.0     | • libXp.so.6                              |
| • libglib-1.2.so.0    | • libXt.so.6                              |
| • libgmodule-1.2.so.0 | • libXtst.so.6                            |
| • libgtk-1.2.so.0     | • rpmlib(CompressedFileNames) <= 3.0.4-1  |
| • libICE.so.6         | • rpmlib(PayloadFilesHavePrefix) <= 4.0-1 |
| • libm.so.6           | • /usr/bin/ksh                            |
| • libnsl.so.1         |   |

The following list contains the packages that are required to install Agent Controller.

- |                 |   |
|-----------------|---|
| • /bin/sh       | • libpthread.so.0                         |
| • ld-linux.so.2 | • libstdc++-libc6.2-2.so.3                |
| • libc.so.6     | • rpmlib(CompressedFileNames) <= 3.0.4-1  |
| • libdl.so.2    | • rpmlib(PayloadFilesHavePrefix) <= 4.0-1 |
| • libm.so.6     |   |

## **KORN Shell (ksh) need to be installed before installing WebSphere Studio**

If the install fails because the KORN Shell (ksh) RPM package cannot be found, perform the following steps:

1. Get the KORN Shell RPM package, either:
  - From the Linux installation CDs, or
  - From the rpmfind web site at [www.rpmfind.net/](http://www.rpmfind.net/) do the following:
    - a. Search for pdksh (public domain KORN Shell).
    - b. Download the pdksh\*.rpm file that matches the distribution, the version, and the architecture of the Linux that you have installed.
2. Login as root user.
3. Change to the directory where the RPM package resides.
4. Install the required software by typing: `rpm -U pdksh-*.rpm`
5. Complete the product install by running the `install.sh` again.





---

## Chapter 4. Installing IBM Agent Controller

Agent Controller is a daemon process that provides the mechanism by which client applications either launch new host processes, or attach to agents that coexist within existing host processes. Agent Controller is used for remote deploy, remote WebSphere<sup>(R)</sup> log retrieval, logging, distributed profiling and debugging processes.

Agent Controller is no longer installed automatically when you install WebSphere Studio. You must install it manually before you can use the following tools:

- Profiling tools to profile your applications. If you are profiling an application locally, Agent Controller must be installed on the local system. If you are profiling an application remotely, Agent Controller must be installed on the remote system.
- Logging tools to import remote WebSphere activity log files. Agent Controller must be installed on the local system as well as on the remote system from where the log files are imported.
- Component Test tool to run testcases. Agent Controller must be installed on the systems on which you run the testcases.
- Server tools to remotely test your applications. (Agent Controller does not have to be installed for remote publishing of applications; or for local application publishing or testing.)

### Notes:

1. For remote server support, you *must* upgrade Agent Controller Version 4.0.x to Agent Controller Version 5. However, if you already have an earlier copy of Agent Controller Version 5 installed, an upgrade to Agent Controller Version 5 is recommended to pick up the latest changes.
2. For information about installing fixes to Agent Controller, consult the product support site at [www.ibm.com/software/awdtools/studioappdev/support/](http://www.ibm.com/software/awdtools/studioappdev/support/)
3. It is highly recommended to install Agent Controller behind a firewall.
4. Agent Controller has no network security function on z/OS<sup>(TM)</sup> or iSeries<sup>(TM)</sup>.
5. For more information on the security implications of using Agent Controller, refer to Agent Controller documentation that comes with the product.

---

## Installing and uninstalling Agent Controller on Windows

To install Agent Controller from the WebSphere Studio Application Developer installation CD:

1. If autorun is disabled on your system, run `setup.exe` from the root of the CD drive.
2. Log in as an administrator.
3. The Services window (**Start > Settings > Control Panel > Administrative Tools > Services**) should not be open. If it is open, Agent Controller cannot be installed.
4. From the WebSphere Studio Installation Launcher window, select **Install IBM Agent Controller**.
5. Follow the on-screen instructions. Here are some considerations when installing Agent Controller:

- By default, Agent Controller is installed in the *system\_drive*\Program Files\IBM\IBM Agent Controller\ directory (where *system\_drive* is the hard drive where Windows<sup>(R)</sup> is installed).
- On the Java Runtime Environment page of the wizard, you must specify the location of the Java runtime file (java.exe). For example, if the java.exe file is located in the directory c:\jdk\bin, specify c:\jdk\bin as the folder containing the Java runtime file. If you are installing on the same computer as WebSphere Studio, this field is automatically primed with the location of the Java runtime file included with WebSphere Studio.
- On the Security page of the wizard, specify whether Agent Controller will require encrypted and authenticated communications. If security is disabled, only the host list is used to control access to Agent Controller. If security is enabled, clients are only able to connect to Agent Controller if they contain the necessary certificates to authenticate Agent Controller for Secure Socket Communications. Also, all clients are required to log in to Agent Controller.
- On the Host List page of the wizard, you specify computers can access the Agent Controller you are currently installing. Usually these are the computers where WebSphere Studio Application Developer is installed.
  - The **This computer only** radio button does not allow any computer other than this one to access Agent Controller.
  - The **Specific computers** radio button allows you to specify the host name or the network name of one or more computers that can access Agent Controller. The host names are specified as a space delimited list.
  - The **Any computer** radio button allows all computers to access Agent Controller.

