

# PATROL<sup>®</sup> for JBoss Application Server User Guide



Supporting

PATROL for JBoss Application Server 1.0.00

April 2011



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- find the most current information about BMC products
- search a database for issues similar to yours and possible solutions
- order or download product documentation
- download products and maintenance
- report an issue or ask a question
- subscribe to receive proactive e-mail alerts when new product notices are released
- find worldwide BMC support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

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### Before contacting BMC

Have the following information available so that Customer Support can begin working on your issue immediately:

- product information
  - product name
  - product version (release number)
  - license number and password (trial or permanent)
- operating system and environment information
  - machine type
  - operating system type, version, and service pack or other maintenance level such as PUT or PTF
  - system hardware configuration
  - serial numbers
  - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the issue
- commands and options that you used
- messages received (and the time and date that you received them)
  - product error messages
  - messages from the operating system, such as `file system full`
  - messages from related software



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# Product components and capabilities

This chapter provides a brief overview of the PATROL for JBoss Application Server product. The chapter contains the following sections:

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## PATROL for JBoss Application Server features

The PATROL for JBoss Application Server product provides a monitoring capability for reliable, predictable performance of a JBoss Application Server environment.

PATROL for JBoss Application Server enables you to

- monitor runtime application server availability
- monitor availability and performance of JBoss resources, such as thread pools, overall memory utilization, and web services
- monitor performance of servlets, Oracle<sup>®</sup> JavaServer Pages (JSPs), and Enterprise Java Beans (EJBs)

Depending on the collection categories that you choose to discover, the product can provide you with information about the following categories:

- Enterprise JavaBean (EJB)
- Java EE Connector Architecture (JCA)
- Java Message Service (JMS)
- Java Transaction API (JTA)
- Java Virtual Machine (JVM)
- Java Servlet/JavaServer Pages (SERVLET/JSP)
- Collection thread metrics (THREAD)
- Web Application Archive (WAR)

## Product architecture

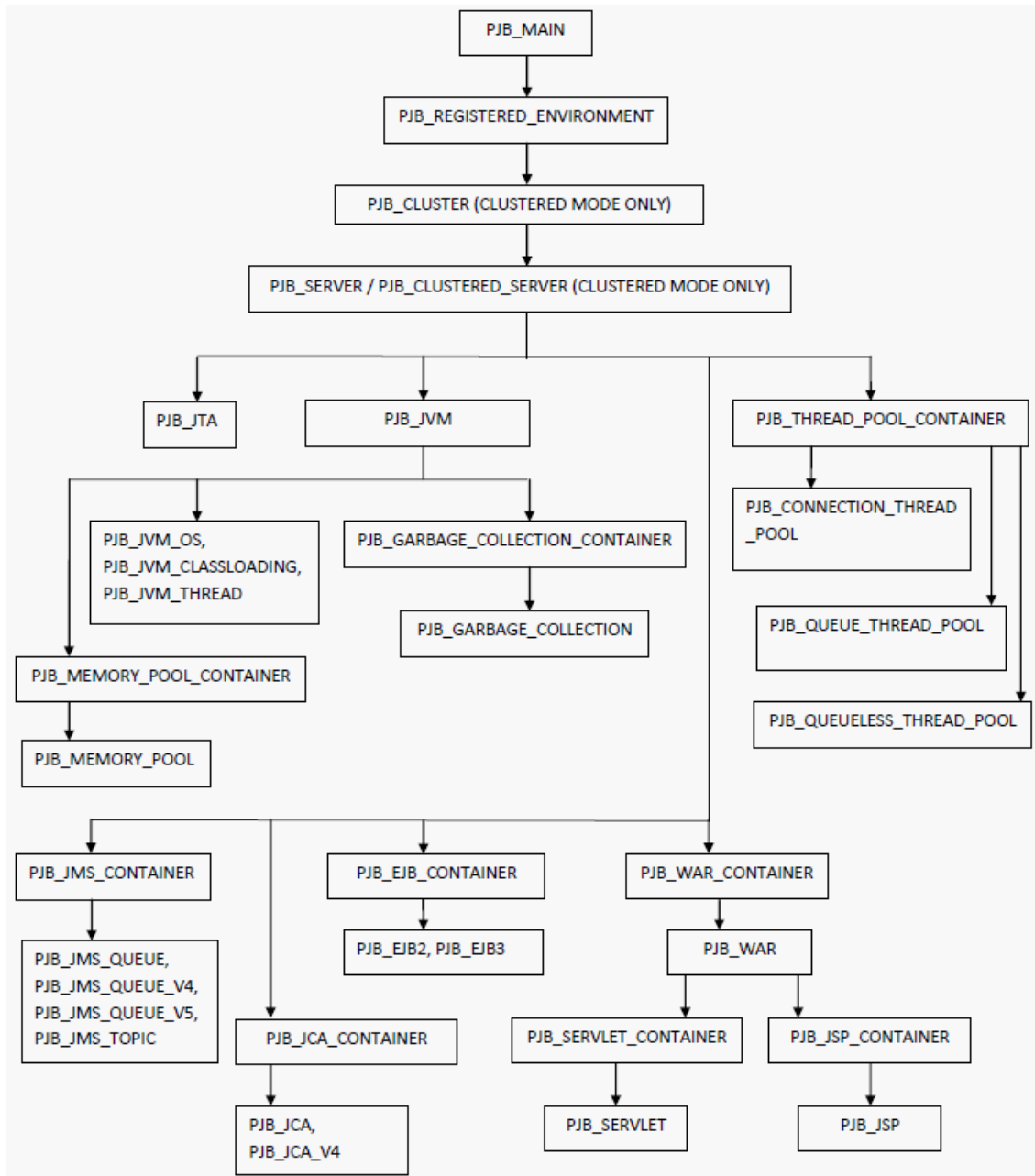
This section contains information about the hierarchy of information displayed on the PATROL Console and about the general architecture of PATROL for JBoss Application Server.

## Application class hierarchy

[Figure 1](#) shows the organization of application classes in PATROL for JBoss Application Server. Most application classes that represent JBoss objects can have multiple instances and are organized into groups called *containers*.

Information about how these instances are named is on [page 17](#). For more information about each application class, see “[Application classes](#)” on [page 15](#).

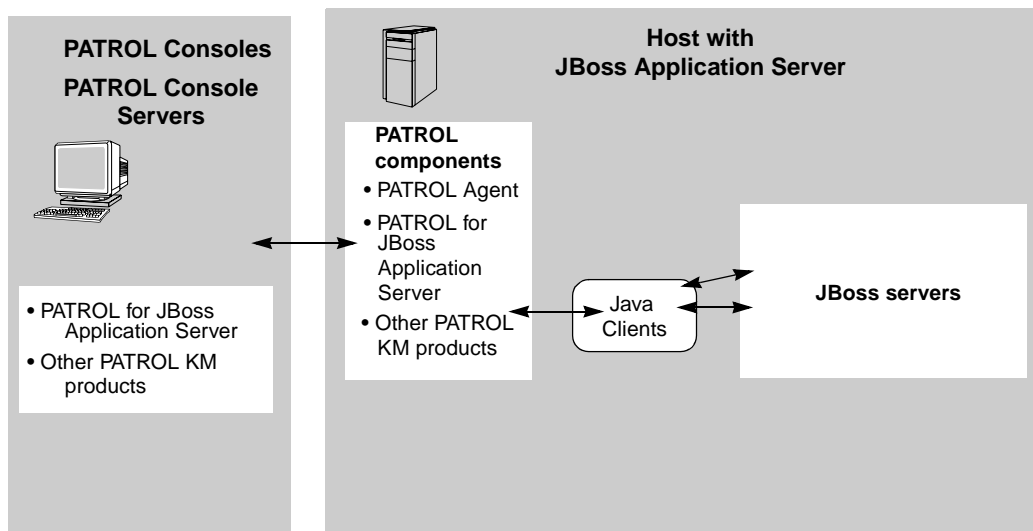
Figure 1 Application class hierarchy in PATROL for JBoss Application Server



## JBoss data collection

Figure 2 shows how the PATROL Console interacts with the PATROL Agent on a JBoss Application Server. A Java client collects performance data from the application server through an RMI connection. PATROL obtains the performance data from the JBoss administration server or the application server through API calls. The PATROL Agent periodically collects these metrics by using a Java client, and then passes information to the PATROL Console or PATROL Console Server.

**Figure 2 Architecture of PATROL for JBoss Application Server**



The following sections describe the components shown in Figure 2:

### PATROL Consoles, PATROL Console Servers

PATROL Consoles and PATROL Console Servers provide the ability to interact with one or more PATROL agents to set up and configure PATROL for JBoss Application Server, and to manage JBoss. You must install PATROL for JBoss Application Server on at least one PATROL Console for Windows or UNIX<sup>®</sup>, or on a PATROL Console Server that provides PATROL common services. Installing on a console server allows you to use PATROL Central for Windows or PATROL Central for Web as your console.

### PATROL Agent

An Agent can be used to monitor multiple JBoss servers or multiple base application servers throughout your network.

## JBoss Servers

These are the application servers that are monitored.

## Java clients

BMC provides clients that interact with various JBoss components and external components to gather information such as performance statistics, process status, and resource availability. These clients are designed to be launched once and reused through PSL global channels for maximum efficiency.

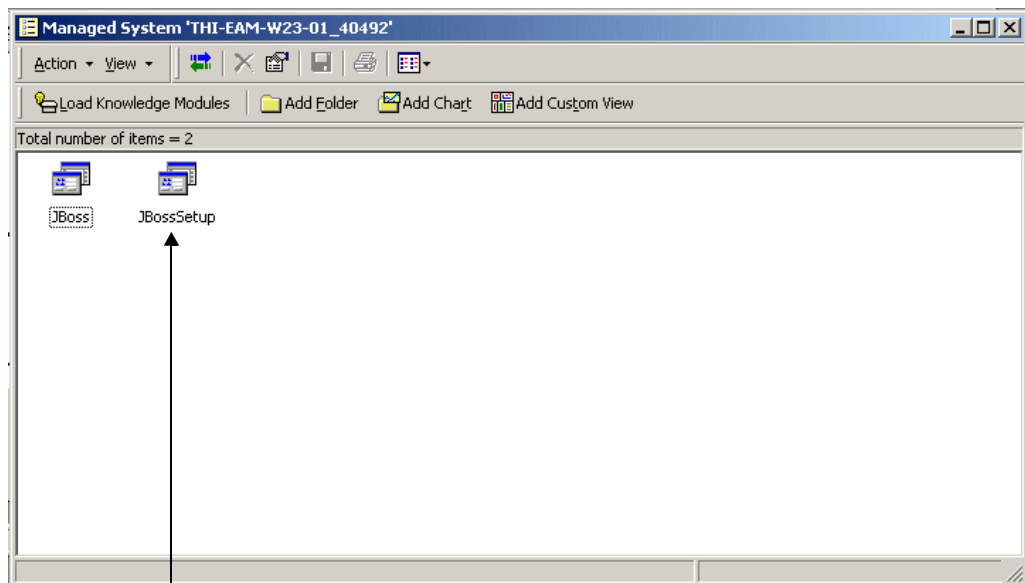
# Application classes

PATROL for JBoss Application Server contains several applications and application containers. Application containers group together multiple instances of a managed resource.

The PJB\_MAIN application container represents the JBoss Application Server environment, and might contain a single server or multiple servers. It is labeled **JBoss**.

The JBossSetup icon and the JBoss icon are displayed in the computer window along with various other product icons, if any.

**Figure 3** PATROL Console



setup icon for PATROL for JBoss Application Server

Table 1 describes the PATROL for JBoss Application Server application classes

**Table 1 Application Classes and functions (Part 1 of 2)**

| Application class name           | Description  |
|----------------------------------|--|
| PJB_MAIN                         | is the main application class for all JBoss instances.             |
| PJB_SETUP                        | is the main application class for all JBoss environments.          |
| PJB_CLUSTER                      | contains an instance of a JBoss cluster.                           |
| PJB_CLUSTERED_SERVER             | contains instances of a JBoss Application Server in a cluster.     |
| PJB_CONNECTION_THREAD_POOL       | contains connection thread pool parameters.                        |
| PJB_EJB_CONTAINER                | contains Enterprise JavaBean (EJB) instance parameters.            |
| PJB_EJB2                         | contains Enterprise JavaBean 2 (EJB2) parameters.                  |
| PJB_EJB3                         | contains Enterprise JavaBean 3 (EJB3) parameters.                  |
| PJB_ENVIRONMENT                  | contains parameters for registered JBoss environments.             |
| PJB_GARBAGE_COLLECTION_CONTAINER | contains Garbage Collection instance parameters.                   |
| PJB_GARBAGE_COLLECTION           | contains Garbage Collection parameters.                            |
| PJB_JCA_CONTAINER                | contains Java EE Connector Architecture (JCA) instance parameters. |
| PJB_JCA                          | contains JCA parameters.   |
| PJB_JCA_V4                       | contains JCA v4 parameters.  |
| PJB_JMS_CONTAINER                | contains Java Message Service (JMS) instance parameters.           |
| PJB_JMS_QUEUE                    | contains JMS Queue parameters.                                     |
| PJB_JMS_QUEUE_V4                 | contains JMS Queue v4 parameters.                                  |
| PJB_JMS_QUEUE_V5                 | contains JMS Queue v5 parameters.                                  |
| PJB_JMS_TOPIC                    | contains JMS Topic parameters.                                     |
| PJB_JSP_CONTAINER                | contains JavaServer Page (JSP) instance parameters.                |
| PJB_JSP                          | contains JavaServer Page (JSP) parameters.                         |
| PJB_JTA                          | contains Java Transaction API (JTA) parameters.                    |
| PJB_JVM                          | contains Java Virtual Machine (JVM) parameters.                    |
| PJB_JVM_CLASSLOADING             | contains JVM classloading parameters.                              |
| PJB_JVM_OS                       | contains JVM operating system parameters.                          |
| PJB_JVM_THREAD                   | contains JVM thread parameters.                                    |
| PJB_MEMORY_POOL_CONTAINER        | contains Memory Pool instance parameters.                          |
| PJB_MEMORY_POOL                  | contains Memory Pool parameters.                                   |
| PJB_QUEUE_THREAD_POOL            | contains queue thread pool parameters.                             |
| PJB_QUEUELESS_THREAD_POOL        | contains queueless thread pool parameters.                         |
| PJB_REGISTERED_ENVIRONMENT       | contains parameters for registered JBoss environments.             |
| PJB_SERVER                       | is the main application class for standalone servers.              |



**Table 1 Application Classes and functions (Part 2 of 2)**

| Application class name    | Description   |
|---------------------------|---|
| PJB_SERVLET_CONTAINER     | contains Java Servlet instance parameters.                  |
| PJB_SERVLET               | contains Java Servlet parameters.                           |
| PJB_THREAD_POOL_CONTAINER | contains thread pool instance parameters.                   |
| PJB_WAR_CONTAINER         | contains Web Application Archive (WAR) instance parameters. |
| PJB_WAR                   | contains WAR parameters.                                    |

## Application instance naming conventions

Many application classes in PATROL for JBoss Application Server can have multiple instances, each with a unique name. The name is used to label icons in the PATROL Console. Application class instances are named using the conventions shown in Table 2.

