# Borland
# AppServer™ 6.7
## Installation Guide for RedHat Linux

**Borland**®

# Contents

# 1

# Introduction to Borland AppServer

Borland AppServer (AppServer) is a set of services and tools that enable you to build, deploy, and manage distributed enterprise applications in your corporate environment.

The AppServer is a leading implementation of the J2EE 1.4 standard, and supports the latest industry standards such as EJB 2.1, JMS 1.1, Servlet 2.4, JSP 2.0, CORBA 2.6, XML, and SOAP. Borland provides two versions of AppServer, which include leading enterprise messaging solutions for Java Messaging Service (JMS) management (Tibco and OpenJMS). You can choose the degree of functionality and services you need in AppServer, and if your needs change, it is simple to upgrade your license.

The AppServer allows you to securely deploy and manage all aspects of your distributed Java and CORBA applications that implement the J2EE 1.4 platform standard.

With AppServer, the number of server instances per installation is unlimited, so the maximum of concurrent users is unlimited.

AppServer includes:

– Implementation of J2EE 1.4.

– Apache Web Server version 2.2.3

– Borland Security, which provides a framework for securing AppServer.

– Single-point management of leading JMS management solutions included with AppServer (Tibco, and OpenJMS).

– Strong management tools for distributed components, including applications developed outside of AppServer.

### AppServer features

AppServer offers the following features:

– Support for BAS platforms (please refer to http://support.borland.com/kbcategory.jspa?categoryID=389 for a list of the platforms supported for AppServer).

– Full support for clustered topologies.

– Seamless integration with the VisiBroker ORB infrastructure.

– Integration with the Borland JBuilder integrated development environment.

– Enhanced integration with other Borland products including Borland Optimizeit Profiler and ServerTrace.

– AppServer allows existing applications to be exposed as Web Services and integrated with new applications or additional Web Services. Borland Web Services support is based on Apache Axis 1.2 technology, the next-generation Apache SOAP server that supports SOAP 1.2.

# Borland AppServer Documentation

The AppServer documentation set includes the following:

– *Borland AppServer Installation Guide*—describes how to install AppServer on your network. It is written for system administrators who are familiar with the operating systems.

– *Borland AppServer Developer's Guide*—provides detailed information about packaging, deployment, and management of distributed object-based applications in their operational environment.

– *Borland Management Console User's Guide*—provides information about using the Borland Management Console GUI.

– *Borland Security Guide*—describes Borland's framework for securing AppServer, including VisiSecure for VisiBroker for Java and VisiBroker for C++.

– Borland *VisiBroker for Java Developer's Guide*—describes how to develop VisiBroker applications in Java. It familiarizes you with configuration and management of the Visibroker ORB and how to use the programming tools. Also described is the IDL compiler, the Smart Agent, the Location, Naming and Event Services, the Object Activation Daemon (OAD), the Quality of Service (QoS), and the Interface Repository.

– Borland *VisiBroker VisiTransact Guide*—describes Borland's implementation of the OMG Object Transaction Service specification and the Borland Integrated Transaction Service components.

The documentation is typically accessed through the Help Viewer installed with your AppServer product. You can choose to view help from the standalone Help Viewer or from within a AppServer GUI tool. Both methods launch the Help Viewer in a separate window and give you access to the main Help Viewer toolbar for navigation and printing, as well as access to a navigation pane. The Help Viewer navigation pane includes a table of contents for all AppServer books and reference documentation, a thorough index, and a comprehensive search page.

The PDF books, Borland AppServer Developer's Guide and Borland Management Console User's Guide are available online at http://info.borland.com/techpubs/appserver .

## Accessing AppServer online help topics

To access the online help, use one of the following methods:

Windows

Choose Start|Programs|Borland Deployment Platform|Help Topics

or, launch the Web browser and open <AppServer_Home>/doc/index.html.

UNIX

Launch a Web browser and open <AppServer_Home>/doc/index.html.

## Accessing AppServer online help topics from within a AppServer GUI tool

To access the online help from within a AppServer GUI tool, use one of the following methods:

–  From within the Borland Management Console, choose Help|Help Topics

–  From within the Borland Deployment Descriptor Editor (DDEditor), choose Help|Help Topics

# Documentation conventions

The documentation for AppServer uses the typefaces and symbols described below to indicate special text:

| Convention | Used for |
| --- | --- |
| *italics* | Used for new terms and book titles. |
| computer | Information that the user or application provides, sample command lines and code. |
| **bold computer** | In text, bold indicates information the user types in. In code samples, bold highlights important statements. |
| [] | Optional items. |
| ... | Previous argument that can be repeated. |
| | | Two mutually exclusive choices. |

## Platform conventions

The AppServer documentation uses the following symbols to indicate platform-specific information:

| Symbol | Indicates |
| --- | --- |
| **Windows** | All supported Windows platforms. |
| **Win2003** | Windows 2003 only |
| **WinXP** | Windows XP only |
| **Win2000** | Windows 2000 only |
| **UNIX** | UNIX platforms |
| **Solaris** | Solaris only |

# Contacting Borland support

Borland offers a variety of support options. These include free services on the Internet where you can search our extensive information base and connect with other users of Borland products. In addition, you can choose from several categories of telephone support, ranging from support on installation of Borland products to fee-based, consultant-level support and detailed assistance.

For more information about Borland's support services or contacting Borland Technical Support, please see our web site at http://support.borland.com and select your geographic region.