By default, Agent Controller service starts automatically when it is installed and then whenever you start your system. Refer to the online help for more information about Agent Controller.

## Silent installation

To install Agent Controller silently for a secured connection:

1. If you do not have the WebSphere Studio Application Developer installation CD, then install the part of the electronic image that contains the Agent Controller as described in "Installing from the electronic image of WebSphere Studio Application Developer" on page 5.
2. In a prompt window, go to the location of the WebSphere Studio Application Developer install files, and change the CD directory to the IBM\_Agent\_Controller\windows directory.
3. Type a command that is similar to this one on one line:

```
setup.exe /s /v"/q INSTALLDIR="D:\IBM Agent Controller\" SECURITY="Enable\"
RAC_USER="smith jones\" JAVAHOME="d:\jdk1.3.1\bin\""
```

where:

- INSTALLDIR is the path where Agent Controller is installed.
- SECURITY ("Enable" or "Disable") specifies whether or not the security is enabled. (In the example, security is enabled.)
- RAC\_USER specifies which user ID can establish secured connections. These users IDs must be able to be authenticated by the operating system.
- JAVAHOME is the location of the java.exe executable. (In the example, the location is d:\jdk1.3.1\bin.)

To install Agent Controller silently for an unsecured connection:

1. If you do not have the WebSphere Studio Application Developer installation CD, then install the part of the electronic image that contains the Agent Controller as described in "Installing from the electronic image of WebSphere Studio Application Developer" on page 5.
2. In a prompt window, go to the location of the WebSphere Studio Application Developer install files, and change the CD directory to the IBM\_Agent\_Controller\windows directory.
3. Type a command that is similar to this one on one line:

```
setup.exe /s /v"/q INSTALLDIR="D:\IBM Agent Controller\" SECURITY="Disable"
RAC_ALLOW="CUSTOM\" RAC_HOSTS="bomberman swallow\" JAVAHOME=
"d:\jdk1.3.1\bin\""
```

where:

- INSTALLDIR is the path where Agent Controller is installed.
- SECURITY ("Enable" or "Disable") specifies whether the security is enabled or not. (In the example, security is disabled.)
- RAC\_ALLOW ("ALL", "LOCAL" or "CUSTOM") specifies which computers can access Agent Controller. "ALL" allows any computer to connect. "LOCAL" allows only this computer to connect. "CUSTOM" allows the list of hosts to connect. Use "CUSTOM" with the "RAC\_HOST" argument.
- RAC\_HOSTS (use only if RAC\_ALLOW="CUSTOM") specifies which host names can connect to Agent Controller.
- JAVAHOME is the location of the java.exe executable. (In the example, the location is d:\jdk1.3.1\bin.)

## Upgrading Agent Controller

To upgrade Agent Controller:

1. Shut down the Workbench Studio.
2. Run setup program setup.exe from the CD under the IBM\_Agent\_Controller\windows directory.
3. Follow the on-screen instruction as described under the section "Installing and uninstalling Agent Controller on Windows" on page 21.

The upgrade is performed if the version installed on the system is older than the version on the CD.

## Uninstalling Agent Controller from Windows

To uninstall Agent Controller:

1. Shut down the Workbench Studio.
2. Open the Add/Remove Programs window and remove IBM Agent Controller.

If Agent Controller fails to uninstall successfully, there may be Java processes which contain either the Java Profiling Agent or the J2EE Request Profiler still running. These processes should be terminated before the uninstall will complete successfully. For more information about listing the processes and then terminating them, refer to the online help for Application Profiling.

### Silent uninstall

To uninstall Agent Controller silently, in a Prompt window, type:

```
msiexec /x {RACPRODID} /qn
```

where *RACPRODID* is the product code of Agent Controller that is found in the registry (HKEY\_LOCAL\_MACHINE\SOFTWARE\IBM\IBM Agent Controller\ProductCode).

For example, to uninstall Agent Controller Version 5.0.1, type:

```
msiexec /x {F0447F5E-F042-4E37-AD4B-BC7BE4E6FFF7} /qn
```

---

## Installing, upgrading, and uninstalling Agent Controller on Linux

To install or upgrade Agent Controller:

1. Log in as root and go to the directory where Agent Controller RPM installation package that you transferred is located.