**Table 2 Instance naming conventions (Part 1 of 2)**

| Application                | Instance naming convention (discovered from JBoss Server) | Example                 |
|----------------------------|---|-------------------------|
| PJB_CLUSTER                | Name of a server cluster                                  | DefaultPartition(env1)  |
| PJB_CLUSTERED_SERVER       | Name of a server in a cluster                             | 10.64.50.45:1099        |
| PJB_CONNECTION_THREAD_POOL | Name of a Connection Thread                               | http-10.64.50.45-8009   |
| PJB_EJB2                   | Name of an EJB2   | SecureManagementView    |
| PJB_EJB3                   | Name of an EJB3   | SecureDeploymentManager |
| PJB_ENVIRONMENT            | Name of the environment that you specified                | env1                    |
| PJB_GARBAGE_COLLECTION     | Name of the garbage collector                             | Copy                    |
| PJB_JCA                    | Name of a JCA instance                                    | DefaultDS               |
| PJB_JMS_QUEUE              | Name of a JMS Queue                                       | DLQ                     |
| PJB_JMS_TOPIC              | Name of a JMS Topic                                       | DLQ                     |
| PJB_JSP                    | Name of a JSP   | jsp                     |
| PJB_JTA                    | Name of a JTA   | Transaction Manager     |
| PJB_JVM                    | Name of a JVM   | JVM Resources           |
| PJB_JVM_CLASSLOADING       | Name of a JVM Class Loader                                | Class Loading           |
| PJB_JVM_OS                 | Name of the JVM's operating system                        | Operating System        |

**Table 2 Instance naming conventions (Part 2 of 2)**

| Application                | Instance naming convention (discovered from JBoss Server) | Example                    |
|----------------------------|---|----------------------------|
| PJB_JVM_THREAD             | Name of a JVM Thread                                      | Threading                  |
| PJB_MEMORY_POOL            | Name of a Memory Pool                                     | Code Cache                 |
| PJB_QUEUE_THREAD_POOL      | Name of a Queue Thread Pool                               | WorkManagerThreadPool      |
| PJB_QUEUELESS_THREAD_POOL  | Name of a Queueless Thread Pool                           | LongRunningTasksThreadPool |
| PJB_REGISTERED_ENVIRONMENT | Name of the environment that you specified                | env1                       |
| PJB_SERVER                 | Name of a standalone server                               | 10.64.50.45:1099           |
| PJB_SERVLET                | Name of a Java Servlet                                    | Status Servlet             |
| PJB_WAR                    | Name of a WAR   | admin-console              |

## Accessing product Help

PATROL for JBoss Application Server provides Help topics for the currently displayed window or dialog box. You can also start the Help system for the KM, and get help for application classes and parameters.

How you get the product Help depends on the type of PATROL Console you are using. For specific instructions about accessing Help in each Console type, refer to “Accessing online Help” on page 60 in Appendix A, “Accessing menu commands, InfoBoxes, and online Help.”

## Additional information

A core set of PATROL manuals is provided on the documentation CD included with major releases of the PATROL Console and Agent. You can also view manuals in electronic format or order additional printed copies from the Web: [http://www.bmc.com/support\\_home](http://www.bmc.com/support_home).

For the latest updates to product information, refer to the release notes, which are also available at [http://www.bmc.com/support\\_home](http://www.bmc.com/support_home).

## Where to go from here

If you are ready to install and configure the PATROL for JBoss Application Server product, see [Chapter 2, “Installing PATROL for JBoss Application Server.”](#)



# Installing PATROL for JBoss Application Server

This chapter describes how to install PATROL for JBoss Application Server.

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# Installation requirements

Before installing PATROL for JBoss Application Server, verify that:

- your system is supported for this product
- you have a valid license from BMC Software and an appropriate account from which to install the product
- your Java environment is supported for this product



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## **NOTE**

Any information for UNIX, unless otherwise specified, applies to any supported versions of Linux<sup>®</sup>.

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## Operating system and JBoss support

Before installing PATROL for JBoss Application Server, verify that the target computer meets the installation requirements listed in the release notes for version 1.0.00 of the PATROL for JBoss Application Server product.

## Virtual machine support limitation

VMWare provides technology that creates virtual infrastructures by providing a layer of abstraction between the computing, storage, and networking hardware, and the software that runs on it. This technology enables customers to run additional operating systems in multiple windows called virtual machines (VMs).

BMC does not anticipate problems with the PATROL and SmartDBA product families in virtual infrastructure implementations, but products within these families have not been specifically tested. Therefore, BMC only provides support for problems that are reproducible without these complementary technologies.

## Performance and scalability

BMC tested PATROL for JBoss Application Server to assess its performance in typical JBoss Application Server environments in different configurations. Generally, BMC found that:

- In a basic out-of-the-box configuration, monitoring an active JBoss Application Server environment, PATROL for JBoss Application Server uses negligible resources.

## License

Verify that you have a permanent license to run your PATROL product or a valid demonstration license. If you have not yet installed a permanent license, contact your BMC sales representative or the BMC Contract Administration department for licensing information.

## Installation account

Install PATROL for JBoss Application Server on each machine by using the dedicated PATROL OS account under which you installed the PATROL Console or Agent.

If you do not already have a dedicated PATROL account, this section describes how to set up a PATROL installation account for Microsoft Windows and UNIX platforms.

### Windows environments

In a Windows environment, PATROL requires a dedicated user account that is known as the PATROL default account. The PATROL default account must be created before you install PATROL. The PATROL default account can be either a local or a domain account.

Standalone workgroup servers must use a local user account as a PATROL default account. Servers that are trusted members of a domain might use either a local or domain account. In each case, the PATROL default account must be a member of the local administrators group of the computer where the agent will reside.

PATROL default accounts on domain controllers should be only domain accounts. The account on a domain controller must be a member of the domain administrators group.

Although you can use an existing Windows user account, BMC recommends that you create a separate Windows user account for PATROL.

---

#### **WARNING**



Do not use a domain or local Administrator account as the PATROL default account. Such account usage causes files that are created by PATROL to be owned by the Administrator, which could result in security or file access problems.

---

## UNIX environments

BMC Software recommends that the UNIX account that you create meet the following conditions:

- The account `.login`, `.profile`, `.cshrc`, and `.kshrc` files should contain as little user customization as possible. Specifically, there should be no aliases, the prompt should be set to the default, and there should be no commands in these files that change the umask setting. The recommended umask setting for the installation account is `022`.
- Do not use root to install PATROL products because this might create security risks.
- Be sure the account has permission to create directories in the directory where you will install PATROL products.

The account that you use to install PATROL must have permission to write the installation logs to the `$HOME` and `/tmp` directories on the computer where you are installing products.

## Preparing to install

BMC recommends that you install the product on a limited number of development or test machines first, then configure and test the product before installing into a production machine environment.

## Installation prerequisites

Before you install, you must

- ensure you are using the appropriate version of the installation utility (see [page 25](#))
- understand target machines and their roles (see [page 25](#))
- understand PATROL security options (see [page 28](#))

## Checking for product patches or fixes before installing

Product fixes or patches are often available through the BMC Software Web site. Patches correct problems that are found after a product is released. BMC recommends that you check the product page for the current version of PATROL for JBoss Application Server on the [BMC Customer Support](#) Web page to determine whether a patch is available before you begin installing a product.



## Remote installation

If you create an installable image, the product configuration information that you enter, such as the BMC products installation directory, account names, passwords, PATROL Agent port number, and security options, must be the same for all computers on which the image is to be installed. If you want to specify different settings for different computers, you must either create a separate image for each set of values that you want to implement, or edit the variables in the image control file by using the `ctltool` command.

For more information about creating, distributing, and installing installable images, and about using `ctltool` utility, see the *PATROL Installation Reference Manual*.

## Determine the version of the installation utility

For best results, perform the installation procedure using a recent version of the PATROL installation utility, version 7.5.62 or later.

### To determine the version of the installation utility

- 1 Open a command prompt.
- 2 Navigate to the directory where the installation utility is located.
- 3 Enter one of the following commands:
  - Windows: `setup.exe -v`
  - UNIX: `setup.sh -v`

A message box displays the version of the installation utility.

## Target computers and their roles

The installation utility prompts you to select the roles that are performed by the computer on which you are installing BMC products (the target computer). Before beginning the installation process, review the following definitions of the roles that are presented in the installation utility and decide which of these roles applies to each computer in your environment.

### Roles performed by computers in the PATROL architecture

The roles performed by computers in the PATROL architecture are

- **Console Systems** (also referred to as console computers) host user desktop applications such as consoles, user interfaces, viewers, and browsers. Select this option if the computer to which you are installing will perform any of the following tasks:
  - monitor and manage on Windows by using a PATROL Central Operator – Microsoft Windows Edition console (PATROL 7.x architecture)
  - monitor, manage, and develop KMs on UNIX by using a PATROL Console for UNIX (PATROL 3.x architecture)
  - monitor, manage, and develop KMs on Windows by using a PATROL Console for Windows (PATROL 3.x architecture)
- **Managed Systems** (also referred to as agent computers) host software that manages the resources on the computer, such as a PATROL Agent, PATROL Knowledge Modules, and Service Reporting Retrievers. Select this option if the computer to which you are installing will perform any of the following roles:
  - host a PATROL Agent 3.6.50 (works with both the PATROL 3.x and PATROL 7.x architecture)
  - host KMs and components that contain the knowledge that PATROL uses to monitor the resources on this computer
  - A **Common Services** (PATROL 7.x architecture) computer hosts services that are shared among managed systems and console systems. You can install each of these common services on any computer in the network. Select this option if the computer to which you are installing will perform any of the following roles:
    - host the PATROL Central Operator – Web Edition (PATROL 7.x architecture) Web server
    - host the PATROL Console Servers
    - host the RTservers

For more information about the PATROL consoles and PATROL Console Server or RTserver, see the respective online Help systems and the following documents:

- *PATROL Central Operator - Web Edition Getting Started*
- *PATROL Central Operator - Microsoft Windows Edition Getting Started*
- *PATROL Console Server and RTserver Getting Started*
- *PATROL Configuration Manager User Guide*

- *PATROL Console for Microsoft Windows User Guide - Understanding the Basics of PATROL, Volume 1*
- *PATROL Console for UNIX User Guide*

## Determining where to install KMs based on architecture

PATROL 3.x and PATROL 7.x architectures differ as to which target computers store KMs and how much KM information is required by each type of system. During installation, ensure that you select the appropriate types of systems according to the following information:

### PATROL 3.x

Install KM packages to Managed Systems and Console Systems.

A PATROL 3.x environment includes the following components:

- PATROL Agent 3.8.00 or later runs on Managed Systems.
- PATROL Console for Windows or PATROL Console for UNIX 3.6.50 runs on Console Systems.

### PATROL 7.x

For PATROL Central Operator – Microsoft Windows Edition, install KM packages to Console Systems, Common Services Systems, and Managed Systems.

For PATROL Central Operator – Web Edition, install KM packages to Common Services Systems and Managed Systems.

A PATROL 7.x environment includes the following components:

- PATROL Agent 3.8.00 runs on Managed Systems.
- RTserver runs on Commons Services Systems.
- PATROL Console Server runs on Common Services Systems.
- PATROL Central Operator – Microsoft Windows Edition, PATROL Central Operator – Web Edition, or both run on Console Systems.

For more information about the PATROL 7.x architecture, see the *PATROL Infrastructure Planning Guide*.

### Mixed PATROL 3.x and 7.x environment

A mixed PATROL 3.x and 7.x environment includes the components from both a PATROL 3.x environment and a PATROL 7.x environment.

## Typical and custom installation Types

The installation utility prompts you to select one of the following installation types:

- **Typical**- In general, use the **Typical** installation type if you are installing PATROL for JBoss Application Server for the first time or if you are upgrading from a previous installation and you want to use standard default settings for directories and port numbers.
- **Custom**- In general, use the **Custom** installation type if you want to install only individual components, or if you are upgrading from a previous version of a PATROL KM and have a PATROL environment that might be configured with non-standard settings.

---

### NOTE



If you are installing PATROL for JBoss Application Server to an existing PATROL Agent or Console environment that is not in the default installation directory, use Custom. Do not use Typical. Typical automatically installs the agent or console with PATROL for JBoss Application Server, and your existing installation is overwritten. If you do not want to overwrite your existing installation, use Custom so that you can clear the selection of the agent or console product component.

