

Symantec™ ApplicationHA Agent for JBoss Application Server Configuration Guide

Linux on VMware

6.2

Symantec™ ApplicationHA Agent for JBoss Application Server Configuration Guide

The software described in this book is furnished under a license agreement and may be used only in accordance with the terms of the agreement.

Agent version: 5.1.3.0

Document version: 6.2. Rev 0

Legal Notice

Copyright © 2014 Symantec Corporation. All rights reserved.

Symantec, the Symantec Logo, the Checkmark Logo, Veritas, Veritas Storage Foundation, CommandCentral, NetBackup, Enterprise Vault, and LiveUpdate are trademarks or registered trademarks of Symantec Corporation or its affiliates in the U.S. and other countries. Other names may be trademarks of their respective owners.

The product described in this document is distributed under licenses restricting its use, copying, distribution, and decompilation/reverse engineering. No part of this document may be reproduced in any form by any means without prior written authorization of Symantec Corporation and its licensors, if any.

THE DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. SYMANTEC CORPORATION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

The Licensed Software and Documentation are deemed to be commercial computer software as defined in FAR 12.212 and subject to restricted rights as defined in FAR Section 52.227-19 "Commercial Computer Software - Restricted Rights" and DFARS 227.7202, "Rights in Commercial Computer Software or Commercial Computer Software Documentation", as applicable, and any successor regulations, whether delivered by Symantec as on premises or hosted services. Any use, modification, reproduction release, performance, display or disclosure of the Licensed Software and Documentation by the U.S. Government shall be solely in accordance with the terms of this Agreement.

Symantec Corporation
350 Ellis Street
Mountain View, CA 94043

<http://www.symantec.com>

Technical Support

Symantec Technical Support maintains support centers globally. Technical Support's primary role is to respond to specific queries about product features and functionality. The Technical Support group also creates content for our online Knowledge Base. The Technical Support group works collaboratively with the other functional areas within Symantec to answer your questions in a timely fashion. For example, the Technical Support group works with Product Engineering and Symantec Security Response to provide alerting services and virus definition updates.

Symantec's support offerings include the following:

- A range of support options that give you the flexibility to select the right amount of service for any size organization
- Telephone and/or Web-based support that provides rapid response and up-to-the-minute information
- Upgrade assurance that delivers software upgrades
- Global support purchased on a regional business hours or 24 hours a day, 7 days a week basis
- Premium service offerings that include Account Management Services

For information about Symantec's support offerings, you can visit our website at the following URL:

www.symantec.com/business/support/index.jsp

All support services will be delivered in accordance with your support agreement and the then-current enterprise technical support policy.

Contacting Technical Support

Customers with a current support agreement may access Technical Support information at the following URL:

www.symantec.com/business/support/contact_techsupp_static.jsp

Before contacting Technical Support, make sure you have satisfied the system requirements that are listed in your product documentation. Also, you should be at the computer on which the problem occurred, in case it is necessary to replicate the problem.

When you contact Technical Support, please have the following information available:

- Product release level
- Hardware information

- Available memory, disk space, and NIC information
- Operating system
- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
 - Error messages and log files
 - Troubleshooting that was performed before contacting Symantec
 - Recent software configuration changes and network changes

Licensing and registration

If your Symantec product requires registration or a license key, access our technical support Web page at the following URL:

www.symantec.com/business/support/

Customer service

Customer service information is available at the following URL:

www.symantec.com/business/support/

Customer Service is available to assist with non-technical questions, such as the following types of issues:

- Questions regarding product licensing or serialization
- Product registration updates, such as address or name changes
- General product information (features, language availability, local dealers)
- Latest information about product updates and upgrades
- Information about upgrade assurance and support contracts
- Information about the Symantec Buying Programs
- Advice about Symantec's technical support options
- Nontechnical presales questions
- Issues that are related to CD-ROMs or manuals

Support agreement resources

If you want to contact Symantec regarding an existing support agreement, please contact the support agreement administration team for your region as follows:

Asia-Pacific and Japan	customercare_apj@symantec.com
Europe, Middle-East, and Africa	semea@symantec.com
North America and Latin America	supportsolutions@symantec.com

About Symantec Connect

Symantec Connect is the peer-to-peer technical community site for Symantec's enterprise customers. Participants can connect and share information with other product users, including creating forum posts, articles, videos, downloads, blogs and suggesting ideas, as well as interact with Symantec product teams and Technical Support. Content is rated by the community, and members receive reward points for their contributions.