2. For Linux on Intel, enter the following commands:

```
rpm -U gsk5bas-5.0-5.65.i386.rpm -U ibmrac-5.0.1-0.i386.rpm
```

For Linux on z/OS, enter the following commands:

```
rpm -U gsk5bas-5.0-5.65.s390.rpm -U ibmrac-5.0.1-0.s390.rpm
```

3. After you have installed Agent Controller, change the directory to the installed location's bin directory `/opt/IBMRAC/bin`, and run the setup script by typing `./SetConfig.sh`
4. Reply to the following prompts:
  - a. For the **IBM Agent Controller installed location:** prompt, type the location of Agent Controller (for example, `/opt/IBMRAC`).
  - b. For the **Specify where the Java Runtime file (java) is located:** prompt, type the location where the Java file can be found (for example, `/opt/IBMJava2-131/bin`).
  - c. For the **WebSphere Application Server V5 installed location:** prompt, type the location of WebSphere Application Server version 5, if it is installed (for example, `/opt/WebSphere/AppServer`). You can leave this blank.
  - d. For the **GSK installed location:** prompt, type the location of the Global Security Kit (GSKit) (for example, `/usr/local/ibm/gsk5`).
  - e. For the **Security (yes/no):** prompt, specify whether or not you want to enable the security feature.
  - f. If security is enabled, for the **Secured users IDs (separated by spaces):** prompt, type the user log in names on the system who are granted access to Agent Controller. The operating system must be able to authenticate these user log in names. For more information, refer to "Using Agent Controller security feature" on page 28.
  - g. For the **Allow hosts (ALL/LOCAL/CUSTOM):** prompt, specify which computers can access Agent Controller. To allow only this computer, type LOCAL. To allow any computer to connect, type ALL. To specify a list of computers, type CUSTOM.
  - h. If CUSTOM is selected, for the **Allowed host names (separated by spaces):** prompt, type the host names which can access Agent Controller. Host names do not have to be fully qualified. You may also specify IP addresses.
5. Start the server by opening the `/opt/IBMRAC/bin` directory and issuing the command:  
`./RAStart.sh`

To stop the server, open the `/opt/IBMRAC/bin` directory, and issue the command:

```
./RAStop.sh
```

Refer to the online help for more information about Agent Controller.

## Uninstalling Agent Controller from Linux

To uninstall Agent Controller, log in as root and issue the command:

```
rpm -e ibmrac-5.0.1-0
```

---

## Installing and uninstalling Agent Controller on a separate computer

If you want to install Agent Controller on a separate computer, you must first transfer the appropriate installation program as a binary file to the target computer using a file transfer program such as ftp. Once the installation program has been transferred to the target computer you can follow the instructions below for the appropriate operating system.

Read the introduction to the previous section for reasons to install Agent Controller. Refer to the online help for more information about Agent Controller.

### Installing on Windows

To install Agent Controller on a separate Windows system, follow the steps described in “Installing and uninstalling Agent Controller on Windows” on page 21.

### Installing on Linux

To install Agent Controller on a separate Linux system, follow the steps described in “Installing, upgrading, and uninstalling Agent Controller on Linux” on page 24.

## Installing, upgrading, and uninstalling on Solaris, HP, or AIX

**Note:** If you want to profile your applications on Solaris, ensure that Java development kit 1.3.0 or higher is installed.

To install or upgrade Agent Controller on a separate Solaris, HP, or AIX<sup>(R)</sup> system, follow these steps:

1. Ensure that the Java development kit 1.3.0 or higher is installed.
2. Log in as root and go to the directory where Agent Controller setup.jar installation package that you transferred is located.
3. Issue the command:

```
java -Djava.compiler=NONE -jar setup.jar
```
4. Follow the on-screen instructions. Here are some considerations when installing Agent Controller:
  - By default, Agent Controller is installed in /usr/IBMRAC on AIX and /opt/IBMRAC on HP and Solaris.
  - For the **Specify where the Java Runtime file (java) is located:** prompt, type the location where the Java file can be found (for example, /usr/java/jre/bin).
  - For the **WebSphere Application Server V5 installed location:** prompt, type the location of WebSphere Application Server version 5, if it is installed (for example, /usr/WebSphere/AppServer). You may leave this field blank if it is not installed.
  - On the Security page of the wizard, specify whether Agent Controller will require encrypted and authenticated communications. If security is disabled, only the host list is used to control access to Agent Controller. If security is

enabled, clients are only able to connect to Agent Controller if they contain the necessary certificates to authenticate Agent Controller for Secure Socket Communications. Also, all clients are required to log in to Agent Controller. If **Enabled** button is selected, you will be asked to enter the users that are allowed access to Agent Controller. Multiple user names must be separated by spaces.