When contacting Borland's support, be prepared to provide the following information:

– Name

– Company and site ID

– Telephone number

– Your Access ID number (U.S.A. only)

– Operating system and version

– Borland product name and version

– Any patches or service packs applied

– Client language and version (if applicable)

– Database and version (if applicable)

– Detailed description and history of the problem

– Any log files which indicate the problem

– Details of any error messages or exceptions raised

## Online resources

You can get information from any of these online sources:

**World Wide Web:** http://www.borland.com

**Online Support:** http://support.borland.com (access ID required)

## World Wide Web

Check http://www.borland.com regularly. The AppServer Product Team posts white papers, competitive analyses, answers to FAQs, sample applications, updated software, updated documentation, and information about new and existing products.

You may want to check these URLs in particular:

– http://www.borland.com/downloads/download_appserver.html (AppServer software and other files)

– http://support.borland.com (AppServer FAQs)

## Borland newsgroups

You can participate in many threaded discussion groups devoted to the AppServer. Visit http://www.borland.com/newsgroups for information about joining user-supported newsgroups for Enterprise Server and other Borland products.

Note

These newsgroups are maintained by users and are not official Borland sites.

# 2

# Planning your installation

This guide describes installation and installation-related tasks for installing Borland AppServer (AppServer) on RedHat Linux 4.0 (x86 and x64 operating systems).

Some recommendations:

– We recommend uninstalling any previous versions of Borland AppServer, or installing the new version to a different location; on a different install path.

– If you have already installed an evaluation version and have since purchased a license to use Borland AppServer on a permanent basis, you do not need to reinstall the version of the software you evaluated. You can use the License Manager (launched from the Tools menu in the Management Console) to remove your evaluation license, then add and activate your new, permanent license. For information on activating your new license, see licensing and registration section.

– You can install the Borland Management Console separately. Typically, you install AppServer on a large shared UNIX or Windows machine. We recommend you install the Management Console on any machine you use to view, modify or manage your distributed applications.

– Installing the product documentation (online Help Topics) and/or the examples is optional, however, Borland recommends you install both.

## Package contents

You can also download the Borland Software from the Borland web site:

http://www.borland.com/downloads/download_appserver.html.

For any documentation updates, refer to
http://www.borland.com/techpubs/
For documentation updates on Borland Appserver 4.x, 5.x, and 6.x versions, refer to
http://info.borland.com/techpubs/appserver/

# System requirements

For the latest information on platforms supported by AppServer and for JDK requirements, please refer to the Borland web site:

http://support.borland.com/kbcategory.jspa?categoryID=5

In addition to platform-specific requirements, the AppServer components use TCP and UDP Broadcast services to communicate. Even if you are running the components on a single machine you must have TCP and UDP services available.

## JDK

The installer contains a private JVM, purely used for the installation process. At the beginning of the installation, the installer program puts the private JVM in your system temp directory, and after the installation, this directory will be removed automatically. During the installation, you must enter a valid JVM path so that the containing program (partition, scu, etc.) can use it. You must have a valid JDK (1.4.2 or 1.5.0) for this.

For information about changing a Partition's JDK after you have completed the product installation, refer to "*Changing the JDK*" in the "*Using Partitions*" section of the *Management Console User's Guide*.

# Disk space requirements

For disk space requirements, refer to http://support.borland.com/kbcategory.jspa?categoryID=5.

**Important**

The disk space requirements can be affected by:

– operating system

– JDK

# Licensing

**Important**

License keys from previous AppServer releases are not supported for this release of AppServer.

AppServer uses the Node-locked license. These licenses are locked to the system on which they are applied and activated. You cannot copy these licenses to another system, and they cannot be accessed from an AppServer product running on another system. If you reinstall the software on the same system, you will need to reactivate the license.

AppServer node-locked licenses must be registered and activated before using the product. To apply node-locked licenses you will need the following:

– **The Serial Number and Key, or the activation file for each license.** These will arrive in an email from Borland.

– **A Borland Developer Network (BDN) account.** If you don't have an account, you will be able to create it during the registration/activation process.

– **Internet access.** This is required if you want to use the Direct or Web page methods for activating your license. This can be from any system—not necessarily the system on which your product is installed.

If you are applying a license to a remote system, you must have Telnet access to that system and some way to copy (that is, FTP) the activation file to that system.

# 3

# Installing Borland AppServer on Redhat Linux

This section describes how to install Borland AppServer (AppServer) and related components on Red Hat enterprise Linux 4.0 (X64, X86 operating systems).

**Note**

We recommend uninstalling any previous versions of AppServer, or installing the new version to a different location; on a different install path. For more information on installing multiple AppServers, see "Installing more than one AppServer instance".

**Note**

If you have already installed an evaluation version and have since purchased a license to use AppServer on a permanent basis, you do not need to reinstall the version of the software you evaluated. You can use the License Manager (launched from the Tools menu in the Management Console) to remove your evaluation license, then add and activate your new, permanent license. For information on activating your new license, see "Using the setuser tool to manage ownership".

## Preparing for installation

You can download the software from the Borland web site http://www.borland.com/downloads/download_appserver.html.

Before you install AppServer:

1   Exit all applications.

2   Select an installation method:

– If you want to install from the command line without invoking the installer's GUI, see "Running the installer without a GUI".

– If you want to perform a silent installation using definitions from a properties file, see "Installing BAS Using Silent Installation."

## JDK

The installer installs JDK versions 1.4.2 and 1.5.0. The AppServer infrastructure and tools use JDK 1.5.0. For information about changing a Partition's JDK after you have completed the product installation, go to "Changing the JDK" in the "Using Partitions" section of the *Borland AppServer User's Guide*.