---

## PATROL security

By implementing PATROL security, you can protect the data that is passed between PATROL components and restrict unauthorized users from accessing your data. PATROL security is installed as part of the agent, console server, and consoles. KMs inherit the security policy from the agent, console server, and console on which the KMs are installed.

For more information about implementing and using PATROL security, see the following documentation:

- *PATROL Security User Guide*
- *PATROL Security Release Notes*

## Default login shell

If you are installing into a UNIX environment, BMC recommends that you define the default login shell when you prepare to install. Although setting a default login shell is not specifically a requirement for installation, starting the KM without having defined the correct login shell might result in unpredictable behavior.

Both the JBoss Administration Account and the PATROL Default User Account must be set to use one of the following the default login shells:

- the Bourne shell (**sh**)
- the Korn shell (**ksh**)

## Mounting a CD on UNIX

The following sections provide information about the mount commands that are used for mounting the PATROL product CDs on your UNIX system.

### Mounting the CD

In this procedure, the root directory for the CD drive is called **/cdrom**. This directory might be different for your computer, depending on how your system administrator has configured the device. If a problem occurs, consult your system administrator or read the man page for the **mount**.

- 1 Log on as **root**.
- 2 Insert the CD into the CD drive.
- 3 Use the **mount** command that applies to your platform to mount the CD.

**Table 3** Mount commands by platform

| Platform                          | Mount Command  |
|-----------------------------------|--|
| IBM <sup>®</sup> AIX <sup>®</sup> | <code>mount -r -v cdrfs /dev/cd0 /cdrom</code>   |
| HP-UX                             | <code>mount -F cdrfs -o ro /dev/dsk/<i>drive_for_cdrom</i> /cdrom</code>   |
| Linux                             | <code>mount /dev/cdrom /<i>path_to_target_mount_point</i></code>   |
| Oracle <sup>®</sup> Solaris       | Volume Manager ( <code>/usr/sbin/vold</code> ) automatically mounts.<br>Otherwise, <code>mount -r -F hsfs /dev/sr0 /cdrom</code> |

- 4 Log off.

## Mounting the CD drive for an NFS Client

Before you can mount the CD on a Network File System (NFS) device, you must export the CD file system so that the CD can be mounted by NFS clients.

Most platforms use the **exportfs** command to export a local file system, including a CD file system. However, Solaris platforms use the **share** command.

To mount the CD on an NFS client, follow these steps:

- 1 Log on as **root**.
- 2 Create a directory on your local computer as the mount point for the CD on the remote host computer (for example, `/mnt/cdrom` or `/mnt/cdrom/cdrom0` for Solaris).
- 3 Use the **mount** command that applies to your platform to mount the CD.

**Table 4** NFS mount commands by platform

| Platform        | Mount Command   |
|-----------------|---|
| AIX, HPUX-PA1.0 | mount <i>host:/cdrom</i> /mnt/cdrom   |
| Linux           | mount <i>host:/path_to_file_system_to_be_exported</i> / <i>path_to_target_mount_point</i> |
| Solaris         | mount <i>host:/cdrom/cdrom0</i> /mnt/cdrom/cdrom0   |

If a problem occurs, consult your system administrator or read the man page for the mount.

- 4 Log off.

# Installing PATROL for JBoss Application Server

This section describes how to perform a new installation of PATROL for JBoss Application Server. You can optionally perform remote or multiple installations by using the Distribution Server (see “[Distribution Server](#)” on page 33).

You should first install on a limited number of machines in a test environment, then test the installation thoroughly, and then install in your production environment.

### NOTE



By default, a typical installation configures the PATROL Agent to connect through port 3181.

## Performing a typical installation

This section describes how to perform a typical installation of PATROL for JBoss Application Server.

- 1 Insert the PATROL for JBoss Application Server product CD in the CD-ROM. If you are installing on a UNIX system, mount the CD by using the `mount` command.
- 2 If the installation program did not automatically start, or if you are installing from an electronically downloaded installation image, start the installer. From the installation CD, run
  - (Windows) `setup.exe`
  - (UNIX) `setup.sh`

If you are in a UNIX environment with no web browser, perform the following steps to launch the installation program:

- A From a command-line prompt, change to the directory in which the installation utility is located.
  - Start the installation utility by using one of the following commands:
    - (Windows) `setup.exe -serveronly`
    - (UNIX) `./setup.sh -serveronly`
- B On another computer with a browser, start a web browser.
- C Direct the browser to the URL displayed in the message box (enter the URL in your browser's **Address** or **Go To** field).
- 3 In the Welcome to the Installation Utility window, click **Next** to begin your installation.
- 4 In the Accept Licence Agreement window, select **Accept**, then click **Next** to continue.
- 5 From the Select Installation Option window, select **Install products on this computer now**, then click **Next**.
- 6 In the Specify Installation Directory window, enter a directory path if you do not want to accept the default directory.
- 7 Click **Next** to continue.
- 8 Whether the computer to which you are installing is used as a monitoring console or as a target managed system (or both). In the Select System Roles window, determine the appropriate role, then click **Next**.

- Select **Common Services** if you are installing to a computer that will host the PATROL Central Operator - Web Edition (PATROL 7.x architecture) web server, the PATROL Console Servers, or the RTservers.
- Select **Console System** if you are installing to a computer that will host the PATROL Classic Console.
- Select **Managed System** if you are installing to a computer that will host a PATROL Agent. (This is a computer on which you run JBoss Application Server).

If you are not sure which option to choose, select both **Console System** and **Managed System**.

- 9 From the Select Products and Components to Install window, click + to expand the PATROL Solutions branch, select **PATROL for JBoss AS 1.0.00**, then click **Next**.
- 10 Review the setup information on the Review Selections and Install (or Review Selections and Create Installable Image) window.

If you want to change settings, click **Back** to go back to previous windows.

- 11 Click **Start Install** to complete the installation.
- 12 When the status window reports that installation is 100% complete, **Next** appears. Click **Next** to see the results window.
- 13 Click **View Log** to review details of the installation, or click **Exit** to close the installation utility.

## Importing into a distribution tool

The PATROL for JBoss Application Server can be installed locally to a single computer, or remotely to multiple computers using the BMC Distribution Server.

The details of how to install a product across an enterprise to multiple computers by using Distribution Server is beyond the scope of this book. However, this section does describe how to import the PATROL for JBoss Application Server product into the distribution tool. It also provides a high-level overview of the enterprise installation process that uses this product.



## Distribution Server

You can use the Distribution Server to perform remote installations or uninstallations of BMC distributed systems products across multiple systems from a central location.

With the Distribution Server you can

- install, uninstall, upgrade, and reinstall products on remote systems from one central location
- create collections of products and system groups to distribute multiple products to multiple systems in one distribution
- schedule a distribution for a specific date and time
- maintain multiple product versions to be distributed
- view reports to check distribution status, gather distribution data, and diagnosis problems

## Creating an installation package of the merged PATROL for JBoss Application Server

This section describes how to create an installation package that can be used with the installation utility to install locally on one computer, or with Distribution Server to install remotely on multiple computers.

### To create an installation package

- 1 Copy the entire contents of the PATROL for JBoss Application Server CD to a temporary directory on a hard drive on a server.

You can delete this temporary directory after you have successfully created an installable image.

- 2 Navigate to the **packaged\_results** directory for the merged package and open the **.ppf** file with a text editor.

Write down the file name in the first line of the **.ppf** file. This file name is the name of the directory that you will look for in the **Products** directory of the CD image.

- 3 Rename the **packaged\_results** directory with the file name from the first line of the **.ppf** file.

— **EXAMPLE** —

If `pokckm/8.5.00/030107-233044` was listed in the first line of the `.ppf` file, you would use `pokckm` as the directory name.

---

- 4 Copy the renamed directory to the **Products** directory of the temporary directory that you used in [step 1](#).
- 5 Replace the files there with the merged files that contain your customizations.
- 6 Copy the PATROL for JBoss Application Server CD image to the server that you will use to install PATROL for JBoss Application Server.

## Importing a CD or custom installation package into the Distribution Server

This section describes how to import components into the Distribution Server for deployment to multiple locations.

### Before You Begin

- The customized installation packages that resulted from “[Creating an installation package of the merged PATROL for JBoss Application Server](#)” on page 33 must be accessible to the Distribution Server.
- Ensure that you use the Distribution Server version 7.1.15 and apply any available patches.

### To Import components in to the Distribution Server

- 1 Using the Distribution Server Manager, start the Distribution Server and connect to it.
- 2 In the Distribution Server tab area, click the **Components** tab.
- 3 In the list area, click **Import**.
- 4 Navigate to the location where the components are located and click **Next**.
- 5 Select the directory that contains the **Products** directory (do not select the **Products** directory itself).

If the components are not accessible on a local drive, you can specify them by using the NFS name and path.

---

— **EXAMPLE** —

---

Assuming that you copied the CD image into a directory called **merged\_CD** and then, after migrating your customizations and creating a customized installation package, you copied the updated package to the directory containing the CD image, the resultant directory structure would be similar to the following:

(Windows) **merged\_CD\Products\pmwchm**

(UNIX) **merged\_CD/Products/pmwchm**

You would select the directory **merged\_CD**.

---

**6** Select the check boxes for the components that you want to import and click **OK**.

**7** To import the selected components, click **Import**.

## Installing PATROL for JBoss Application Server using the Distribution Server

After you have imported the PATROL for JBoss Application Server into the Distribution Server, you must perform the following tasks within the tool. The tasks can be grouped into the following stages.

### To set up products

- 1** On the **Components** tab of the Distribution Manager, import components into the Distribution Server repository.
- 2** On the **Collections** tab of the Distribution Manager, arrange components in collections.
- 3** On the **Configurations** tab of the Distribution Manager, configure the collections.

### To set up systems

- 1** Create accounts in the operating system of the computers to which you want to distribute PATROL for JBoss Application Server.
- 2** On the **Systems** tab of the Distribution Manager, add accounts and create profiles for the systems.

- 3 On the **Systems** tab of the Distribution Manager, add the systems and install the Distribution Client.
- 4 On the **Systems** tab of the Distribution Manager, arrange systems in system groups.

### To distribute products

- 1 On the **Distributions** tab of the Distribution Manager, distribute configurations of collections to system groups.
- 2 On the **Reports** tab of the Distribution Manager, run reports to review distributions.

For detailed instructions about how to perform remote installations with the Distribution Server, see the *Distribution Server Getting Started Guide*.

## Considerations for using the online Help

If you plan to install the UNIX version of PATROL for JBoss Application Server on a PATROL Console for UNIX, you must install the supported version of the Help browser separately if it is not already installed.

## Browser version required for viewing the PATROL Console for UNIX Help

To view PATROL Help in PATROL version 3.x, the following browsers are supported:

- UNIX: Netscape Navigator version 3.01 through 4.78
- Red Hat Linux: Netscape Navigator version 4.x

PATROL Help does not support Netscape Navigator 6.0.

You must install Netscape Navigator on the computer where the PATROL Console resides. You can install Netscape Navigator anywhere on your UNIX computer as long as the binary is in the path.

Netscape Navigator is supplied by Netscape Communications Corp. You can locate the browser at <http://home.netscape.com/download>.

## Additional considerations for using the online Help for UNIX

When you select Help from the PATROL Console for UNIX, it may take a few seconds for the Help browser to launch. Two windows are displayed. First, the Netscape Navigator window is displayed as an icon, and then a browser window that contains the Help is displayed.

In addition, you must be aware of the following restrictions:

- Because of its file-locking mechanism, Netscape Navigator displays warning messages when it is invoked multiple times within the same user account. It does, however, continue to function.
- By default, when Netscape Navigator starts, it uses a private color map. As a result, you might experience color flashing on your workstation. If so, you can set the value of PATROL\_BROWSER so that the colormap option is not specified. However, some subsequent color requests might fail and the online Help is incorrectly displayed.
- The Exceed for Windows NT X Window Server product by Hummingbird Communication Ltd. might not always display the Help files correctly.

Consult your Netscape Navigator documentation to read about specific platform requirements and restrictions.

### Required environment variables settings for the browser

The LANG, PATH, and PATROL\_BROWSER environment variables must be set for the Help browser to run properly. The following sections describe these variables.

#### LANG variable

The UNIX LANG environment variable must be set to C so that Netscape Navigator will work properly. Otherwise, you might experience product failures.

| Type of Shell | Export Command for LANG Variable |
|---------------|----------------------------------|
| Bourne        | LANG=C<br>export LANG            |
| Korn          | export LANG=C                    |
| C             | setenv LANG=C                    |

## PATH variable

The PATROL user account PATH variable must contain the location of the directory that contains the Netscape files. If the directory containing the Netscape files is not in the path, add the directory to the PATROL user account path.

This requirement applies only to the PATROL user account on the PATROL Console computer.

| Type of shell | Export command for PATH variable              |
|---------------|---|
| Bourne        | PATH=\$PATH:/netscape_location<br>export PATH |
| Korn          | export PATH=\$PATH:/netscape_location         |
| C             | setenv PATH=\$PATH:/netscape_location         |

## PATROL\_BROWSER variable

When PATROL starts the Help browser, it uses the command in the PATROL\_BROWSER environment variable. As a default, the PATROL\_BROWSER environment variable contains the following commands:

| Type of shell | Export command for PATROL_BROWSER variable                                    |
|---------------|---|
| Bourne        | PATROL_BROWSER=netscape -display \$DISPLAY -install<br>-iconic<br>export LANG |
| Korn          | export PATROL_BROWSER=netscape -display \$DISPLAY<br>-install -iconic         |
| C             | setenv PATROL_BROWSER=netscape -display \$DISPLAY<br>-install -iconic         |

To use different arguments, set the value of PATROL\_BROWSER to the appropriate string.

---

### — EXAMPLE —

For a Korn shell:

```
export PATROL_BROWSER=/usr/local/bin/netscape -raise
```

---

# Uninstalling PATROL for JBoss Application Server

To uninstall PATROL for JBoss Application Server you must use the same version of the installation utility that you used to install the product. Run the installation utility in uninstall mode to uninstall PATROL for JBoss Application Server from your system.