- On the Host List page of the wizard, you specify computers can access the Agent Controller you are currently installing. Usually these are the computers where WebSphere Studio Application Developer is installed.
    - The **This computer only** radio button does not allow any computer other than this one to access Agent Controller.
    - The **Specific computers** radio button allows you to specify the host name or the network name of one or more computers that can access Agent Controller. The host names are specified as a space delimited list.
    - The **Any computer** radio button allows all computers to access Agent Controller.
5. For AIX, start the server by opening the /usr/IBMRAC/bin directory and issuing the command:
- ```
./RAStart.sh
```

For Solaris or HP, start the server by opening the /opt/IBMRAC/bin directory and issuing the command:

```
./RAStart.sh
```

To stop the server, open the /opt/IBMRAC/bin directory on HP or Solaris, or the /usr/IBMRAC/bin directory on AIX, and issue the command:

```
./RAStop.sh
```

### Uninstalling on Solaris, HP, or AIX

To uninstall Agent Controller, ensure that the Java development kit is installed and log on as root. For Solaris or HP, go to the directory /opt/IBMRAC/bin, or for AIX go to the /usr/IBMRAC/bin directory and issue the command:

```
./uninstall.sh
```

## Installing and uninstalling on z/OS

To install Agent Controller on a separate z/OS<sup>(TM)</sup> system, follow these steps:

1. In a UNIX<sup>(R)</sup> System Services shell, go to the directory where you want to install Agent Controller. We recommend you install it in the /usr/lpp/ directory.
2. Issue the following command to extract Agent Controller files:

```
pax -ppx -rzf ibmrac.os390.pax.Z
```

The files will be extracted into a subdirectory called IBMRAC.

**Note:** If you did not transfer the ibmrac.os390.pax.Z file into Agent Controller installation directory, then in the pax command include the path name of the directory where it is located.

3. After you have installed Agent Controller, change the directory to the installed location's bin directory /usr/lpp/IBMRAC/bin, and run the setup script by typing

```
./SetConfig.sh
```
4. Reply to the following prompts:

- a. For the **IBM Agent Controller installed location:** prompt, type the location of Agent Controller (for example, /usr/lpp/IBMRAC).
  - b. For the **Specify where the Java Runtime file (java) is located:** prompt, type the location where the java.exe file is located (for example, /usr/lpp/java/IBM/J1.3/bin).
  - c. For the **WebSphere Application Server V5 installed location:** prompt, type the location of WebSphere Application Server version 5, if it is installed (for example, /usr/lpp/WebSphere/AppServer). You can leave this blank.
  - d. For the **Security (yes/no):** prompt, type no since the security feature is not supported.
  - e. For the **Allow hosts (ALL/LOCAL/CUSTOM):** prompt, specify which computers can access Agent Controller. To allow only this computer, type LOCAL. To allow any computer to connect, type ALL. To specify a list of computers, type CUSTOM.
  - f. If CUSTOM is selected, for the **Allowed host names (separated by spaces):** prompt, type the host names which can access Agent Controller. Host names do not have to be fully qualified. You may also specify IP addresses.
5. To profile programs running on WebSphere Application Server you must do the following:
    - a. Go to the /usr/lpp/IBMRAC/bin directory and issue the command:  
`./makelinks.sh`
    - b. Make Agent Controller shared object files program controlled by issuing the following command in a UNIX System Services shell:  
`extattr +p /usr/lpp/IBMRAC/lib/*.so`

**Note:** To issue this command, you must have at least READ access to the BPX.FILEATTR.PROGCTL FACILITY class. For more information, refer to the *z/OS UNIX System Services Planning* book.
  6. Start the server by logging in as root, opening the /usr/lpp/IBMRAC/bin directory and issuing the command:  
`./RAStart.sh`

To stop the server, log in as root, open the /usr/lpp/IBMRAC/bin directory, and issue the command:

`./RAStop.sh`

## Upgrading Agent Controller

There is no upgrade capability. However, you may uninstall the version currently on the system and perform the installation steps described in “Installing and uninstalling on z/OS” on page 26.