**Important**

Before installing on RedHat Linux, you must have an existing JDK (1.5.0 is supported) installed. Make sure to put the JDK `bin` directory into the path variable. To ensure that you have the right JDK version installed, you can run the `jdkpatchcheck` tool from the prompt. Navigate to the <bas_install>/etc/util directory and run the following command:

```
./jdkpatchcheck
```

For information about changing a Partition's JDK after you have completed the product installation, go to "Changing the JDK" in the "Using Partitions" section of the *Management Console User's Guide*.

**Note**

For updates on JDK requirements, please refer to the Borland web site, http://support.borland.com.

## JRE requirements for Redhat Linux download installation

If you are installing AppServer on Redhat Linux using a file downloaded from the Borland download site you need an existing JRE 1.5.0 in your environment in order to run the extracted installer file.

To check the location and version of your JRE, use the following syntax:

```
:$which java
/opt/local/bin/java
$java -version
java version "1.5.0"
```

# Installing Borland AppServer

To install AppServer and related components:

**Note**

Before you begin the installation, make sure that you have enough disk space available. In some environments, the installer reports an error calculating the disk space available for the installation. Ignore this message if you know that you have enough disk space available.

1 You can download the AppServer installer from the web. If you are installing an AppServer installer downloaded from the web, double-click the downloaded executable to start the installation.

Invoke the appropriate command to launch the installer.

```
java -cp bas-<release number>-linux-redhat-<arch>.jar install
```

where `arch`= x86 or x64

Follow the onscreen instructions. For most options, defaults offered by the installation wizard are acceptable. You can use the Previous button to return to earlier screens and change any information that is incorrect.

2 Select the product you want to install:

- **Borland AppServer with Tibco:** Installs the Borland AppServer, which includes support for integrated management of Java Messaging Services (JMS) through Tibco.

- **Borland AppServer with OpenJMS:** Installs the Borland AppServer, which includes support for integrated management of JMS through OpenJMS. Borland AppServer comes with a new install image that doesn't prompt the users to select the JMS provider. By default, it installs OpenJMS.

3 **License agreement:** Installation and use of AppServer requires acceptance of the license agreement.

4 **Choose Install Folder:** This creates a new installation of AppServer. Either accept the default (`C:\Borland\AppServer`) or choose another location.

Important

You cannot install this version of AppServer on top of previous releases.

5 **Choose Product Components:** Select from the following product components for each feature set:

- **Management Console:** GUI and tools for managing services and Partitions. For information about installing only the Management Console, see "Installing a standalone Borland Management Console".

- **Server:** All server components, such as the Partition, Apache Web server, and JDataStore.

- **Client:** Components for client applications (EJB client).

- **Documentation:** Suite of online documentation.

- **Examples:** Example applications for AppServer.

6 **Choose Install Type:** Typical/Custom panel:

a **Typical:** Express install—uses default settings. The installer generates the AppServer example configuration, which is comprised of different example Partitions, and their supporting services.

In addition, the typical installation includes the following defaults:

- **Smart Agent port:** Also known as the `osagent` port. This port is used by the ORB to communicate with the server. You can use the Management Console to change the Smart Agent port after installation is completed. The default is `14000`.

- **Management port:** The port AppServer listens to for management functionality in the Management Console. You can use the Management Console to change the Management port (sometimes referred to as the "user port") after installation is completed. The default is `42424`.

- **Agent name:** The name of the management agent which will run on your server. Every management agent using the same Management port should have a unique name. The default is the host name.

Note

The value(s) you enter for the port(s) must be valid for the installation to proceed.

- Adding the AppServer `bin` directory to your PATH variable. The typical installation does not add the AppServer `bin` folder to your PATH. To add it, choose the Custom install type.

**Note**

If you select the default, you may have to manually add certain components to your environment path.

– Adding the VisiBroker environment variables. The typical installation does not add the VisiBroker environment variables to your system environment. If you choose the Custom install type to add the VisiBroker environment variables, the installation sets the `BES_LIC_DIR` to `<install_dir>\var` and `BES_LIC_DEFAULT_DIR` to `<install_dir>\license`.

  **b** **Custom:** This option allows you to set various installation options, such as:

– Specifying Smart Agent port/Management port/Agent name to other than default values (see step 6 above for the default values).

– Specifying the path to your JDK

– Example management configuration setup. To install BAS sample management configurations, choose "Yes" (default).

– Include `bin` directory in PATH. The default is "No". To add the directory to your PATH, choose "Yes".

– Include VisiBroker environment variables. The default is "No". To add the VisiBroker environment variables to your system environment, choose "Yes". The installation sets the `BES_LIC_DIR` to `<install_dir>/var` and `BES_LIC_DEFAULT_DIR` to `<install_dir>/license`.

**7** **Pre-Installation Summary:** Review the displayed information before proceeding with the installation. You can click the Previous button to revisit and change any selections you made.

**8** To approve your choices and start installing, click the Install button.

**9** **Registration:**

– To launch the Borland Product Registration Wizard before exiting the installer, choose "Yes" (default) and click Next. The Registration Wizard launches in a separate window (see "Using the setuser tool to manage ownership"). After you dismiss the Registration Wizard, the installer completion panel displays.

If you are installing an evaluation or free version of AppServer, you are not prompted to launch the Registration Wizard. Before using AppServer, copy the license activation key file you receive by email from Borland to the `<install_dir>\license` directory. If you did not receive a license activation key file, or if you are reinstalling the software, go to

http://www.borland.com/downloads/download_appserver.html

and download a new license key.