---

## **WARNING**

---

If you use a different version of the installation program to uninstall, you might remove files that are needed to perform uninstallation of other BMC products.

---

## Determining the version of the installation utility

To determine the version of the installer that is on your system, perform the following procedure.

- 1 Access a command prompt and navigate to the appropriate location:
  - (Windows) `BMC_ROOT\Uninstall`
  - (UNIX) `BMC_ROOT/Uninstall`
- 2 Type the following command and press ENTER.
  - (Windows) `uninstall.exe -v`
  - (UNIX) `./uninstall.sh -v`

## Uninstalling PATROL for JBoss Application Server on UNIX

This section describes how to uninstall PATROL for JBoss Application Server from a UNIX environment with or without a browser.

### To uninstall individual products using the installation utility

- 1 Change to the **Uninstall** directory in your BMC Software product installation directory and enter the following command to launch the installation utility in uninstall mode:

```
./uninstall.sh
```

- 2 The Welcome window is displayed, and click **Next**.
- 3 Select the installation directory from which you want to remove a product, and click **Next**.
- 4 Select the product or products that you want to uninstall, and click **Next**.
- 5 Review your selections and click **Uninstall**.

After the uninstallation is complete, a window is displayed that tells you whether the uninstallation was successful.

### To uninstall individual products in a UNIX environment without a browser

- 1 If you are uninstalling from a UNIX environment without a browser perform the following steps to launch the installation utility:
  - A From a command line, change to the **Uninstall** directory and enter the following command to start the installation web server:

```
./uninstall.sh -serveronly
```
  - B A message box shows the URL to use to connect to the installation web server.
  - C On another machine, start a browser.
  - D Connect to the installation web server from the browser to start the installation utility by using the URL that is displayed in the message box.
- 2 When the Welcome window is displayed, click **Next**.



- 3 Select the installation directory from which you want to remove a product, and click **Next**.
- 4 Select the product or products that you want to uninstall, and click **Next**.
- 5 Review your selections and click **Uninstall**.

After the uninstallation is complete, a window is displayed that tells you whether the uninstallation was successful.

## Uninstalling all products but leaving log files and configuration Files

This task describes how to uninstall the PATROL product but retain log files, which contain history for future analysis, and configuration files for redeployment.

- 1 Uninstall all products as described in “[To uninstall individual products using the installation utility](#)” on page 40.
- 2 Locate the **uninstall.ctl** file in the following directory.  
  
(UNIX only) *BMC\_Products\_Installation\_directory/Uninstall/Install/instdata*
- 3 Open the **uninstall.ctl** file in a text editor, and edit the **/BMC/Base** variable to specify the name of the directory from which you removed the products in [step 1](#).
- 4 Open a command-line prompt.
- 5 Change to the following directory.

(UNIX only) *BMC\_Products\_Installation\_directory/Uninstall/Install/ instbin*

- 6 Enter the following commands:

(UNIX only) **thorinst.sh -uninstall path\_to\_control\_file -log path\_to\_log\_file -output path\_to\_output\_log\_file**

Use the following table to help determine the log file and output log file locations:

| Option  | Description   | Value  |
|---------|---|--|
| -log    | Sends the log information to a standard log file.<br><br>This file contains all installation status information.  | path to log file;<br>any valid path and file name (with a <b>.txt</b> extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks.        |
| -output | Sends the log information to an output log file.<br><br>This file contains all messages about the progress of the installation that are normally sent to standard output. | path to output log file;<br>any valid path and file name (with a <b>.txt</b> extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks. |

## Example (UNIX only)

If `/opt/bmc` is your product installation directory, you would change to `/opt/bmc/Uninstall/Install/instbin` directory and enter the following command:

```
thorinst.sh -uninstall
"/opt/bmc/Uninstall/Install/instdata/uninstall.ct1" -log
/var/logs/NetworkLogs/MyLogs.txt -output
/var/adm/NetworkLogs/MyLogs.out
```

This action removes all installation files and directories except those that are used by the utility when the uninstallation is performed. Log files, configuration files, and user-modified files are also retained.

## Uninstalling all products, associated log files, and configuration files

This section describes how to remove all PATROL products and related log files and configuration files from your UNIX environment. Once these files have been removed, you cannot recover them unless you have made a backup copy of the installation.

**1** Uninstall all products as described in “To uninstall individual products using the installation utility” on page 40.

**2** Locate the **uninstall-all.ctl** file in the following directory.

(UNIX only) *BMC\_Products\_Installation\_directory/Uninstall/Install/instdata*

**3** Open the **uninstall-all.ctl** file in a text editor, and edit the **/BMC/Base** variable to specify the name of the directory from which you removed the products in [step 1](#).

**4** Open a command line prompt.

**5** Change to the following directory.

(UNIX only) *BMC\_Products\_Installation\_directory/Uninstall/Install/instbin*

**6** Enter the following command.

(UNIX only) **thorinst.sh -uninstall path\_to\_control\_file -log path\_to\_log\_file -output path\_to\_output\_log\_file**

Use the following table to determine the log file and output log file locations:

| Option  | Description   | Value   |
|---------|---|---|
| -log    | Sends the log information to a standard log file.<br><br>This file contains all installation status information.  | path to log file;<br>any valid path and file name (with a <b>.txt</b> extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks. |
| -output | Sends the log information to an output log file.<br><br>This file contains all messages about the progress of the installation that are normally sent to standard output. | path to log file;<br>any valid path and file name (with a <b>.txt</b> extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks. |

## Example (UNIX only)

If `/opt/bmc` is your product installation directory, you would change to `/opt/bmc/Uninstall/Install/instbin` directory and enter the following command:

```
thorinst.sh -uninstall  
"/opt/bmc/Uninstall/Install/instdata/uninstall-all.ct1" -log  
/var/logs/NetworkLogs/MyLogs.txt -output  
/var/adm/NetworkLogs/MyLogs.out
```

This action removes all installation files and directories. The files that were used to perform the uninstallation are marked for deletion and will be removed when the computer on which the products were uninstalled is rebooted.

## Uninstalling PATROL for JBoss Application Server on Windows

You can uninstall PATROL for JBoss Application Server by using the option for specifying what you want to uninstall. The following procedures describe how to uninstall products and all related log files from a Windows environment.

### To uninstall individual products

- 1 From the **Uninstall** directory in your BMC Software product installation directory, double-click **uninstall.exe** to launch the installation utility in uninstall mode.



#### **NOTE**

As an option, you can launch the installation utility in uninstall mode by choosing **Start => Settings => Control Panel => Add/Remove Programs** and double-clicking **BMC Software Tools** in the **Add/Remove Programs Properties** dialog box.

The Welcome window is displayed. Click **Next**.

- 2 Select the installation directory from which you want to remove a product, and click **Next**.
- 3 Select the product or products that you want to uninstall, and click **Next**.
- 4 Review your selections, and click **Uninstall**.

After the uninstallation is complete, a window is displayed that tells you whether the uninstallation was successful.

## Uninstalling all products but leaving log files and configuration files

This section describes how to uninstall the PATROL product but retain log files, which contain history for future analysis, and configuration files for redeployment.

**1** Uninstall all products as described in “[To uninstall individual products](#)” on [page 44](#).

**2** Locate the **uninstall.ctl** file in the following directory.

(Windows only) *BMC\_Products\_Installation\_directory*\Uninstall\Install\instdata

**3** Open the **uninstall.ctl** file in a text editor, and edit the **/BMC/Base** variable to specify the name of the directory from which you removed the products in [step 1](#).

**4** Open a command-line prompt.

**5** Change to the following directory.

(Windows only) *BMC\_Products\_Installation\_directory*\Uninstall\Install\instbin

**6** Enter the following command.

(Windows only) **thorinst.exe -uninstall path\_to\_control\_file -log path\_to\_log\_file -output path\_to\_output\_log\_file**

Use the following table to help determine the log file and output log file locations:

| Option  | Description   | Value   |
|---------|---|---|
| -log    | Sends the log information to a standard log file.<br><br>This file contains all installation status information.  | path to log file;<br>any valid path and file name (with a .txt extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks.        |
| -output | Sends the log information to an output log file.<br><br>This file contains all messages about the progress of the installation that are normally sent to standard output. | path to output log file;<br>any valid path and file name (with a .txt extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks. |

## Example (Windows only)

If **C:\Program Files\BMC Software** is your product installation directory, you would change to the **C:\Program Files\BMC Software\Uninstall\Install\instbin** directory and enter the following command:

```
thorinst.exe -uninstall "C:\Program Files\BMC Software\Uninstall\Install\instdata\uninstall.ct1" -log Z:\NetworkLogs\MyLogs.txt -output Z:\NetworkLogs\MyLogs.out
```

This action removes all installation files and directories except those that are used by the utility at the time the uninstallation was performed. Log files, configuration files, and user-modified files are also retained.

## Uninstalling all products, associated log files, and configuration files

This section describes how to remove all PATROL products and related log files and configuration files from your Windows environment. Once these files have been removed, you cannot recover them unless you have made a backup copy of the installation.

- 1 Uninstall all products as described in “To uninstall individual products” on page 44.
- 2 Locate the **uninstall-all.ctl** file in the following directory.  
  
(Windows only) *BMC\_Products\_Installation\_directory*\Uninstall\Install\instdata
- 3 Open the **uninstall-all.ctl** file in a text editor, and edit the **/BMC/Base** variable to specify the name of the directory from which you removed the products in [step 1](#).
- 4 Open a command-line prompt.
- 5 Change to the following directory.  
  
(Windows only) *BMC\_Products\_Installation\_directory*\Uninstall\Install\instbin
- 6 Enter the following command.  
  
(Windows only) **thorinst.exe -uninstall path\_to\_control\_file -log path\_to\_log\_file -output path\_to\_output\_log\_file**

Use the following table to help determine the log file and output log file locations:

| Option  | Description  | Value   |
|---------|--|---|
| -log    | ends the log information to a standard log file<br><br>This file contains all installation status information.   | path to log file;<br>any valid path and file name (with a <b>.txt</b> extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks. |
| -output | sends the log information to an output log file<br><br>This file contains all messages about the progress of the installation that are normally sent to standard output. | path to log file;<br>any valid path and file name (with a <b>.txt</b> extension)<br><br>If a space exists in the path, the entire path must be enclosed in quotation marks. |

## Example (Windows only)

If **C:\Program Files\BMC Software** is your product installation directory, you would change to the **C:\Program Files\BMC Software\Uninstall\Install\instbin** directory and enter the following command:

```
thorinst.exe -uninstall "C:\Program Files\BMC  
Software\Uninstall\Install\instdata\uninstall-all.ct1" -log  
Z:\NetworkLogs\MyLogs.txt -output Z:\NetworkLogs\MyLogs.out
```

This action removes all installation files and directories. The files that were used to perform the uninstallation are marked for deletion and will be removed when the computer on which the products were uninstalled is rebooted.

## Where to go from here

After installation is complete, turn to [Chapter 3, “Configuration”](#) for information about configuring PATROL for JBoss Application Server.



# Configuration

After you install PATROL for JBoss Application Server, you must load the Knowledge Modules (KMs) into the PATROL Console and configure the product. This chapter contains the following topics:

|   |    |
|---|----|
| Loading PATROL for JBoss Application Server ..... | 49 |
| Initial KM setup .....                            | 50 |
| Registering a JBoss environment .....             | 51 |
| Enabling and disabling Java debugging .....       | 53 |
| Enabling and disabling PSL debugging .....        | 53 |
| Selecting collection categories .....             | 54 |
| Verifying discovery .....                         | 55 |
| Resolving potential setup problems .....          | 56 |
| Editing a JBoss environment .....                 | 57 |
| Unregistering a JBoss environment .....           | 58 |

## Loading PATROL for JBoss Application Server

After you install PATROL for JBoss Application Server, you must load the product KM into the PATROL Console.

---

### NOTE



Before the KM can successfully operate with JBoss Application Server, a default login shell must be defined that is valid for both the JBoss Administration Account and the PATROL Default User Account, as explained in “Default login shell” on page 29.

---

Before loading the product:

- start a PATROL Console
- start a PATROL Agent on each machine that you want to monitor



**NOTE**

PATROL for JBoss Application Server can start even if no JBoss Application Server is running. However, in this case only the highest level icons are generated.

---

1. Add those hosts on which PATROL for JBoss Application Server is running to the PATROL Console by selecting **Hosts => Add**.
2. Load the product knowledge files. From the PATROL Console menu, select **File => Load KM...**

The product knowledge files are loaded.

3. Select the **PJB.kml** file, and then click **Open**.
4. From the PATROL Console menu, select **File => Save Configuration**. Save your console configuration so that PATROL automatically loads the selected KM the next time you start the PATROL Console.

## Initial KM setup

Initial KM setup consists of providing configuration information that defines your JBoss Application Server environment to the PATROL monitoring environment.

## Registering a JBoss environment

This section describes the process of registering a new JBoss environment.



- 1 Access the **JBossSetup** icon and select **KM Commands => Register New Environment**.

Figure 4 Register JBoss environment dialog

The screenshot shows a dialog box titled "Register JBoss environment". It contains the following fields and options:

- Environment name: [Empty text box]
- Host name: localhost
- JMX port: 1090
- JBoss user name: admin
- JBoss password: [Empty text box]
- JBoss home: c:\jboss-5.1.0.GA
- Java home: C:\Program Files\java
- OS user name: patrol
- OS password: [Empty text box]
- Set collection mode:
  - Clustered
  - Standalone

Buttons at the bottom: OK, Cancel, Help.

- 2 In the Register JBoss environment dialog box, enter the host name of a local or remote host in the **Host name** text box.