## Uninstalling on z/OS

To uninstall Agent Controller, follow these steps:

1. If you ran makelinks.sh when installing Agent Controller, then go to the /usr/lpp/IBMRAC/bin directory and issue the command:  
`./removelinks.sh`
2. Remove the IBMRAC directory and all of its sub-directories by issuing the following command:  
`rm -rf /usr/lpp/IBMRAC`



## Installing and uninstalling on iSeries

To install Agent Controller on an iSeries<sup>™</sup> system, follow these steps:

1. On the iSeries host, create a library called IBMRAC.
2. In the IBMRAC library, create an empty save file called IBMRAC.SAVF.  
**Note for iSeries V5R2 only:** In the IBMRAC library, create an empty save file called PROFILER.SAVF.
3. FTP the file IBMRAC.SAVF to the library IBMRAC using BINARY mode transfer.  
**Note for iSeries V5R2 only:** FTP the file PROFILER.SAVF to the library IBMRAC using BINARY mode transfer.
4. Restore the save file IBMRAC.SAVF to the library IBMRAC.  
**Note for iSeries V5R2 only:** Restore the save file PROFILER.SAVF to the library IBMRAC.
5. Create, on the IFS, the /opt/IBMRAC directory.
6. Restore the save file config.savf in IBMRAC to the IFS directory /opt/IBMRAC.  
For example,  

```
RST DEV('/QSYS.LIB/IBMRAC.LIB/CONFIG.FILE') OBJ('/opt/IBMRAC/*')
```
7. Add the IBMRAC library to the library list entry:  

```
ADDLIBLE IBMRAC
```
8. To start Agent Controller, type the following command:  

```
SBMJOB CMD(CALL RASERVER) JOBD(RASTART)
```

To stop Agent Controller, type:

```
ENDJOB JOB(RASTART)
```

### Upgrading Agent Controller

There is no upgrade capability. However, you may uninstall the version currently on the system and perform the installation steps described in “Installing and uninstalling on iSeries”.

### Uninstalling on iSeries

To uninstall Agent Controller on iSeries, remove the IBMRAC library and the IFS directory /opt/IBMRAC (including all subdirectories and files).

---

## Using Agent Controller security feature

The following list contains hints and tips for using Agent Controller security feature:

- Authentication is provided by the operating system. Only users specified at installation time will be allowed to authenticate. If the user name ANY is provided, any valid user name and password pairs will be forwarded to the operation system for authentication, otherwise only listed pairs will be forwarded.
- At installation time the default behavior, when security is enabled, is to require the users you specified to authenticate with the operating system before any information can be exchanged with Agent Controller. The workbench user must provide a valid user name and password combination that is an operating system user name and password.
- **Windows** Domain name passwords will not be authenticated. You must provide local user name and password pairs.



- Key management is provided by the IBM Global Security Toolkit (GSKit). You can use the ikeyman tool to manage your certificates.
- By default, the key database and password stash files are in the Agent Controller \security directory. If you wish to point to a different key database or key stash file this can be achieved by editing the serviceconfig.xml file.
- To import certificates, select **File > Import** and then select the **Security Certificate**.

---

## Known problems and limitations

This section covers known problems and limitations related to installing and uninstalling Agent Controller. Except where otherwise noted, the following information applies to all operating systems that are supported for Agent Controller.

### Agent Controller may fail to start on AIX or z/OS

Agent Controller may fail to start on AIX or z/OS with the following message:  
RAServer failed to start.

This is usually caused either if TCP/IP port 10002 is being used by another process running on the system, or if Agent Controller was just stopped.

**Work around:** If port 10002 is being used by another process you can change the port number by editing the serviceconfig.xml file. This is described in the documentation.

### Setup will upgrade Windows Installer to 2.0

**Windows** If the Windows Installer is older than 2.0, setup will automatically upgrade it. This will require a reboot. The Agent Controller installation will resume automatically after system reboot.

### Error 1920 during installation

**Windows** If you encounter Windows Installer error 1920 during installation, there is a problem starting the IBM Agent Controller service. Do the following:

1. Cancel the IBM Agent Controller setup.
2. Uninstall the IBM Agent Controller from the Add/Remove program dialog.
3. Open Windows' Task Manager window and terminate any "NTVDM.exe" and "wowexec.exe" processes.
4. Navigate to the GSK install directory on the CD (or the ESD image) under "IBM\_Agent\_Controller\windows\gsk". Run setup.exe and an error dialog should come up. Dismiss the dialog.
5. Reinstall the IBM Agent Controller from the CD (or the ESD image) under "IBM\_Agent\_Controller\windows", or by re-inserting the CD
6. In some cases, if the cancellation of the Install was unsuccessful, you will need to reboot the machine.

This won't happen if security is disabled.

Sometimes, it is caused by the existence of a file called *Program* under the system drive. For example, if Windows is installed under the D: drive, the existence of a file called *Program* under D:\ will stop the Agent Controller service from starting if it is installed under the default location D:\Program Files\IBM\IBM Agent

Controller. This is because Windows is trying to start the Agent Controller service as D:\Program with a parameter *Files\IBM\IBM Agent Controller\bin\RA Server.exe*, which is not correct. You can work around this problem by performing one of the following:

1. Remove or rename the file called *Program*.
2. Install Agent Controller using a directory without spaces (for example, D:\IBM\_Agent\_Controller).
3. Add double quotes around the Agent Controller executable name in the Windows registry under the key name HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\IBM Agent Controller\ImagePath. For example, "D:\Program Files\IBM\IBM Agent Controller\bin\RA Server.exe".