**Important**

License keys from previous AppServer releases are not supported for this release of AppServer.

**Important**

You must register and activate your license in order to use the product.If you have a valid, node-locked license for the previous version of the Borland AppServer on the same machine where you installed the latest Borland AppServer, use the lmadm command-line tool to migrate your older license for use with the newly-installed Borland AppServer software.

**Note**

If you want to register and activate your license later, either by running the `lmadmw` executable found in the `<install_dir>\bin` directory or by launching the wizard from the Tools menu in the Management Console (see "Using the License Manager" in *Management Console User's Guide*).

**10** When the installation completes, to dismiss the installer, click Done.

You can invoke the License Administration tool from the command prompt by launching the command prompt, navigating to the bin directory and typing the following command:

```
lmadm -i console
```

## Install log

The installer generates an install log that is written to the BAS installation directory if you used a downloaded file to install AppServer.

The AppServer install log file is:

```
<install_dir>\Borland_AppServer_InstallLog.xml
```

The file is an XML formatted log with installation-specific information, such as errors.

## Product documentation

The Borland AppServer contains a complete library of online documentation. To access the documentation on a machine where the product is installed, use one of the following methods:

– At the command prompt, use the following command:

```
help
```

To recognize the `help` command, your path system variable must include the `<install_dir>\bin` directory, or you can enter the path explicitly.

– Choose Start|Programs|Borland AppServer|Help Topics

– From within the Borland Management Console, go to the Help menu

– From within the DDEditor, go to the Help menu

# Installing a standalone Borland Management Console

Borland AppServer includes a graphical user interface, called the Management Console, which acts as the focal point for managing servers and applications on your network.

The server typically runs on a large shared UNIX or Windows machine, while the Management Console runs on any machine from which users want to view or modify the distributed system. Once the Management Console is installed, you can deploy to any server on your network.

**To install a standalone Management Console:**

1 On the Choose Product Components panel, select only the Management Console.

2 On the Choose Install Type panel, choose Custom.

3 When the Configuration Settings screen appears, specify the same Management port as those specified for the server(s) you want the Management Console to support.

4 You can change the value in the Smart Agent port field.

5 Complete the installation as described in "Installing Borland AppServer".

# Installing more than one AppServer instance

If you install more than one instance of AppServer on the same machine:

– Each AppServer instance must have completely different install paths; the install directories at the top level must be different.

– You must modify Management ports with unique port ID numbers to make sure container services are included with each server.

– Keep the defaults on one server, but change the defaults for all other servers so that they have unique port ID numbers.

   **Note**

   We recommend you use the Management Console to change port ID numbers.

**To change Management port numbers:**

1 Open the Borland Management Console.

2 Right-click on the Agent whose ports you want to change and select Properties.

3 Enter port numbers as needed.

**To change Web container port IDs:**

1 Open the Borland Management Console.

2 In the navigation tree, expand the Partition whose web container you want to change.

3 Right-click the web container node and select Properties. The Properties tab Service: HTTP/ node displays the connector attributes.

4 To edit port ID properties, enter the values into the table.

   For information about updating the Borland web container `server.xml`, go to the *Borland AppServer Developer's Guide* "Web components" section.

It is not necessary to install a new instance of BAS even if you want to run BAS on 2 different agents. You can make a copy of the domain information and change specific properties such as management port and agent name. To do so:

**1** Install BAS.

**2** Copy the `base` directory from `<bas_install>/var/domains/base` and rename it, for example you can call it base2 (`<bas_install>/var/domains/base2`)

**3** Change the `agent.name` property in the file `<bas_install>/var/domains/base2/adm/properties/agent.properties` to a unique name of your choice (this is the name assigned to the management agent)

**4** Change the `vbroker.agent.port` property in the file `<bas_install>/var/domains/base2/adm/properties/management_vbroker.properties` to a unique management port. (this is the management port for the agent)

**5** To start scu with the settings in base use the command:

```
scu -domain base
```

Similarly to start with the settings as specified in base2 use

```
scu -domain base2
```

# Running the installer without a GUI

The installer is capable of running in a text only mode for UNIX systems. You can invoke the installer with a parameter which specifies the UI mode.

To run the installer in text-only mode:

**1** Change directories to the folder where the installation executable file is.

```
java -cp <install_file>.jar install -i console
```

**2** When the installer launches, follow the onscreen installation panels.

**3** The installer will write to `stdout` and read from `stdin`. This allows you to `telnet` from one system to another and run the installer remotely.

# Configuring VisiTransact license variables

Before running VisiTransact, you need to set two license environment variables (`BES_LIC_DIR` and `BES_LIC_DEFAULT_DIR`). During installation, a batch script is created for you to use for setting these environment variables.

**To set the variables**:

**1** Open a command window.

**2** Change directories to `<install dir>\bin`.

**3** Determine the appropriate script for your shell.

If you are using the Korn or Bourne shell, use the following script to set environment variables:
```
vbroker.sh
```

If you are using the C shell, use the following script to set environment variables:
```
vbroker.csh
```

**4** To run the script automatically when you log in, add a command to your .profile, .cshrc, or .login file.

# Using the setuser tool to manage ownership

**Note**

The `setuser` tool replaces the functionality provided by the `iaschangeowner` script included in previous releases.

The `setuser` tool manages ownership of BAS components installed on UNIX hosts. The tool manages all aspects of ownership for these components, which includes:

– Changing the owner ID of installed BAS Agent and other components.

  For example, if you install the software as `usernameA` but `usernameB` is the intended user, you can use `setuser` with the `+o` option to change ownership of the appropriate components so `usernameB` can start the SCU process (Agent) as intended.