You can enter either a host name or an IP address in the **Host name** text box. IP addresses can be in the IPv4 or IPv6 format.

---

— **EXAMPLE** —

[2001:db8:28:3:f98a:5b31:67b7:67ef] is an IPv6 address.

---

- 3 Enter the JMX port number that the KM will use in the **JMX port** text box.




---

**NOTE**


---

The default value of the JMX port number depends on the version of JBoss. For JBoss 4 and JBoss 5, the default value is 1099. For JBoss 6, the default value is 1090.

- For JBoss 4, the JMX port number is defined by the `jboss:service=Naming mbean` at the `Port` attribute in the `JBOSS_HOME/server/ServerName/conf/jboss-service.xml` file.
  - For JBoss 5, the JMX port number is defined by the `jboss:service=Naming mbean` at the `Port` attribute in the `JBOSS_HOME/server/ServerName/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml` file.
  - For JBoss 6, the JMX port number is defined by the `jboss.remoting:service=JMXConnectorServer,protocol=rmi mbean` at the `port` attribute in the `JBOSS_HOME/server/ServerName/conf/bindingservice.beans/META-INF/bindings-jboss-beans.xml` file.
- 

- 4 (Optional) Enter a valid JBoss Application Server account user name in the **JBoss user name** text box.
- 5 (Optional) Enter the password for the JBoss Application Server account in the **JBoss password** text box.

---

**NOTE**


---



**JBoss user name** and **JBoss password** are optional, only if both text boxes are left blank.

---

- 6 Enter the path of the directory in which JBoss Application Server is installed on the local host in the **JBoss home** text box.

---

**NOTE**


---



The version of JBoss installed on the local host must be the same as on the monitored server.

---

- 7 Enter the path of the directory in which Java is installed on the local host in the **Java home** text box. PATROL for JBoss Application Server supports only version 1.6 of Oracle® JRE (Java Runtime Environment).
- 8 Enter a valid operating system user name for the computer on which Jboss Application Server is installed in the **OS user name** text box.




---

**NOTE**


---

The operating system user account must have read and execute permissions for the **JBoss home** directory, execute permissions for the **Java home** directory, and full access to the **../Patrol3/PJB\_JBoss** directory.

PATROL for JBoss Application Server supports RMI authentication for JBoss 4 and JBoss 5, and JSR-160 authentication for JBoss 6.

---

- 9 Enter the password for the operating system user account in the **OS password** text box.
- 10 Click the **Clustered** or **Standalone** to select the data collection mode in the Set collection mode panel.
- 11 Click **OK**.

## Enabling and disabling Java debugging

To enable or disable Java debugging for a JBoss environment, access the icon of the JBoss environment, and select **KM Commands => Debug => Toggle Java Debug**.

This option toggles the activation of Java debugging. If Java debugging is currently disabled, selecting this option enables it. Alternately, if Java debugging is currently enabled, selecting this option disables it.




---

**NOTE**


---

You must set the value of the default `javaLogFilePath` pconfig variable before you can use the Java debug functionality. This enables the environment-specific version of the `javaLogFilePath` pconfig variable for any new JBoss environment that you register.

For more information, see the `javaLogFilePath` pconfig variable on pages [92](#) and [92](#).

---

## Enabling and disabling PSL debugging

To enable or disable PSL debugging for a JBoss environment, access the icon of the JBoss environment, and select **KM Commands => Debug => Toggle PSL Debug**.

This option toggles the activation of PSL debugging. If PSL debugging is currently disabled, selecting this option enables it. Alternately, if PSL debugging is currently enabled, selecting this option disables it.



---

**NOTE**

You must set the value of the default `logFileName` pconfig variable before you can use the PSL debug functionality. For more information, see [“logFileName” on page 92](#).

---

## Selecting collection categories

You can select or change the collection categories that are being used by a JBoss environment at any time.

- 1 Access the icon of the JBoss environment, and select **KM Commands => Select Collection Categories**.
- 2 In the Select collection categories dialog box, select the check boxes of all the collection categories that you want to use. To disable a collection category, clear the corresponding check box.
- 3 Click **OK**.

---

**NOTE**



The collection categories that you select are applied for all servers in the JBoss environment.

If you unselect any of the collection categories later, only data collection is stopped. The category itself does not get deleted from the GUI.

---

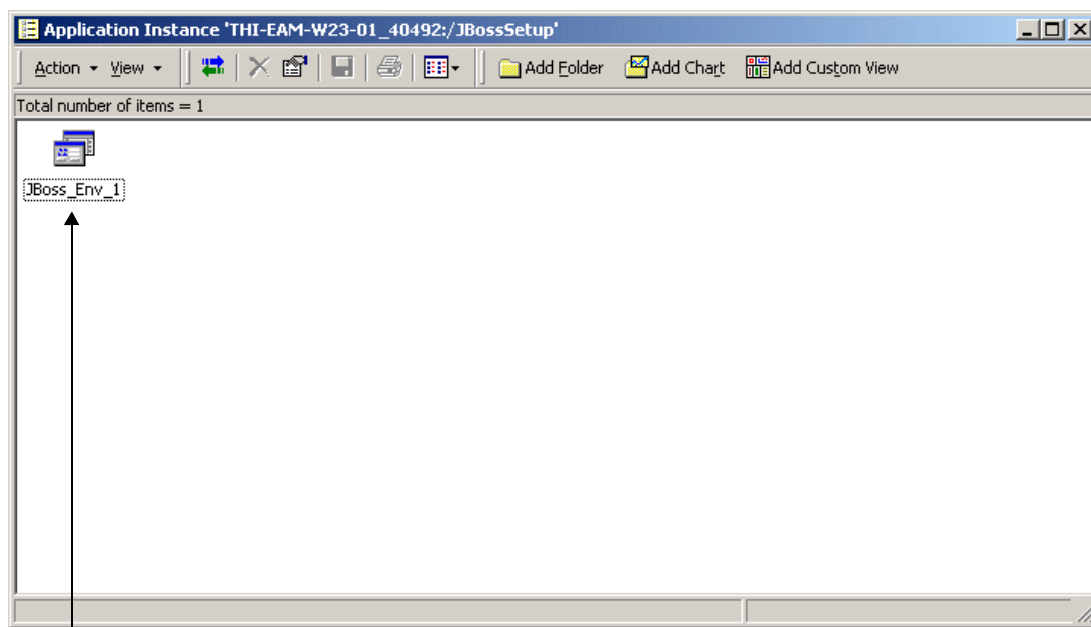
After you have completed initial setup, verify that all the JBoss objects that you expect have been discovered by following instructions in [“Verifying discovery” on page 55](#).

# Verifying discovery

After you have set up your JBoss Application Server, verify that the JBoss icon appears in the PATROL Console. Verify that all servers, containers, and instances that you expect to see are discovered and are displaying appropriate performance data.

1. From the **PatrolMainMap**, open the computer window and verify that the JBoss icon is present. The icon in the following figure is a container that represents the environment under a JBoss administration server.

**Figure 5 JBoss Icons in PATROL Console**



Icon representing a JBoss environment

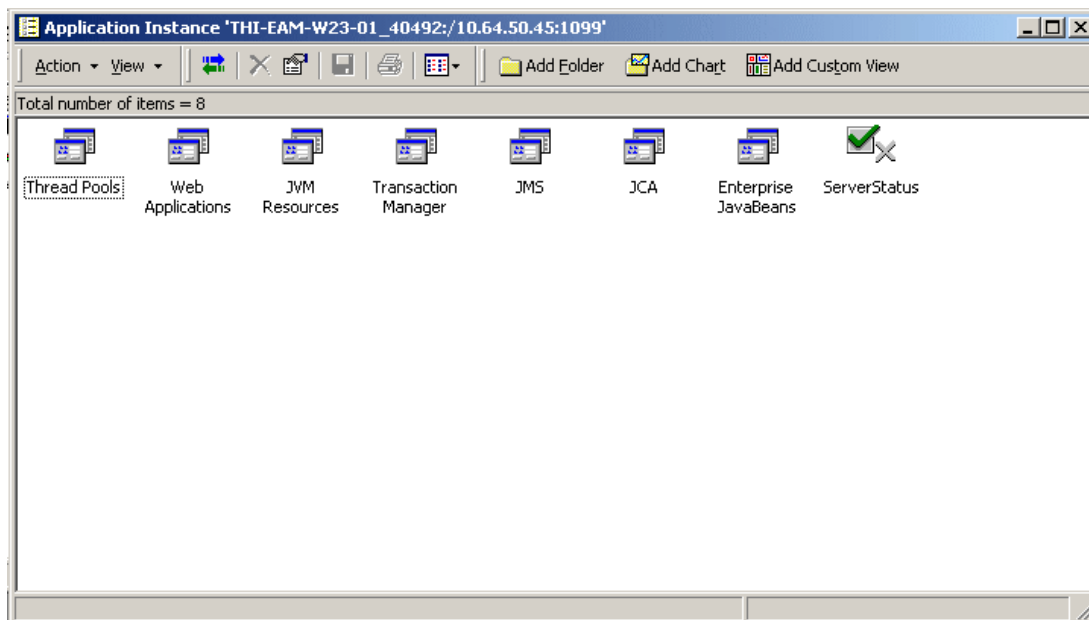
2. Double-click the JBoss icon to see which application servers are being monitored.

There are as many application server instances at this level as you registered. If you went through the configuration process only once for a single server, you see one server instance icon.

To add more servers, repeat the setup process described on [page 50](#).

3. Double-click a server instance icon.

In the PATROL window, you should see several icons, that correspond to the container application classes described in [Chapter 1, “Product components and capabilities.”](#)



4. Double-click one of the container icons. You should see subservices or parameters that you selected for activation. If you do not see the parameters or subservices that you expected, you might have missed a step in setting up performance monitoring, including setting the application server to the required performance monitoring level.
5. Continue double-clicking container icons and reviewing parameters until you are satisfied that the system is being correctly monitored.

## Resolving potential setup problems

If your JBoss environment is not fully discovered or performance parameters are missing or incorrect, it might indicate one of the following configuration problems:

- **Communication with the JBoss Application Server fails:** If communication with the JBoss server fails, check to see if you entered the correct setup parameters while setting up the JBoss environment. See “Editing a JBoss environment” on page 3-57.
- **Monitoring for the JBoss Application Server fails to start:** If monitoring fails to start for the JBoss Application Server, ensure that you entered a valid OS User Name, and OS Password while setting up the JBoss environment.



- **PATROL Agent is unable to read data received through the channel for the Jboss environment:** If the PATROL Agent fails to read data received from the JBoss environment, restart the PATROL Agent.

## Where to go from here

You are now ready to monitor and manage your JBoss Application Server environment. For the KM to interact successfully with JBoss Application Server, the right accounts must be in place and have the access that they require.

For information about changing the settings in your JBoss Application Server environment, see [“Editing a JBoss environment” on page 57](#).

For information about removing JBoss Application Server environments from PATROL Console, see [“Unregistering a JBoss environment” on page 58](#).

For information about parameters, menu commands, or detailed information about using features of PATROL for JBoss Application Server, see the other chapters in this user guide, or see the Help.

## Editing a JBoss environment

This section describes the process of changing the settings in an existing JBoss environment.

- 1 Access the icon of the JBoss environment, and select **KM Commands => Edit Environment**.
- 2 In the Edit JBoss environment dialog box, modify the JBoss environment setting as needed.

For more information about the fields that you can modify in the Edit JBoss environment dialog box, refer to [“Registering a JBoss environment” on page 51](#).

- 3 Click **OK**.

---

### NOTE



- You cannot change the name of a JBoss environment after you register it. The **Environment name** field in the **Edit JBoss environment** dialog box is read-only.
  - If you change the host name, JMX port, or collection mode, the existing JBoss environment configuration will be deleted.
-

# Unregistering a JBoss environment

This section describes the process of removing an existing JBoss environment.

- 1 Access the icon of the JBoss environment, and select **KM Commands => Unregister Environment**.
- 2 Click **OK**.

## Accessing menu commands, InfoBoxes, and online Help

BMC Software offers several PATROL consoles from which you can view a PATROL Knowledge Module (KM). Because of the different environments in which these consoles run, each one uses a different method to display and access information in the KM. This appendix provides instructions for accessing the KM menu commands, InfoBoxes, and online Help on each of the PATROL consoles. See the PATROL for JBoss Application Server online Help for more detailed information about navigation in the PATROL Consoles.

|   |    |
|---|----|
| Accessing KM commands and InfoBoxes ..... | 59 |
| Accessing online Help .....               | 60 |

### Accessing KM commands and InfoBoxes

Table 5 provides information about how to access KM commands and InfoBoxes from the various PATROL consoles.

**Table 5** Accessing KM Commands and InfoBoxes

| Console                                      | To access menu commands  | To access InfoBoxes  |
|--|--|--|
| PATROL Console for Microsoft Windows Servers | In either the <b>Desktop</b> tree tab or work area, right-click a computer or application icon and select <b>KM Commands</b> from the pop-up menu. | In either the <b>Desktop</b> tree tab or the work area, right-click an application class or parameter icon and select <b>InfoBox</b> from the pop-up menu. |
| PATROL Console for Unix                      | In the work area, right-click a computer or application icon to display a pop-up menu that contains KM-specific commands.                          | With the middle mouse button, click an application class or parameter icon.  |
| PATROL Central Operator - Windows Edition    | In the navigation pane, right-click a managed system or application icon and select <b>Knowledge Module Commands</b> from the pop-up menu.         | In the navigation pane, right-click a PATROL object and select <b>InfoBox</b> from the pop-up menu.  |
| PATROL Central Operator - Web Edition        | In the tree view area, right-click an application icon and select <b>Knowledge Module Commands</b> from the pop-up menu.                           | In the tree view area, right-click a PATROL object and select <b>Infobox</b> from the pop-up menu.   |

## Accessing online Help

Table 6 on page 61 provides information about how to access Help from each console.