## **Other errors during installation and uninstallation**

If you encounter errors during installation or uninstallation, this may be due to the fact that the object files of Agent Controller are loaded by running processes. To ensure the object files can be modified, do the following:

1. Shut down the workbench.
2. Terminate all java.exe processes which contain either the Java Profiling Agent or the J2EE Request Profiler.
3. Close the Services window.

---

## Chapter 5. Installing messaging and queuing support for the WebSphere test environment

**Important:** WebSphere Studio Application Developer must already be installed before you install the messaging and queuing feature.

You do not need to install this feature if any of the following conditions is true:

- You are not building any applications that use Java Message Service (JMS).
- You plan to test your JMS applications on a local or remote version of WebSphere Application Server that already has the embedded messaging feature installed.
- You plan to test on WebSphere MQ (formerly known as MQSeries<sup>(R)</sup>).

If you want to test your JMS applications in the WebSphere test environment (the unit test environment that comes with WebSphere Studio Application Developer) using embedded messaging, you must install the additional messaging function that is included with this product. This is the same embedded messaging feature that is provided with IBM WebSphere Application Server.

You require 100 MB minimum disk space to successfully install the messaging and queuing feature.

**Important:** If MQSeries is already installed on the machine, do *not* install the messaging and queuing client and server as they are a subset of the functions of the MQSeries.

---

### Installing and uninstalling the messaging and queuing support on Windows

Installing messaging and queuing support from the WebSphere Studio Application Developer installation CD installs both WebSphere MQ and WebSphere Messaging Publish and Subscribe. Note the following limitations:

- If one (and only one) of these components is detected on your system during the install from the WebSphere Studio Application Developer installation CD, the install will fail. To avoid this failure, you must uninstall the component which is already on your system before installing messaging and queuing support from the WebSphere Studio Application Developer installation CD.
- If current versions of both WebSphere MQ and WebSphere Messaging Publish and Subscribe already exist on your system, the install of messaging and queuing support from the WebSphere Studio Application Developer installation CD only configures both components correctly.
- If both WebSphere MQ and WebSphere Messaging Publish and Subscribe already exist on your system, but do not match the versions as provided on the WebSphere Studio Application Developer installation CD, you must uninstall both components before proceeding with the install of messaging and queuing support from the WebSphere Studio Application Developer installation CD.

#### Installing from CD-ROM

To install the embedded messaging feature for use with WebSphere test environment:

1. Stop WebSphere Studio Application Developer.
2. Insert the WebSphere Studio Application Developer installation CD.
3. If autorun is disabled on your system, run **setup.exe** from the root of the CD drive.
4. Select **Install embedded messaging client and server** from the Installation Launcher window and follow the on-screen instructions.

By default, this code is installed in the *system\_drive*\Program Files\IBM\WebSphere MQ\ directory. A queue manager is created during the installation.

### Silent installation

To install the embedded messaging feature silently:

1. Stop WebSphere Studio Application Developer.
2. Insert the WebSphere Studio Application Developer installation CD.
3. Copy all the files on both of the WebSphere Studio Application Developer CDs to a single temporary directory on your machine.
4. From the root of the temporary directory, type the following command on one line:

```
\IBM_Embedded_MQ\messaging\server\Setup\wmsetup.exe /install <MQ_Instdir>
"<temporary_dir>\IBM_Embedded_MQ\messaging\server" "C:\EmbeddedMQ.log"
<language_id>
```

where *MQ\_Instdir* is the directory where the embedded messaging feature is installed, *temporary\_dir* is the root of the temporary directory, and *language\_id* is the supported national language for the user interface and documentation. The following table lists the valid language IDs.

**Table 1. List of valid language IDs.**

| Language             | Language ID |
|----------------------|-------------|
| Brazilian Portuguese | 1046        |
| English (US)         | 1033        |
| French               | 1036        |
| German               | 1031        |
| Italian              | 1040        |
| Japanese             | 1041        |
| Korean               | 1042        |
| Simplified Chinese   | 2052        |
| Spanish              | 1034        |
| Traditional Chinese  | 1028        |

5. Then type:  

```
\IBM_Embedded_MQ\setup.exe /s /v"/qn
```

## Uninstalling the messaging and queuing support

To uninstall the embedded messaging feature:

1. Stop WebSphere Studio Application Developer.
2. From the Add/Remove Programs window, select **embedded messaging client and server**, and then click **Remove**.