– Configuring BAS to execute in multi-user mode (MUM) so that different users can own multiple Managed Objects (MOs) managed by the same Agent without granting access to other MOs or BAS components they do not own.

  For example, if you have Payroll, Legal, and Human Resources departmental applications configured as separate MOs under the same Agent, you can use `setuser` with the `+m` option to grant execution permissions for each application to mutually exclusive owners without exposing other BAS privileges to either owner. While BAS is running in MUM, each user has access to only the MOs they have permission to use.

  The `setuser` tool implements defense mechanisms to secure these components by configuring the file system with appropriately restrictive ownership and access permissions.

## Usage

**Important**

This tool must be run by a superuser, and all BAS processes must be stopped before running the tool.

The `setuser` tool is in your BAS installation's `/etc/utils/` directory. Its usage is as follows:

```
setuser [-r <install-dir>] [-u <new-user>] [-g <new-group>] [+o|+m] [-h]
```

where

– `<install-dir>` is the root directory of the installation where the ownership changes are made. If not specified, the `setuser` tool's own installation location is used.

  **Note**

  The first time setuser is run, you must specify a group. For example, setuser -g +o.

– `<new-user>` is the new username for the installation (and, if enabling MUM, the default username that MOs started by the Agent run under).

– `<new-group>` is the new groupname for the installation (and, if enabling MUM, the default group name that MOs started by the Agent run under).

– `+o` changes the owner ID of the Agent and other BAS components to `<new-user>` and `<new-group>`.

– `+m` changes the owner ID of the Agent and other BAS components to `<new-user>` and `<new-group>` while simultaneously enabling the application to run in MUM, allowing each MO started by the Agent to retain its configured ownership.

- - `-h` displays usage information for the `setuser` tool.

The `+o` and `+m` options are mutually exclusive: either use `+o` to configure the installation to simply execute BAS components under a different owner, or use `+m` to enable MUM.

The `-u` and `-g` options are optional.

### Examples

- Changing ownership of the BAS installation found in `/Borland/AppServer` to `usernameB`:

        setuser -r /Borland/AppServer -u usernameB -g admins +o

- Enabling BAS to run in MUM without changing BAS ownership:

        setuser +m

- Disabling MUM without changing BAS ownership:

        setuser +o

## Changing the ownership of an installation and supporting files

**Note**

Subsequently, running `setuser` with the `+o` option to change ownership after using the `+m` option disables MUM. To enable MUM and change ownership of the installation at the same time, use the `+m` option only (see "Enabling multi-user mode (MUM)").

When you need to change the ID an installation's Agent runs under, use the `setuser` tool with the `+o` option. The tool changes the owner ID and reconfigures the necessary file ownerships (log files, property files, configuration files, and so forth). For example:

    setuser -r /borland/myBAS/ -u usernameC -g admins +o

changes the user and group under which the BAS installation found in `/borland/myBAS` executes to `usernameC` and `admins`, respectively. The `+o` option tells the tool that the new user and group name will be used as the new owner ID of BAS.

**To change ownership of the installation and its supporting files**:

1  Stop all running Configurations.

2  Stop all running BAS processes.

3  Open a command shell and become root.

4  Run the `setuser` tool with the `+o` option, specifying the username and groupname of a new owner who has superuser privileges on the host. For example:

        setuser -r /borland/myBAS/ -u usernameC -g admins +o

5  Restart the SCU process.

6  Restart Configurations as required.

## Enabling multi-user mode (MUM)

**Important**

If you are configuring a remote script or application to run under MUM, the MO user you specify in the Configuration must have appropriate permissions on the remote filesystem to load and execute the script or application. For security, other users should not have access to the remote script or application's filesystem.

If you add or modify configurations under an Agent that is already running in MUM, you need to rerun `setuser` with the `+m` option to enable the new or modified Configurations to run in MUM.

Multi-user mode configures BAS to securely support running MOs under multiple, differing user IDs. Enabling MUM is in many ways a special case of changing the user ID under which the Agent executes.

When MUM is enabled for an Agent, the SCU process for the Agent must be started by root. After the SCU process starts, the running process is owned by the specified Agent owner, while the processes for each MO are owned by the configured user for the MOs or applications. If a Configuration does not specify values for Start As User or Start As Group, the MO's processes are owned by the Agent's owner.

**To enable MUM**:

1   Launch the Borland Management Console.

2   Stop all running Configurations.

3   To edit an MO's properties, right-click the applicable MO and select Properties to launch the Properties editor.

4   To change the owner and group allowed to start the MO:

   – In the Properties editor, choose the Settings tab, then click More Settings.

   – Choose the Platform Specific Settings tab.

   – Change the values for Start As Group and Start As User.

   – Click OK to save the changes and dismiss the Properties editor panels.

5   For each MO that will be executed by a different owner, repeat steps 3 and 4.

6   Stop all running BAS processes.

7   **To enable MUM**:

   a   Open a command shell and become root.

   b   Run `setuser` with the `+m` option, specifying the new owner ID (or omit the `-u` and `-g` flags to keep the existing owner ID). For example:

   ```
   setuser -r /borland/myBAS/ -u usernameC -g admins +m
   ```

8   If needed, to allow MOs to be started as root, modify `agent.config` (see "Enabling Managed Objects to start as root while running in MUM").

9   If needed, to allow JavaScripts contained in an MO to execute when the MO is started by root, modify `agent.config` (see "Enabling JavaScript support when starting Managed Objects while in MUM").