**NOTE**



If you are trying to access Help from a UNIX console, see the *PATROL Installation Reference Manual* for specific instructions about installing and setting up a browser in the UNIX environment.

**Table 6** Accessing online Help

| Console                                      | To access product Help  | To access application class Help  | To access parameter Help  |
|--|---|---|---|
| PATROL Console for Microsoft Windows Servers | <ul style="list-style-type: none"> <li>■ Right-click the product application icon and select <b>KM Commands =&gt; Product Help</b>.</li> <li>■ From the console menu bar, select <b>Help =&gt; Help Topics =&gt; PATROL Knowledge Modules</b>.</li> </ul> | Double-click an application class in the <b>KM</b> tab of the console. From the Application Properties dialog box, click the <b>Help</b> tab. Then click <b>Show Help</b> . | <ul style="list-style-type: none"> <li>■ Right-click a parameter icon and select <b>Help On</b> from the pop-up menu.</li> <li>■ Double-click a parameter icon; click the ? icon or <b>Help</b> button in the parameter display window.</li> <li>■ Double-click a parameter in the <b>KM</b> tab of the console; from the properties dialog box, click the <b>Help</b> tab; then click <b>Show Help</b>.</li> </ul> |
| PATROL Console for Unix                      | <ul style="list-style-type: none"> <li>■ Right-click the product application icon and select <b>KM Commands =&gt; Product Help</b>.</li> <li>■ From the console menu bar, select <b>Help On =&gt; Knowledge Modules</b>.</li> </ul>                       | Select <b>Attributes =&gt; Application Classes</b> and double-click the application name. Click <b>Show Help</b> in the Application Definition dialog box.                  | Right-click a parameter icon and click <b>Help On</b> .   |
| PATROL Central Operator - Windows Edition    | From the console menu bar, select Help => Help Topics. In the <b>Contents</b> tab, click the name of your product.  | In the <b>Operator</b> tab of the navigation pane, select an application icon and press <b>F1</b> .   | In the <b>Operator</b> tab of the navigation pane, select a parameter icon and press <b>F1</b> .  |
| PATROL Central Operator - Web Edition        | In the upper right corner of PATROL Central, click <b>Help</b> and select <b>PATROL KM Help</b> .   | In the tree view, right-click an application class and select <b>Help</b> .   | In the tree view, right-click a parameter and select <b>Help</b> .  |



## Parameter reference

The PATROL for JBoss Application Server product contains many parameters that provide statistical information about resources, operating status, and performance.

Some of the parameters are available for use with only one version of JBoss Application Server. This information is noted below each parameter description.

This appendix contains the following sections:

|                                  |    |
|----------------------------------|----|
| Column headings defined. . . . . | 63 |
| Abbreviations defined. . . . .   | 65 |
| Core parameters . . . . .        | 65 |

## Column headings defined

Column headings in [Table 7](#) are defined as follows:

|                    |  |
|--------------------|--|
| <b>Description</b> | states the parameter name and describes the parameter's function; for consumer parameters, lists the collector parameters that gather the data displayed by this parameter   |
| <b>Active?</b>     | <p>indicates two things:</p> <ul style="list-style-type: none"> <li>■ whether a parameter is active by default—this information is reflected in the words <b>yes</b> or <b>no</b></li> <li>■ whether a parameter requires that JVM profiling or J2EE bytecode instrumentation be activated through the service setup process as explained in –if this information applies, it will appear as a second line in the cell with the word <b>prof</b> or <b>inst</b></li> </ul> <p><b>Note:</b> BMC Software recommends that profiling be used only in test and development environments.</p> |

|                                 |  |
|---------------------------------|--|
| <b>Parameter Type</b>           | indicates the parameter type: standard (std) gathers and displays a single data value; collector (coll) gathers multiple data values but has no display capabilities; consumer (con) displays values gathered by collector or standard parameters. Some standards have collector properties. |
| <b>Alarm1 Range<sup>a</sup></b> | specifies the thresholds for the first-level alarm; not applicable to collector parameters   |
| <b>Alarm2 Range<sup>a</sup></b> | specifies the thresholds for the second-level alarm; not applicable to collector parameters  |
| <b>Scheduling (poll time)</b>   | specifies how frequently the parameter will run and collect data (polling cycle); not applicable to consumer parameters  |
| <b>Icon Style</b>               | specifies whether the parameter is represented as a graph, gauge, text box, stop light (signal), or boolean state  |
| <b>Unit</b>                     | specifies the unit of measure in which the parameter output is expressed, such as a percentage, a number, or bytes   |

<sup>a</sup>Border, Alarm1, and Alarm2 ranges that are also labeled inactive by default may not be recommended ranges for the parameter.



# Abbreviations defined

The following abbreviations may be used in [Table 7](#):

|              |   |
|--------------|---|
| <b>bool</b>  | Boolean; shows a state, such as on or off, OK or not OK   |
| <b>coll</b>  | collector parameter                                       |
| <b>con</b>   | consumer parameter  |
| <b>disc</b>  | discovery; refers to the PATROL discovery process         |
| <b>GB</b>    | gigabyte or gigabytes                                     |
| <b>hr</b>    | hour or hours   |
| <b>KB</b>    | kilobyte or kilobytes                                     |
| <b>MB</b>    | megabyte or megabytes                                     |
| <b>MHz</b>   | megahertz   |
| <b>min</b>   | minute or minutes   |
| <b>msec</b>  | millisecond or milliseconds                               |
| <b>NA</b>    | not applicable; a value cannot be set                     |
| <b>nsec</b>  | nanosecond or nanoseconds                                 |
| <b>sec</b>   | second or seconds   |
| <b>std</b>   | standard parameter  |
| <b>TB</b>    | terabyte or terabytes                                     |
| <b>undef</b> | undefined; a value can be set, but no default is provided |
| <b>warn</b>  | warning; type of alert                                    |

## Core parameters

The parameters in this table constitute the largest group of parameters in the KM, and apply to the application classes beginning with the **PJB\_** prefix.

Table 7 PATROL for JBoss Application Server core parameters (Part 1 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon          | Units             |
|--|---------|------|------------------|----------------|------------|---------------|-------------------|
| <b>PJB_CLUSTER application class</b>   |         |      |                  |                |            |               |                   |
| <b>ClusterAvailability</b> (PJP_CLUSTER)<br><br>Displays the availability of the cluster during the collection interval<br><br><b>Collector:</b> ClusterStatus<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                      | yes     | con  | undef            | undef          | undef      | graph         | %                 |
| <b>ClusterStatus</b> (PJP_CLUSTER)<br><br>Displays the status of the cluster, based on the activity status of the servers within the cluster.<br><br><b>Collector:</b> ServerStatus<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | State Boolean | 0=Ok, 1=Not Ok    |
| <b>PJB_CLUSTERED_SERVER application class</b>  |         |      |                  |                |            |               |                   |
| <b>ServerStatus</b> (PJB_CLUSTERED_SERVER )<br><br>Displays the status of the server.<br><br><b>Collector:</b> ClusterStatus<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | State Boolean | 0=Ok, 1=Not Ok    |
| <b>PJB_CONNECTION_THREAD_POOL application class</b>  |         |      |                  |                |            |               |                   |
| <b>CurrentThreadCount</b> (PJB_CONNECTION_POOL THREAD)<br><br>Displays the current number of threads.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                                    | yes     | con  | undef            | undef          | undef      | graph         | number of threads |
| <b>CurrentThreadsBusy</b> (PJB_CONNECTION_POOL THREAD)<br><br>Displays the current number of busy threads<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                                | yes     | con  | undef            | undef          | undef      | graph         | number of threads |
| <b>PJB_EJB2 application class</b>  |         |      |                  |                |            |               |                   |

Table 7 PATROL for JBoss Application Server core parameters (Part 2 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                              |
|--|---------|------|------------------|----------------|------------|-------|------------------------------------|
| <b>CacheSize</b> (PJB_EJB2)<br>Displays the size of the cache.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of bean instances           |
| <b>CreateCount</b> (PJB_EJB2)<br>Displays the number of EJB2 session bean instances created since the server was most recently started.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                | yes     | con  | undef            | undef          | undef      | graph | number of bean instances           |
| <b>CurrentSize</b> (PJB_EJB2)<br>Displays the number of EJB2 session bean instances in the pool.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of bean instances           |
| <b>MaxSize</b> (PJB_EJB2)<br>Displays the maximum number of EJB2 session beans in the pool.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of bean instances           |
| <b>PassivatedCount</b> (PJB_EJB2)<br>Displays the current number of passivated session beans.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of passivated session beans |
| <b>RemoveCount</b> (PJB_EJB2)<br>Displays the number of EJB2 session bean instances that have been removed since the server was most recently started.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of session bean instances   |

Table 7 PATROL for JBoss Application Server core parameters (Part 3 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                            |
|--|---------|------|------------------|----------------|------------|-------|----------------------------------|
| <b>PJB_EJB3 application class</b>  |         |      |                  |                |            |       |                                  |
| <b>AvailableCount</b> (PJB_EJB3)<br>Displays the number of available EJB3 session bean instances in the pool<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of session bean instances |
| <b>CreateCount</b> (PJB_EJB3)<br>Displays the number of EJB3 session bean instances that have been created since the server was most recently started.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of session bean instances |
| <b>CurrentSize</b> (PJB_EJB3)<br>Current number of EJB3 session bean instances in the pool.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of session bean instances |
| <b>MaxSize</b> (PJB_EJB3)<br>Displays the maximum number of EJB3 session bean instances in the pool.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of session bean instances |
| <b>RemoveCount</b> (PJB_EJB3)<br>Displays the number of EJB3 session bean instances removed since the server was most recently started.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                | yes     | con  | undef            | undef          | undef      | graph | number of session bean instances |
| <b>PJB_ENVIRONMENT application class</b>   |         |      |                  |                |            |       |                                  |

Table 7 PATROL for JBoss Application Server core parameters (Part 4 of 20)

|   | Active? | Type     | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon          | Units                           |
|---|---------|----------|------------------|----------------|------------|---------------|---------------------------------|
| <b>RegistrationStatus</b> (PJB_ENVIRONMENT)<br><br>Displays the registration status of the JBoss environment.<br><br><b>Collector:</b> RegistrationStatus<br><b>JBOSS version:</b> 4.0, 5.0, 6.0              | yes     | standard | 1                | undef          | 1 min      | State Boolean | 0=Ok, 1=Not Ok                  |
| <b>PJB_GARBAGE_COLLECTION application class</b>   |         |          |                  |                |            |               |                                 |
| <b>CollectionCount</b> (PJB_GARBAGE_COLLECTION)<br><br>Displays the number of collections performed of unused objects.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                | yes     | con      | undef            | undef          | undef      | graph         | number of collections           |
| <b>CollectionTime</b> (PJB_GARBAGE_COLLECTION)<br><br>Displays the duration of the collection process.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                                | yes     | con      | undef            | undef          | undef      | graph         | sec                             |
| <b>PJB_JCA application class</b>  |         |          |                  |                |            |               |                                 |
| <b>AvailableConnectionCount</b> (PJB_JCA)<br><br>Displays the number of available connections (MBean attribute).<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0            | yes     | con      | undef            | undef          | undef      | graph         | number of available connections |
| <b>BackgroundValidationMillis</b> (PJB_JCA)<br><br>Displays the duration in milliseconds taken to perform background validation.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0, 6.0 | yes     | con      | undef            | undef          | undef      | graph         | ms                              |
| <b>BlockingTimeoutMillis</b> (PJB_JCA)<br><br>Displays the duration in milliseconds of the Blocking timeout.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                | yes     | con      | undef            | undef          | undef      | graph         | ms                              |

Table 7 PATROL for JBoss Application Server core parameters (Part 5 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                 |
|---|---------|------|------------------|----------------|------------|-------|-----------------------|
| <b>ConnectionCount</b> (PJB_JCA)<br><br>Displays the number of connections (MBean attribute)<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                        | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>ConnectionCreatedCount</b> (PJB_JCA)<br><br>Displays the number of connections created (MBean attribute)<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0         | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>ConnectionDestroyedCount</b> (PJB_JCA)<br><br>Displays the number of destroyed connections (MBean attribute)<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0     | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>IdleTimeoutMinutes</b> (PJB_JCA)<br><br>Displays the duration in minutes of Idle timeout.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                        | yes     | con  | undef            | undef          | undef      | graph | minutes               |
| <b>InUseConnectionCount</b> (PJB_JCA)<br><br>Displays the number of connections currently in use (MBean attribute).<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>MaxSize</b> (PJB_JCA)<br><br>Displays the maximum size of the MBean.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of connections |

Table 7 PATROL for JBoss Application Server core parameters (Part 6 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                           |
|--|---------|------|------------------|----------------|------------|-------|---------------------------------|
| <b>MinSize</b> (PJB_JCA)<br><br>Displays the minimum size of the MBean<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of connections           |
| <b>PJB_JCA_V4 application class</b>  |         |      |                  |                |            |       |                                 |
| <b>AvailableConnectionCount</b> (PJB_JCA_V4)<br><br>Displays the number of available connections (MBean attribute).<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of available connections |
| <b>BackGroundValidationMinutes</b> (PJB_JCA_V4)<br><br>Displays the duration in minutes taken to perform background validation<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0 | yes     | con  | undef            | undef          | undef      | graph | minutes                         |
| <b>BlockingTimeoutMillis</b> (PJB_JCA_V4)<br><br>Displays the duration in milliseconds of Blocking timeout.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0                    | yes     | con  | undef            | undef          | undef      | graph | ms                              |
| <b>ConnectionCount</b> (PJB_JCA_V4)<br><br>Displays the number of connections (MBean attribute)<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                      | yes     | con  | undef            | undef          | undef      | graph | number of connections           |
| <b>ConnectionCreatedCount</b> (PJB_JCA_V4)<br><br>Displays the number of connections created (MBean attribute)<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0       | yes     | con  | undef            | undef          | undef      | graph | number of connections           |