3. Select **IBM WebSphere MQ**, and then click **Remove**.
4. Select **IBM WebSphere EMPS**, and then click **Remove**.

Alternatively, you can uninstall the embedded messaging feature by using the product CD and running **setup.exe**. If the installation program detects the embedded messaging feature on the system, the Removal pane opens and removes it. However, if the installation program does not detect the embedded messaging feature on the system, the embedded messaging feature will be installed.

---

## Installing and uninstalling the messaging and queuing support on Linux

Installing messaging and queuing support from the WebSphere Studio Application Developer installation CD installs both WebSphere MQ and WebSphere Messaging Publish and Subscribe. Note the following limitations:

- If one (and only one) of these components is detected on your system during the install from the WebSphere Studio Application Developer installation CD, the install will fail. To avoid this failure, you must uninstall the component which is already on your system before installing messaging and queuing support from the WebSphere Studio Application Developer installation CD.
- If current versions of both WebSphere MQ and WebSphere Messaging Publish and Subscribe already exist on your system, the install of messaging and queuing support from the WebSphere Studio Application Developer installation CD only configures both components correctly.
- If both WebSphere MQ and WebSphere Messaging Publish and Subscribe already exist on your system, but do not match the versions as provided on the WebSphere Studio Application Developer installation CD, you must uninstall both components before proceeding with the install of messaging and queuing support from the WebSphere Studio Application Developer installation CD.

### Installing the messaging and queuing support

Prior to installing the messaging and queuing support, you need to create two user groups (mqm and mqbrkrs), add the default user to each group, and then add the root to each group.

1. Log in as the root user.
2. In a terminal window, type the following command to create the mqm user group:  
`groupadd mqm`
3. Create the mqbrkrs user group:  
`groupadd mqbrkrs`
4. Create a user ID mqm with default group mqm:  
`useradd mqm -g mqm`
5. Create a user ID mqbrkrs with default group mqbrkrs:  
`useradd mqbrkrs -g mqbrkrs`
6. Add the user root to the mqm and mqbrkrs user groups:
  - a. Edit the `/etc/group` file.
  - b. Locate the `mqm:x:101:mqm` line and change it to `mqm:x:101:mqm,root`
  - c. Locate the `mqbrkrs:x:102:mqbrkrs` line and change it to `mqbrkrs:x:102:mqbrkrs,root`
  - d. Close the file and save the changes.
7. Log off and then back in as the root.

8. Insert the WebSphere Studio Application Developer installation CD and go to the CD-ROM directory.
9. To install the embedded messaging feature, type:  
`./IBM_Embedded_MQ/messaging/install.sh`

## **Uninstalling the messaging and queuing support**

To uninstall the messaging and queuing feature:

1. Log in as the root user.
2. Insert the WebSphere Studio Application Developer installation CD and go to the CD-ROM directory.
3. Type:  
`./IBM_Embedded_MQ/messaging/uninstall.sh`

If installation fails, check the log file (/tmp/wmsetup.log).

---

## Chapter 6. Setting up WebSphere Studio for working in a team environment

By default, Concurrent Versions System (CVS) plug-ins are automatically installed. However, you can still choose between CVS and Rational<sup>(R)</sup> ClearCase<sup>(R)</sup> as your software configuration management (SCM) system. To use Rational ClearCase, install the Rational ClearCase SCM Adapter plug-in that comes with WebSphere Studio Application Developer. Several other SCM repositories can be integrated with WebSphere Studio Application Developer through SCM team adapters (known in Eclipse as team providers). Vendors of other SCM systems provide SCM team adapters for WebSphere Studio. To find a list of SCM products and adapters provided by IBM Business Partners, go to [www-3.ibm.com/software/awdtools/studioappdev/about/](http://www-3.ibm.com/software/awdtools/studioappdev/about/) and from the **Further reading** section select **SCM Adaptor Vendors**. From this list, you can access the SCM product vendors' Web sites to download the SCM adapters of your choice. IBM does not endorse or warrant these adapters. For support, or further information, please contact the SCM product vendor directly.

Neither CVS nor Rational ClearCase client or server is automatically installed. You must install them manually after the WebSphere Studio Application Developer installation is complete.