10  Become root and restart the SCU process.

   The SCU process starts under root ownership but after starting, the process is owned by the existing owner of the BAS installation, or by the new owner ID specified by the `-u` and `-g` options. Each MO's processes are owned by the owners specified in their Configurations. If a Configuration does not specify values for Start As User or Start As Group, the MO's processes are owned by the Agent's owner.

11  Restart Configurations as needed.

## Enabling Managed Objects to start as root while running in MUM

Enabling an MO to start as root might expose elevated privileges to unintended users, and should only be implemented for MOs that *must* be started as root to provide required functionality (for example, enabling Apache to allow privileged port access). To prevent accidental or malicious deployment of a root-started MO that might

compromise system security, before enabling an MO to start as root, perform a security audit on the MO's executables and secure access to the system where the MO resides.

To isolate potential security exposures and simplify administration efforts, put all root-started MOs under one Agent and update its `agent.config` file to allow the MOs to start as root. Place all other MOs under a different Agent and leave its `agent.config` file unchanged to retain the default BAS behavior to disallow starting MOs as root.

Typically, to protect against unauthorized access to MOs, the Agent is prevented from starting an MO as root user. In rare cases, an MO might need to be started by root to function as intended. To override builtin protection against root-started MOs after enabling BAS to run in MUM, you need to modify `agent.config` to allow MOs to be started by root. After the MO starts under root ownership, its process ownership is defined and configured by the MO or application (for example, the Apache owner specified in the `httpd.conf` file), not by BAS.

To enable MOs to be started by a root user:

1  Stop the SCU (Agent) process.

2  Edit the `agent.mum.enable.root.mo` property in `agent.config` (found in `<install_dir>/var/domains/base/adm/properties`) as follows:

        agent.mum.enable.root.mo=true

3  Become root and restart the SCU (Agent) process.

4  Reconfigure and restart Configurations, as needed.

## Enabling JavaScript support when starting Managed Objects while in MUM

Enabling JavaScript execution for an MO started by an Agent configured for MUM might expose your system to malicious code that can run with elevated privileges. When enabling JavaScript execution for such an MO, ensure that the JavaScript has been security audited and is protected from unauthorized user access.

JavaScript execution is typically not allowed when an MO is started by an Agent configured for MUM. If any of the MOs that will run in MUM contain JavaScripts, you need to modify `agent.config` to allow those JavaScripts to run.

To enable JavaScript execution when MUM is enabled:

1  Stop the SCU (Agent) process.

2  Edit the `agent.mum.enable.jscript` property in `agent.config` (found in `<install_dir>/var/domains/base/adm/properties`) as follows:

        agent.mum.enable.jscript=true

3  Become root and restart the SCU (Agent) process.

4  Restart Configurations, as needed.

## Disabling multi-user mode

To disable MUM:

**1** Stop all running Configurations.

**2** Stop all running BAS processes.

**3** To disable MUM:

   **a** Open a command shell and become root.

   **b** Run `setuser` with the `+o` option. For example:

```
setuser -r /borland/myBAS/ +o
```

**4** If needed, to disable starting MOs as root, set the `agent.mum.enable.root.mo` property in `agent.config` to `false` (see "Enabling Managed Objects to start as root while running in MUM").

**5** If needed, to disallow JavaScripts contained in an MO to execute when the Agent is running in MUM, set the `agent.mum.enable.jscript` property in `agent.config` to `false` (see "Enabling JavaScript support when starting Managed Objects while in MUM").

**6** Restart the SCU (Agent) process.

**7** Restart Configurations, as needed.

The SCU process will start and run as the existing BAS owner ID (or the new owner ID specified by the `-u` and `-g` options). Any unique user ID information configured for individual MOs will be ignored, and the MOs are run under the Agent's owner ID.

# Borland product registration wizard

Before using AppServer, you need to register and activate the license you received for your product. The license may be in the form of an email from Borland listing one or more serial numbers and license keys, or it may be a license key file sent to you in an email from Borland.

**Important**

License keys from previous AppServer releases are not supported for this release of AppServer.

If you have already received a key file in an email from Borland for a product you purchased online or downloaded for evaluation, or if you downloaded a free version of the product, you can use the registration wizard to apply the key file, or you can copy it to the `<install_dir>\license` directory and it will be applied automatically when you restart your product.

If you have a serial number and key, you can register and activate your AppServer using one of the following registration methods:

– **Direct**. If your system is connected to the Internet, this is the simplest method. The product registration wizard guides you through all required steps and automatically activates your license for you. For more information, see "Direct registration".

– **Email**. You send your registration request via your own email account (from any system), and will receive an activation file via email that you can apply to your installation. For more information, see "Email registration".

– **Web page**. Similar to email, except you register by visiting the Borland web site. For more information, see "Web page registration".

– **Telephone**. You provide information to a Borland representative, who will send you an activation file by email or mail. For more information, see "Telephone registration".

Depending on which method you choose, you may be asked to indicate whether you have a Borland Developer Network (BDN) account. If you do not have an account, you will be prompted to create one in the product registration wizard.

If you do not choose the Direct registration method, you will receive an activation file. Simply copy this file into the `<install_dir>\license` directory and it will be applied automatically when you start your product.

Important

Editing the license.ini file (<install_dir>/var/license.ini) with a Windows-based editor such as Wordpad can add additional trailing spaces that cause your license to become invalid. This issue can be resolved by removing the additional trailing spaces. This file should not be edited; there is no valid use case that requires editing of this file.