Table 7 PATROL for JBoss Application Server core parameters (Part 7 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                 |
|--|---------|------|------------------|----------------|------------|-------|-----------------------|
| <b>ConnectionDestroyedCount</b> (PJB_JCA_V4)<br><br>Displays the number of destroyed connections (MBean attribute)<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>IdleTimeoutMinutes</b> (PJB_JCA_V4)<br><br>Displays the duration in minutes of Idle timeout.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0                              | yes     | con  | undef            | undef          | undef      | graph | minutes               |
| <b>InUseConnectionCount</b> (PJB_JCA_V4)<br><br>Displays the number of connections currently in use<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0                          | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>MaxSize</b> (PJB_JCA_V4)<br><br>Displays the maximum size of the MBean.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>MinSize</b> (PJB_JCA_V4)<br><br>Displays the minimum size of the MBean<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of connections |
| <b>PJB_JMS_QUEUE application class</b>   |         |      |                  |                |            |       |                       |
| <b>ConsumerCount</b> (PJB_JMS_QUEUE)<br><br>Displays the number of current consumers.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of consumers   |



Table 7 PATROL for JBoss Application Server core parameters (Part 8 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units              |
|---|---------|------|------------------|----------------|------------|-------|--------------------|
| <b>DeliveringCount</b> (PJB_JMS_QUEUE)<br><br>Displays the number of unacknowledged messages in this queue being delivered.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0             | yes     | con  | undef            | undef          | undef      | graph | number of messages |
| <b>MessagesAdded</b> (PJB_JMS_QUEUE)<br><br>Displays the number of messages added to this queue since it was initially created.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0         | yes     | con  | undef            | undef          | undef      | graph | number of messages |
| <b>MessageCount</b> (PJB_JMS_QUEUE)<br><br>Number of messages waiting for delivery in this queue.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                                       | yes     | con  | undef            | undef          | undef      | graph | number of messages |
| <b>ScheduledCount</b> (PJB_JMS_QUEUE)<br><br>Number of scheduled messages in this queue waiting for scheduled delivery.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                 | yes     | con  | undef            | undef          | undef      | graph | number of messages |
| <b>JB_JMS_QUEUE_V4 application class</b>  |         |      |                  |                |            |       |                    |
| <b>MessageCount</b> (PJB_JMS_QUEUE_V4)<br><br>Displays the number of messages waiting for delivery in this queue.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0                       | yes     | con  | undef            | undef          | undef      | graph | number of messages |
| <b>ScheduledCount</b> (PJB_JMS_QUEUE_V4)<br><br>Displays the number of scheduled messages in this queue waiting for scheduled delivery.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0 | yes     | con  | undef            | undef          | undef      | graph | number of messages |
| <b>PJB_JMS_QUEUE_V5 application class</b>   |         |      |                  |                |            |       |                    |

Table 7 PATROL for JBoss Application Server core parameters (Part 9 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                 |
|---|---------|------|------------------|----------------|------------|-------|-----------------------|
| <b>ConsumerCount</b> (PJB_JMS_QUEUE_V5)<br>Displays current number of consumers<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0   | yes     | con  | undef            | undef          | undef      | graph | number of consumers   |
| <b>DeliveringCount</b> (PJB_JMS_QUEUE_V5)<br>Displays number of unacknowledged messages in this queue being delivered.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0                | yes     | con  | undef            | undef          | undef      | graph | number of messages    |
| <b>MessageCount</b> (PJB_JMS_QUEUE_V5)<br>Displays number of messages awaiting delivery in this queue.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0                                | yes     | con  | undef            | undef          | undef      | graph | number of messages    |
| <b>ScheduledCount</b> (PJB_JMS_QUEUE_V5)<br>Displays the number of scheduled messages in this queue awaiting delivery<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 5.0                 | yes     | con  | undef            | undef          | undef      | graph | number of messages    |
| <b>PJB_JMS_TOPIC application class</b>  |         |      |                  |                |            |       |                       |
| <b>DurableMessageCount</b> (PJB_JMS_TOPIC)<br>Displays the number of messages sent to all durable subscribers to this topic.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0,6.0 | yes     | con  | undef            | undef          | undef      | graph | number of messages    |
| <b>DurableSubscriptionCount</b> (PJB_JMS_TOPIC)<br>Displays the number of durable subscribers to this topic.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                | yes     | con  | undef            | undef          | undef      | graph | number of subscribers |

Table 7 PATROL for JBoss Application Server core parameters (Part 10 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                       |
|---|---------|------|------------------|----------------|------------|-------|-----------------------------|
| <p><b>MessageCount</b> (PJB_JMS_TOPIC)</p> <p>Displays the number of messages sent to all subscribers to this topic.</p> <p><b>Collector:</b> collectCategories<br/><b>JBOSS version:</b> 4.0, 5.0, 6.0</p>                       | yes     | con  | undef            | undef          | undef      | graph | number of messages          |
| <p><b>NonDurableMessageCount</b> (PJB_JMS_TOPIC)</p> <p>Displays the number of messages sent to all non-durable subscribers to this topic.</p> <p><b>Collector:</b> collectCategories<br/><b>JBOSS version:</b> 4.0, 5.0, 6.0</p> | yes     | con  | undef            | undef          | undef      | graph | number of messages          |
| <p><b>NonDurableSubscriptionCount</b> (PJB_JMS_TOPIC)</p> <p>Displays the number of non-durable subscribers to this topic.</p> <p><b>Collector:</b> collectCategories<br/><b>JBOSS version:</b> 4.0, 5.0, 6.0</p>                 | yes     | con  | undef            | undef          | undef      | graph | number of subscribers       |
| <p><b>SubscriptionCount</b> (PJB_JMS_TOPIC)</p> <p>Displays the total number of (durable and non-durable) subscribers to this topic.</p> <p><b>Collector:</b> collectCategories<br/><b>JBOSS version:</b> 4.0, 5.0, 6.0</p>       | yes     | con  | undef            | undef          | undef      | graph | number of subscribers       |
| <b>PJB_JSP application class</b>  |         |      |                  |                |            |       |                             |
| <p><b>JSPCount</b> (PJB_JSP)</p> <p>Displays the number of Java server pages that have been loaded to a webapp.</p> <p><b>Collector:</b> collectCategories<br/><b>JBOSS version:</b> 4.0, 5.0, 6.0</p>                            | yes     | con  | undef            | undef          | undef      | graph | number of Java server pages |
| <p><b>JSPReloadCount</b> (PJB_JSP)</p> <p>Displays the number of of Java server pages that have been reloaded to a webapp.</p> <p><b>Collector:</b> collectCategories<br/><b>JBOSS version:</b> 4.0, 5.0, 6.0</p>                 | yes     | con  | undef            | undef          | undef      | graph | number of Java server pages |

Table 7 PATROL for JBoss Application Server core parameters (Part 11 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                  |
|---|---------|------|------------------|----------------|------------|-------|------------------------|
| <b>PJB_JTA application class</b>  |         |      |                  |                |            |       |                        |
| <b>NumberOfAbortedTransactions</b> (PJB_JTA)<br>Displays the number of aborted transactions.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>NumberOfApplicationRollbacks</b> (PJB_JTA)<br>Displays the number of application transactions that have been rolled back (MBean attribute).<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>NumberOfCommittedTransactions</b> (PJB_JTA)<br>Displays the number of transactions that have been committed since startup (MBean attribute).<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>NumberOfHeuristics</b> (PJB_JTA)<br>Displays the number of heuristics<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of heuristics   |
| <b>NumberOfInflightTransactions</b> (PJB_JTA)<br>Displays the number of inflight transactions (MBean attribute).<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                                | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>NumberOfNestedTransactions</b> (PJB_JTA)<br>Displays the number of nested transactions (MBean attribute).<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                                    | yes     | con  | undef            | undef          | undef      | graph | number of transactions |

Table 7 PATROL for JBoss Application Server core parameters (Part 12 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                  |
|---|---------|------|------------------|----------------|------------|-------|------------------------|
| <b>NumberOfResourceRollbacks</b> (PJB_JTA)<br>Displays the number of resource transactions that have been rolled back (MBean attribute)<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>NumberOfTimedOutTransactions</b> (PJB_JTA)<br>Displays the number of timed-out transactions (MBean attribute).<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                       | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>NumberOfTransactions</b> (PJB_JTA)<br>Displays the number of transactions currently open (MBean attribute)<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                           | yes     | con  | undef            | undef          | undef      | graph | number of transactions |
| <b>PJB_JVM application class</b>  |         |      |                  |                |            |       |                        |
| <b>ActiveThreadCount</b> (PJB_JVM)<br>Displays the number of active threads.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0   | yes     | con  | undef            | undef          | undef      | graph | number of threads      |
| <b>ActiveThreadGroupCount</b> (PJB_JVM)<br>Displays the number of active thread groups.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                                       | yes     | con  | undef            | undef          | undef      | graph | number of groups       |
| <b>FreeMemory</b> (PJB_JVM)<br>Displays the amount of available free memory in the JVM heap.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                                  | yes     | con  | undef            | undef          | undef      | graph | Mbyte                  |

Table 7 PATROL for JBoss Application Server core parameters (Part 13 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units             |
|---|---------|------|------------------|----------------|------------|-------|-------------------|
| <b>MaxMemory</b> (PJB_JVM)<br><br>Displays the maximum amount of memory allocated to the JVM heap.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                        | yes     | con  | undef            | undef          | undef      | graph | Mbyte             |
| <b>MemoryUsage</b> (PJB_JVM)<br><br>Displays the memory in use expressed as a percentage of total memory.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                 | yes     | con  | undef            | undef          | 5 min      | graph | %                 |
| <b>TotalMemory</b> (PJB_JVM)<br><br>Displays the current size of the JVM heap.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | Mbyte             |
| <b>PJB_JVM_CLASSLOADING application class</b>   |         |      |                  |                |            |       |                   |
| <b>LoadedClassCount</b> (PJB_JVM_CLASSLOADING)<br><br>Displays the number of classes currently loaded in the virtual machine.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0       | yes     | con  | undef            | undef          | undef      | graph | number of classes |
| <b>TotalLoadedClassCount</b> (PJB_JVM_CLASSLOADING)<br><br>Displays the number of classes loaded since starting the virtual machine<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of classes |

Table 7 PATROL for JBoss Application Server core parameters (Part 14 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units                      |
|--|---------|------|------------------|----------------|------------|-------|----------------------------|
| <b>UnloadedClassCount</b> (PJB_JVM_CLASSLOADING)<br><br>Number of classes unloaded since starting the virtual machine.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0           | yes     | con  | undef            | undef          | undef      | graph | number of classes          |
| <b>PJB_JVM_OS application class</b>  |         |      |                  |                |            |       |                            |
| <b>CommittedVirtualMemorySize</b> (PJB_JVM_OS)<br><br>Displays the size of virtual memory used by the JVM.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                       | yes     | con  | undef            | undef          | undef      | graph | Mbyte                      |
| <b>FreePhysicalMemorySize</b> (PJB_JVM_OS)<br><br>Displays the amount of free physical memory available to the operating system.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con  | undef            | undef          | undef      | graph | Mbyte                      |
| <b>FreeSwapSpaceSize</b> (PJB_JVM_OS)<br><br>Displays the amount of free swap space available to the operating system.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0           | yes     | con  | undef            | undef          | undef      | graph | Mbyte                      |
| <b>OpenFileDescriptorCount</b> (PJB_JVM_OS)<br><br>Displays the number of open file descriptors.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                                 | yes     | con  | undef            | undef          | undef      | graph | number of file descriptors |
| <b>PJB_JVM_THREAD application class</b>  |         |      |                  |                |            |       |                            |

Table 7 PATROL for JBoss Application Server core parameters (Part 15 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units             |
|---|---------|------|------------------|----------------|------------|-------|-------------------|
| <b>DaemonThreadCount</b> (PJB_JVM_THREAD)<br>Displays the number of daemon threads in the system.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of threads |
| <b>PeakThreadCount</b> (PJB_JVM_THREAD)<br>Displays the peak number of threads in the system.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of threads |
| <b>ThreadCount</b> (PJB_JVM_THREAD)<br>Displays the number of active threads in the system.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0   | yes     | con  | undef            | undef          | undef      | graph | number of threads |
| <b>TotalStartedThreadCount</b> (PJB_JVM_THREAD)<br>Displays the number of threads initiated in the system since the server was most recently started.<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of threads |
| <b>PJB_MEMORY_POOL application class</b>  |         |      |                  |                |            |       |                   |
| <b>CollectionUsageThreshold</b> (PJB_MEMORY_POOL)<br>Displays the memory in KB remaining in memory pool after garbage collection<br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0                      | yes     | con  | undef            | undef          | undef      | graph | number of KB      |



Table 7 PATROL for JBoss Application Server core parameters (Part 16 of 20)

|  | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units             |
|--|---------|------|------------------|----------------|------------|-------|-------------------|
| <b>CollectionUsageThresholdCount</b><br>(PJB_MEMORY_POOL)<br><br>Displays the number of times that garbage collection has been performed since the the server was most recently started.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con  | undef            | undef          | undef      | graph | number of times   |
| <b>UsageThreshold</b> (PJB_MEMORY_POOL)<br><br>Displays the current value in KB of the memory pool usage threshold.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of KB      |
| <b>UsageThresholdCount</b> (PJB_MEMORY_POOL)<br><br>Displays the number of times that the usage threshold has been reached.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of times   |
| <b>PJB_QUEUE_THREAD_POOL application class</b>   |         |      |                  |                |            |       |                   |
| <b>CurrentThreadCount</b><br>(PJB_QUEUE_THREAD_POOL)<br><br>Displays the current number of threads.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of threads |
| <b>LargestThreadCount</b> (PJB_QUEUE_THREAD_POOL)<br><br>Displays the largest number of threads since the server was most recently started.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con  | undef            | undef          | undef      | graph | number of threads |