The most recent version of the CVS server is available from [www.cvshome.org](http://www.cvshome.org). You do not need to install a CVS client to use CVS, only a CVS server. For more information about installing and using CVS, refer to the team online help. Also, there is an article about CVS team support in WebSphere Studio Application Developer at [www.ibm.com/websphere/developer/library/techarticles/0108\\_karasiuk/0108\\_karasiuk.html](http://www.ibm.com/websphere/developer/library/techarticles/0108_karasiuk/0108_karasiuk.html)

---

### Supported software

The Rational ClearCase SCM adapter requires ClearCase 4.2 or later (full ClearCase or ClearCase LT) with the latest patches. Refer to the following table for the patch that is appropriate for your version of ClearCase:

**Table 2. Some available patches for Rational ClearCase**

| Rational ClearCase version  | Patch required                          |
|-----------------------------|-----------------------------------------|
| 4.2 (full ClearCase)        | clearcase_p4.2.NT-14 or later           |
| 4.2 (ClearCase LT)          | clearcase_lt_p2001A.04.00.NT-8 or later |
| 2002.05.00 (Full ClearCase) | clearcase_p2002.05.00.NT-7 or later     |
| 2002.05.00 (ClearCase LT)   | ClearCase LT 2002.05.20 or later        |

When you perform ClearCase **Deliver**, **Rebase**, or **Merge** UCM operations, the ClearCase SCM adapter automatically refreshes any resources that have been affected. Note that you need the following patch to obtain this functionality: clearcase\_p2002.05.00-NT-18 (or later) for full ClearCase.

To obtain ClearCase releases and patches, go to [clearcase.rational.com](http://clearcase.rational.com) or call Rational Support at 1-800-433-5444.

**Note:** Rational Software does not support the use of Windows XP Pro with ClearCase LT 4.2.

---

## Installing Rational ClearCase LT

Rational ClearCase LT 2002.05.20 is included with WebSphere Studio Application Developer. For a list of the platforms that Rational ClearCase LT supports, see the *Rational ClearCase LT Release Notes* (Rational\_ClearCase\_LT/cc\_relnotes.pdf).

Before installing Rational ClearCase, it is recommended that you read the installation instructions located in *Rational ClearCase LT Installation Guide* (Rational\_ClearCase\_LT/cc\_install.pdf).

To install the client and server code for Rational ClearCase LT from the WebSphere Studio Application Developer installation CD follow the instructions below. Complete installation instructions are found in the *Rational ClearCase LT Installation Guide*.

**Windows** To install Rational ClearCase LT on Windows:

1. If autorun is disabled on your system, run setup.exe from the root of the CD drive.
2. From the WebSphere Studio Installation Launcher window, select **Install Rational ClearCase LT**.
3. Follow the on-screen instructions. A warning appears saying that you have not configured licensing for this product. Click **OK** to install without licensing configured. By default, Rational ClearCase is installed in the c:\Program Files\Rational\ClearCase\ directory.

**Linux** To install Rational ClearCase LT on Linux:

1. Switch to root user by typing: su -
2. From the Rational\_ClearCase\_LT directory, extract the contents of 2002.05.20\_lt\_rhat\_x86\_tar.Z to your release area. For an explanation of the purpose of a release area, see the *Rational ClearCase LT Installation Guide*.  
mkdir /usr/ccase\_lt\_rls  
tar xzf 2002.05.20\_lt\_rhat\_x86\_tar.Z -C /usr/ccase\_lt\_rls
3. Prepare your release area by running site\_prep and follow the instructions:  
cd /usr/ccase\_lt\_rls/2002.05.20\_lt/rhat\_x86/install  
./site\_prep
4. If asked to provide the ClearCase LT license host, specify the hostname of machine.
5. Install ClearCase by running install\_release and follow the instructions:  
./install\_release
6. Add the ClearCase directory to your path, see section 3.6 of the *Rational ClearCase Installation Guide* for detailed instructions.  
If you are using a Bourne shell, you can run the following command to modify your path:  
PATH=\${PATH}:/usr/atria/bin  
export PATH
7. If you have not already installed WebSphere Studio Application Developer, do so now.
8. Verify that ClearCase has been installed correctly, run the following from a non-root user ID. If an error message is returned, consult the Rational documentation.



```
cleartool hostinfo -long
```

Otherwise the installation is now complete.

---

## Configuring Rational ClearCase LT licensing

When you have WebSphere Studio Application Developer installed on the same computer as Rational ClearCase LT, you do not need to configure ClearCase LT licensing. However, if you install Rational ClearCase LT without WebSphere Studio Application Developer, then you will need to configure ClearCase LT Licensing. For details on how to configure licensing, see the *Rational ClearCase LT Installation Guide*.

The ClearCase LT license that is included with WebSphere Studio Application Developer does not include a license for the ClearCase Web interface. Customers who wish to use the ClearCase Web interface will need to purchase additional ClearCase or ClearCase LT licenses from Rational Software. Contact Rational for more information on obtaining licenses, 1-800-728-1212.

---

## Using Rational ClearCase with WebSphere Studio Application Developer

A white paper illustrating the integration between Rational ClearCase and WebSphere Studio Workbench can be found on the installation media, look for Rational\_ClearCase\_LT/cc\_wsappdev.pdf. Additional ClearCase documentation is found in the Rational ClearCase product and from the workbench's online help.



---

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