## Direct registration

To use the Borland product registration wizard for Direct registration:

**1** Select the Direct registration method in the first wizard screen, and click Next.

**2** Indicate whether you have a BDN account, and click Next. If you do not have an account you are prompted to create one in this wizard.

**3** If applicable, enter proxy settings for you internet connection.

**4** Review the summarized information before clicking Next. The wizard monitors and displays the progress of your registration.

**5** When registration is successfully completed, click Next. Then click Finish to close the Wizard.

## Email registration

To use the Borland product registration wizard for Email registration:

**1** In the first wizard screen, select the Email registration method and click Next.

**2** Indicate whether you have a BDN account, and click Next. If you do not have an account you are prompted to create one in this wizard.

**3** Review the summarized information before clicking Next.

**4** Copy the content of the Email Registration content pane into an email message addressed to `reg@borland.com`, and click Next.

**5** To close the Wizard, click Finish. You will receive a product activation file by email.

**6** Copy the activation file into the `<install_dir>\license` directory, and it will be applied automatically when you start your product.

## Web page registration

To use the Borland product registration wizard for Web page registration:

**1** In the first wizard screen, select the Web page registration method and click Next.

**2** Copy the registration key from the Web Registration step of the wizard, then click Finish to close the Wizard.

**3** Start a web browser and open the http://reg.borland.com URL.

**4** In the registration web page, enter your BDN account information and click Login. If you do not have an account, click the Create account link (http://reg.borland.com/srs5/new_user.jsp).

**5** In the Product Registration web page, enter the Serial Number and the Registration Key (from the registration wizard) and click Continue.

3: Installing Borland AppServer on Redhat Linux    19

6 Verify the email address to which the activation file will be sent, and click Register. You will receive a product activation file by email.

7 Copy the activation file into the `<install_dir>\license` directory, and it will be applied automatically when you start your product.

## Telephone registration

To use the Borland product registration wizard for Telephone registration:

1 In the first wizard screen, select the Telephone registration method and click Next.

2 From the drop-down list, select the location that is nearest you.

3 Click Next, then click Finish to close the Wizard.

4 Dial the number for assistance by telephone and keep the information in the Phone Registration wizard screen on hand.

5 When you receive your activation file, copy it into the `<install_dir>\license` directory, and it will be applied automatically when you start your product.

# Uninstalling Borland AppServer

**Note**

The uninstaller is started in the same mode in which the product was installed. For example, if you installed the product using silent installation, the uninstall will run in a silent mode too.

**To uninstall Borland AppServer**:

1 Make sure there are no background processes (such as `osagent`) running during the uninstall.

2 Change directories to the Borland AppServer `UninstallerData` directory.

3 Enter the appropriate `uninstall` command:

```
java -cp uninstaller.jar uninstall
   [ -i console] # for console mode.
```

**Note**

This does not remove files and folders that were created after the installation.

4 After you run the `uninstall` command, check the installation directory and remove any unnecessary files and subdirectories.

**Note**

After uninstalling, there may still be files and folders stored in the user's home directory. Check the installation directory and remove any unnecessary files and subdirectories.

Note: By default, the uninstallation happens in the same mode by which you have installed

For example., if you installed using silent installation, the uninstallation happens by silent mode.

If you installed using GUI, you will have to uninstall using GUI.

# 4

# Installing BAS Using Silent Installation

This section describes procedures for installing Borland AppServer (BAS) using silent installation for RedHat Linux.

Note

For the latest platform information and system requirements for installing BAS, go to http://support.borland.com.

## JDK

Before installing on RedHat Linux, you must have an existing JDK (1.5.0 is supported) installed. Make sure to put the JDK bin directory into the path variable. For information on Java products for RedHat Linux, go to the http://java.sun.com/javase/index.jsp.

To ensure that you have the right JDK version installed, you can run the jdkpatchcheck tool from the prompt. Run the following command:

/jdkpatchcheck

The jdkpatchcheck script is located in <BAS_HOME>/etc/utils.

The optional JDK property (JVM_JDK_HOME) sets the JDK path for BAS components that host user application code, such as new Partitions (including the Standard Partition), and the application client container, "VisiClient Container". By default, the JDK used will be JDK 1.5.0 which was packaged with the product, or in the case of RedHat Linux, the first JDK found in the PATH at the time that the installer is run.

For silent installation, the optional JVM_JDK_HOME property is only used when you need to set the JDK path to a JDK other than the default version. Using a JDK other than the one installed with BAS may have unpredictable results. We highly recommend you use the JDK included with the installer.

Important

Do not remove the JDK installation that `JVM_JDK_HOME` points to before uninstalling BAS. If you remove the installed JDK, the Uninstaller will not work, since

# What is silent installation?

Silent installation is recommended for use in medium to large scale deployments. It is used to set installation configurations, one time, using the configurations for installing on multiple machines. Once the configuration file is set up the silent installation runs without user interaction.

**Important**

Using silent installation implies your consent to the BAS License Agreement.

the Uninstaller is configured to use the JDK pointed to by the `JVM_JDK_HOME` property.

## Using silent installation

**Important**

You cannot reinstall BAS over a previous installation in the same BAS installation directory, or file location. You must first uninstall any previous version before reinstalling. If you do not uninstall first, you must reinstall to another file location.

Before invoking the silent installation process, you must first create a text file that contains the properties for configuration settings, such as install directory, server name, and JDK home. Each property must be listed on its own line, terminated by a carriage return, with no blank spaces at the end of each line and no blank lines at the end of the file. See "Properties file for silent installation" for more information.