Table 7 PATROL for JBoss Application Server core parameters (Part 17 of 20)

|   | Active? | Type       | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units             |
|---|---------|------------|------------------|----------------|------------|-------|-------------------|
| <b>RejectedCount</b> (PJB_threadsTHREAD_POOL)<br><br>Displays the number of rejected threads.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0   | yes     | con        | undef            | undef          | undef      | graph | number of threads |
| <b>PJB_QUEUELESS_THREAD_POOL application class</b>  |         |            |                  |                |            |       |                   |
| <b>CurrentThreadCount</b> (PJB_QUEUELESS_THREAD_POOL)<br><br>Displays the current number of threads.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0  | yes     | con        | undef            | undef          | undef      | graph | number of threads |
| <b>LargestThreadCount</b> (PJB_QUEUELESS_THREAD_POOL)<br><br>Displays the largest number of threads since the server was most recently started.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0 | yes     | con        | undef            | undef          | undef      | graph | number of threads |
| <b>RejectedCount</b> (PJB_QUEUELESS_THREAD_POOL)<br><br>Displays the number of rejected threads since the server was most recently started<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 6.0      | yes     | con        | undef            | undef          | undef      | graph | number of threads |
| <b>JB_REGISTERED_ENVIRONMENT application class</b>  |         |            |                  |                |            |       |                   |
| <b>collectCategories</b> (PJB_REGISTERED_ENVIRONMENT)<br><br>Reads the discovered categories and values from the admin client<br><br><b>Collector:</b> N/A<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                       | yes     | collect or | undef            | undef          | 10 sec     | undef | undef             |

Table 7 PATROL for JBoss Application Server core parameters (Part 18 of 20)

|  | Active? | Type     | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon          | Units                   |
|--|---------|----------|------------------|----------------|------------|---------------|-------------------------|
| <b>PatrolCollectionStatus</b><br>(PJB_REGISTERED_ENVIRONMENT)<br><br>Displays the status of PATROL collection<br><br><b>Collector:</b> PatrolCollectionStatus<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                                   | yes     | standard | 1                | undef          | 1 min      | State Boolean | 0=OK<br>1= not OK       |
| <b>PJB_SERVER application class</b>  |         |          |                  |                |            |               |                         |
| <b>ServerStatus</b> (PJB_SERVER)<br><br>Displays the status of the server.<br><br><b>Collector:</b> ServerStatus<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | standard | 1                | undef          | 1 min      | State Boolean | 0=Running<br>1= Stopped |
| <b>PJB_SERVLET application class</b>   |         |          |                  |                |            |               |                         |
| <b>ClassLoadTime</b> (PJB_SERVLET)<br><br>Displays the time required to load a class.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con      | undef            | undef          | undef      | graph         | ms                      |
| <b>ErrorCount</b> (PJB_SERVLET)<br><br>Displays the number of servlet requests that encountered errors or exceptions during the collection interval.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con      | undef            | undef          | undef      | graph         | number of requests      |
| <b>LoadTime</b> (PJB_SERVLET)<br><br>Displays the time required to load the servlet.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con      | undef            | undef          | undef      | graph         | ms                      |
| <b>maxTime</b> (PJB_SERVLET)<br><br>Displays the maximum processing time of a request.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con      | undef            | undef          | undef      | graph         | ms                      |

Table 7 PATROL for JBoss Application Server core parameters (Part 19 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units |
|---|---------|------|------------------|----------------|------------|-------|-------|
| <b>minTime</b> (PJB_SERVLET)<br><br>Displays the minimum processing time of a request.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0  | yes     | con  | undef            | undef          | undef      | graph | ms    |
| <b>ProcessingTime</b> (PJB_SERVLET)<br><br>Displays the time required to complete a servlet request during the collection interval.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | graph | ms    |
| <b>RequestCount</b> (PJB_SERVLET)<br><br>Displays the number of requests processed by the servlet during the collection interval.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | ms    |
| <b>PJB_WAR application class</b>  |         |      |                  |                |            |       |       |
| <b>CacheMaxSize</b> (PJB_WAR)<br><br>Displays the maximum cache size in MB.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0   | yes     | con  | undef            | undef          | undef      | graph | Mbyte |
| <b>ProcessingTime</b> (PJB_WAR)<br><br>Displays the cumulative execution times of all servlets in this context.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                     | yes     | con  | undef            | undef          | undef      | graph | ms    |

Table 7 PATROL for JBoss Application Server core parameters (Part 20 of 20)

|   | Active? | Type | Warning (Alarm1) | Alarm (Alarm2) | Scheduling | Icon  | Units |
|---|---------|------|------------------|----------------|------------|-------|-------|
| <b>StartupTime</b> (PJB_WAR)<br><br>Displays the time in milliseconds taken to start this context.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0                              | yes     | con  | undef            | undef          | undef      | graph | ms    |
| <b>UnloadDelay</b> (PJB_WAR)<br><br>Displays the time duration in milliseconds that the container waits for servlets to unload.<br><br><b>Collector:</b> collectCategories<br><b>JBOSS version:</b> 4.0, 5.0, 6.0 | yes     | con  | undef            | undef          | undef      | graph | ms    |



# Menu summary

This chapter summarizes the application menus and menu commands for the PATROL for JBoss Application Server product. The following topics are discussed in this chapter:

- Core product application class menus ..... 87
  - PJB\_SETUP application menu ..... 87
  - PJB\_ENVIRONMENT application menu ..... 88

## Core product application class menus

The menus explained in this section are associated with the application classes for the PATROL for JBoss Application Server product. Each of these classes begins with the designation *PJB\**.

### PJB\_SETUP application menu

The menu commands in [Table 8](#) are the PATROL KM menu commands for the PJB\_SETUP application class.

**Table 8** PJB\_SETUP commands

| Menu command             | Action                                      |
|--------------------------|---|
| Register New Environment | Click to configure a new JBoss environment. |

## PJB\_ENVIRONMENT application menu

The menu commands in [Table 9](#) are the PATROL KM menu commands for the PJB\_ENVIRONMENT application class.

**Table 9** PJB\_ENVIRONMENT commands

| Menu Command                 | Action  |
|------------------------------|---|
| Unregister Environment       | Click to unregister the JBoss environment.  |
| Edit Environment             | Click to change the configuration of the JBoss environment.<br><br><b>Note:</b> If you change the Host name, JMX port, or collection type, the existing JBoss environment configuration will be deleted. You cannot change the name of a JBoss Environment. |
| Select Collection Categories | Click to set the data collection categories that you want to use for the JBoss environment.   |
| Toggle Java Debug            | Click to toggle Java debugging.<br><br>If Java debugging is currently disabled, selecting this option enables it. Alternately, if Java debugging is currently enabled, selecting this option disables it.   |
| Toggle PSL Debug             | Click to toggle PSL debugging.<br><br>If PSL debugging is currently disabled, selecting this option enables it. Alternately, if PSL debugging is currently enabled, selecting this option disables it.  |



# Product InfoBoxes

This chapter summarizes InfoBoxes available in the PATROL for JBoss Application Server product. Some application classes may appear only if certain features are enabled in your environment or configured for your PATROL monitoring environment.

The following topics are discussed in this chapter:

|  |    |
|--|----|
| Standard InfoBox fields.....                   | 89 |
| Core product application class InfoBoxes ..... | 90 |
| PJB_ENVIRONMENT InfoBox .....                  | 90 |

## Standard InfoBox fields

Table 10 lists the fields that are standard for all application class InfoBoxes in the PATROL for JBoss Application Server product. All other InfoBox fields explained in this chapter appear in addition to these standard fields.

**Table 10 PATROL for JBoss Application Server standard InfoBox fields**

| Item              | Description  |
|-------------------|--|
| History Retention | number of days for which a current history has been kept                             |
| Worst Parameter   | name of the parameter with the worst performance in the application class            |
| Default username  | account name used if not otherwise specified   |
| Application class | name of the application class (PATROL application class, not Java application class) |
| State             | current state of the application, such as “OK,” “running,” or “stopped”              |
| Icon type         | icon type—for application class InfoBoxes, this will be “Application”                |

# Core product application class InfoBoxes

The application class InfoBoxes explained in this section are part of the core PATROL for JBoss Application Server product. Each of these application classes begins with *PJB\_\**.

## PJB\_ENVIRONMENT InfoBox

Table 11 lists the items beyond standard InfoBox items for the PJB\_ENVIRONMENT application class.

**Table 11** PJB\_ENVIRONMENT application class InfoBox items

| Item             | Description  |
|------------------|--|
| KM Version       | displays the version number of the KM.   |
| Host Name        | displays the Host Name of the JBoss Application Server that you want to monitor.   |
| JMX Port         | displays the JMX Port that the KM uses to connect to the JBoss Application Server. |
| User Name        | displays the JBoss Application Server account user name.                           |
| Admin Client PID | displays the Java admin client process ID.   |

# Agent configuration variables

The variables described in this section are PATROL for JBoss Application Server variables that are set in the PATROL Agent. You can use the PATROL Configuration Manager or the wpconfig utility to view variable settings or to deploy them to others machines. See the *PATROL Configuration Manager User Guide* or the *PATROL Agent Reference Manual* for more information.

## — WARNING —



Changing any of these variables may prevent some functions from working properly, and may affect your entire installation. Make a record of the original setting for a variable before you change it.

## — WARNING —



Many PATROL for JBoss Application Server variables are set by menu commands or functions. Do not use the wpconfig utility or PATROL Configuration Manager to remove variables or add new variables. Doing so may prevent some functions from working properly and can affect your entire installation. BMC Software recommends that you set agent configuration variables by using a console to configure PATROL for JBoss Application Server.

## — NOTE —



Some of the variables described in this appendix may not appear in your environment. Some variables exist only when their corresponding features are enabled or when non-default performance options are selected.

**Table 12 Agent variables used by PATROL for JBoss Application Server (Part 1 of 3)**

| Variable   | Description  | Location                       |
|--|--|--------------------------------|
| <b>Agent variables located in /JBossSetup/Defaults</b> |  |                                |
| JAVA_HOME  | specifies the path to the default Java Home directory. | /JBossSetup/Defaults/JAVA_HOME |

**Table 12 Agent variables used by PATROL for JBoss Application Server (Part 2 of 3)**

| Variable   | Description  | Location   |
|--|--|--|
| javaLogFilePath  | specifies the default path for Java debugging.                                     | /JBossSetup/Defaults/javaLogFilePath               |
| JBOSS_HOME   | provides the path to the default JBoss Home directory.                             | /JBossSetup/Defaults/JBOSS_HOME                    |
| logFileName  | specifies the full path with file name for PSL debugging.                          | /JBossSetup/Defaults/logFileName                   |
| OSusername   | specifies the default operating system account user name.                          | /JBossSetup/Defaults/OSusername                    |
| <b>Agent variables located in /JBossSetup/Environments</b> |  |  |
| adminPassword  | contains the JBoss Application Server admin account password for the environment.  | /JBossSetup/Environments/<EnvName>/adminPassword   |
| adminUsername  | contains the JBoss Application Server admin account user name for the environment. | /JBossSetup/Environments/<EnvName>/adminUsername   |
| doDiscovery  | discovers categories.  | /JBossSetup/Environments/<EnvName>/doDiscovery     |
| doEdit   | saves the changes that you make in the environment settings.                       | /JBossSetup/Environments/<EnvName>/doEdit          |
| EnvType  | specifies the type of environment.   | /JBossSetup/Environments/<EnvName>/EnvType         |
| Hostname   | contains the JBoss server host name specified in the environment.                  | /JBossSetup/Environments/<EnvName>/Hostname        |
| JAVA_HOME  | contains the path to the Java Home directory specified in the environment.         | /JBossSetup/Environments/<EnvName>/JAVA_HOME       |
| javaLogFilePath  | contains the default path for Java debugging for the environment.                  | /JBossSetup/Environments/<EnvName>/javaLogFilePath |
| JBOSS_HOME   | contains the path to the JBoss Home directory specified in the environment.        | /JBossSetup/Environments/<EnvName>/JBOSS_HOME      |
| jmxPort  | contains the JMX port number for the environmen.                                   | /JBossSetup/Environments/<EnvName>/jmxPort         |
| OSpassword   | contains the operating system user account password specified in the environment.  | /JBossSetup/Environments/<EnvName>/OSpassword      |
| OSusername   | contains the operating system user name specified in the environment.              | /JBossSetup/Environments/<EnvName>/OSusername      |
| PJB_EJB  | discovers the EJB category for the environment.                                    | /JBossSetup/Environments/<EnvName>/PJB_EJB         |

**Table 12 Agent variables used by PATROL for JBoss Application Server (Part 3 of 3)**

| Variable    | Description   | Location                                       |
|-------------|---|--|
| PJB_JCA     | discovers the JCA category for the environment.     | /JBossSetup/Environments/<EnvName>/PJB_JCA     |
| PJB_JMS     | discovers the JMS category for the environment.     | /JBossSetup/Environments/<EnvName>/PJB_JMS     |
| PJB_JTA     | discovers the JTA category for the environment.     | /JBossSetup/Environments/<EnvName>/PJB_JTA     |
| PJB_JVM     | discovers the JVM category for the environment.     | /JBossSetup/Environments/<EnvName>/PJB_JVM     |
| PJB_SERVLET | discovers the SERVLET category for the environment. | /JBossSetup/Environments/<EnvName>/PJB_SERVLET |
| PJB_THREAD  | discovers the THREAD category for the environment.  | /JBossSetup/Environments/<EnvName>/PJB_THREAD  |
| PJB_WAR     | discovers the WAR category for the environment.     | /JBossSetup/Environments/<EnvName>/PJB_WAR     |



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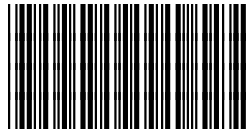
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## Notes



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