After creating the text properties file, save it as `<propertiesfile>.txt`, where `<propertiesfile>` is the filename prefix for your properties file. Now you can invoke the silent installation process using the values specified in the properties file(s).

### JDK

For RedHat Linux, only JDK 1.5.0. is installed. For IA64 architecture, Sun JDK 1.4.2 is provided. For information on Java products for RedHat, go to http://java.sun.com/javase/index.jsp .

**Important:**

Before installing on RedHat Linux, you must have an existing JDK (1.5.0 is supported) installed. Make sure to put the JDK bin directory into the path variable. To ensure that you have the right JDK version installed, you can run the jdkpatchcheck tool from the prompt. Navigate to the /etc/util directory and run the following command:

```
/jdkpatchcheck
```

The jdkpatchcheck script is located in `<BAS_HOME>/etc/utils`.

The optional JDK property `(JVM_JDK_HOME)` sets the JDK path for BAS components that host user application code, such as new Partitions (including the Standard Partition), and the application client container, "VisiClient Container". By default, the JDK used will be JDK 1.5.0 which was packaged with the product, or in the case of RedHat Linux, the first JDK found in the PATH at the time that the installer is run.

For silent installation, the optional JVM_JDK_HOME property is only used when you need to set the JDK path to a JDK other than the default version. Using a JDK other than the one installed with BAS may have unpredictable results. We highly recommend you use the JDK included with the installer.

**Important:**

Do not remove the JDK installation that JVM_JDK_HOME points to before uninstalling BAS. If you remove the installed JDK, the Uninstaller will not work, since the uninstaller is configured to use the JDK pointed to by the JVM_JDK_HOME property.

## Invoking silent installation on Redhat Linux

**Important**

You need an existing JRE 1.5.0 in your environment in order to run the extracted installer file.

**Note**

All properties and values are case-sensitive. When specifying directory and file paths, always use a forward slash.

**To invoke the silent installation process on RedHat Linux:**

1  Open a command-line shell.

2  Go to http://www.borland.com/downloads/download_appserver.html and download BAS for RedHat Linux.

3  Extract the installer executable file.

4  Go to the directory where you extracted the installer and obtain all permissions, or `chmod` all, where `777` indicates all, to run the installer.

5  Invoke the silent installation process by entering the following command. Make sure to specify the full path name of the `<propertiesfile>` file:

        java -cp <installer file> install -f <path to properties file>

    where `<installer_file>` is the name of the BAS installer and `<path to properties file>` is the full path of the `<propertiesfile>` file.

    For example:

        java -cp <installer_file> install -f /usr/home/myname/silentproperties.txt

**Note**

After silent installation is completed, you need to register and activate the license you received for your product. The license may be in the form of an email from Borland listing one or more serial numbers and license keys, or it may be a license key file sent to you in an email from Borland. For information on activating your new license, see "Borland product registration wizard". If you want to register and activate your license by running the `lmadm` executable found in the `<install_dir>/bin` directory or by launching the wizard from the Tools menu in the Management Console (see "Using the License" Manager in *Management Console User's Guide*).

# Properties file for silent installation

This properties file applies to silent installation of BAS AppServer Edition or BAS VisiBroker Edition. The property file is a plain text file, with each property listed on its own line, terminated by a carriage return, with no blank spaces at the end of each line and no blank lines at the end of the file. The properties can appear in any order in the file.

## Sample silent installation properties for RedHat Linux

| Variable | Value |
| --- | --- |
| INSTALLER_UI | `silent` (required). The mode of installation. |
| USER_INSTALL_DIR | `<install_dir>` (required). This is the full path name for the Borland AppServer product directory of your choice. The default installation directory is `/opt/Borland/AppServer`. |
| INSTALL_TYPE | `AppServer` installs Appserver |

| Variable | Value |
| --- | --- |
| JMS_TYPE<br>(required property) | Choose *only one* of the following:<br>■ `TIBCO`—Installs AppServer with Tibco.<br>■ `OPENJMS`—Installs AppServer with OpenJMS. |
| USER_SHORTCUTS | ■ The required value is `/dev/null`. |
| JVM_JDK_HOME | (optional). Sets the JDK path for BAS components that host user application code.<br>■ The default is the first JDK found in the PATH at the time the installer is run. |
| OSAGENT_PORT | (optional). Default is `14000`. |
| SERVER_NAME | `<server_name>` (optional). A server name of your choice. Default is host name. This is the same as the Management Agent Name that is entered during a custom install. |
| MANAGEMENT_PORT | (optional). Sets the Management Port. Default is `42424`. |
| INSTALL_CONSOLE | (optional). Installs the Management Console. Default is `YES`. |
| INSTALL_SERVER | (optional). Installs all the server components, such as the Partition, Apache Web server, and JDataStore. Default is `YES`. |
| INSTALL_CLIENT | (optional). Installs all the components for client applications (EJB client). Default is `YES`. |
| INSTALL_DOCS | (optional). Installs the suite of online documentation. Default is `YES`. |
| INSTALL_EXAMPLES | (optional). Installs the example applications for Borland AppServer. Default is `YES`. |
| CONFIGURATION_SETUP | (optional). Installs the BAS example configuration. Default is `YES`. |

Here is a sample properties file for BAS on non-default management agent ports:

```
INSTALLER_UI=silent
USER_INSTALL_DIR=/opt/Borland/AppServer
INSTALL_TYPE=AppServer
JMS_TYPE=TIBCO
USER_SHORTCUTS=/dev/null
OSAGENT_PORT=14925
MANAGEMENT_PORT=42925
CONFIGURATION_SETUP=NO
```

# Index

## Symbols