<http://www.symantec.com/connect/storage-management>

Documentation

Product guides are available on the media in PDF format. Make sure that you are using the current version of the documentation. The document version appears on page 2 of each guide. The latest product documentation is available on the Symantec website.

<https://sort.symantec.com/documents>

Your feedback on product documentation is important to us. Send suggestions for improvements and reports on errors or omissions. Include the title and document version (located on the second page), and chapter and section titles of the text on which you are reporting. Send feedback to:

doc_feedback@symantec.com

For information regarding the latest HOWTO articles, documentation updates, or to ask a question regarding product documentation, visit the Storage and Clustering Documentation forum on Symantec Connect.

<https://www-secure.symantec.com/connect/storage-management/forums/storage-and-clustering-documentation>

Contents

Technical Support	4	
Chapter 1	Introducing the Symantec ApplicationHA Agent for JBoss Application Server	9
	About the Symantec ApplicationHA agent for JBoss Application Server	9
	About installing and removing the ApplicationHA agent for JBoss Application Server	10
	Supported software	10
	Supported application versions	10
	Supported VMware versions	10
	Supported guest operating systems	11
	Agent functions	12
	Online	12
	Offline	12
	Monitor	12
	Clean	12
	Uniquely identifying JBoss Application Server Configurations	13
Chapter 2	Configuring application monitoring with Symantec ApplicationHA	14
	About configuring application monitoring with ApplicationHA	14
	Before configuring application monitoring for JBoss Application Server	15
	Launching the Symantec ApplicationHA Configuration Wizard	15
	Configuring application monitoring for JBoss Application Server	17
Chapter 3	Troubleshooting the agent for JBoss Application Server	22
	Starting the JBoss Application Server Configuration outside the Symantec ApplicationHA environment	22
	Reviewing error log files	25
	Using JBoss Application Server log files	25
	Reviewing ApplicationHA log files	25

	Reviewing cluster log files	25
	Using trace level logging	26
	Using agent for JBoss Application Server log files	27
Appendix A	Resource type definitions	28
	About the resource type and attribute definitions	28
	Resource type definition	28
	Attribute definition	29
Appendix B	Detail monitoring	38
	Setting the PATH variable	38
	Setting up detail monitoring for ApplicationHA agent for JBoss	
	Application Server	38

Introducing the Symantec ApplicationHA Agent for JBoss Application Server

This chapter includes the following topics:

- [About the Symantec ApplicationHA agent for JBoss Application Server](#)
- [About installing and removing the ApplicationHA agent for JBoss Application Server](#)
- [Supported software](#)
- [Agent functions](#)
- [Uniquely identifying JBoss Application Server Configurations](#)

About the Symantec ApplicationHA agent for JBoss Application Server

The Symantec ApplicationHA agents monitor specific resources within an enterprise application. They determine the status of resources and start or stop them according to external events. The Symantec ApplicationHA agent for JBoss Application Server provides high availability for one or more JBoss Application Server Configuration.

About installing and removing the ApplicationHA agent for JBoss Application Server

When you install or uninstall Symantec ApplicationHA, the ApplicationHA agent for JBoss Application Server is automatically installed or removed. For more information, see the *Symantec ApplicationHA Installation and Upgrade Guide*.

When you run the installer or uninstall program that accompanies the quarterly agent pack release of high availability agents from Symantec, the latest version of the ApplicationHA agent for JBoss Application Server is automatically installed or removed. For more information, see the *Symantec ApplicationHA Agent Pack Installation Guide*.

Supported software

The Symantec ApplicationHA agent for JBoss Application Server supports the following software versions:

- Symantec ApplicationHA agent for JBoss Application Server can be installed and run inside virtual machines that have Symantec ApplicationHA 6.2 installed.
- The following versions of the Veritas Operations Manager components are supported:
 - Veritas Operations Manager Management Server 6.0 or later
 - Veritas Operations Manager managed host for Linux: 6.0 or later

Supported application versions

[Table 1-1](#) lists the JBoss Application Server versions that Symantec ApplicationHA 6.1 currently supports on virtual machine.

Table 1-1 Supported application versions

Application	Version
JBoss Application Server	5.x and 6.x

Note: Install all JBoss Application Server components including JBossWS-CXF.

Supported VMware versions

The following VMware Servers and management clients are currently supported:

- VMware ESX Server version 4.1 Update 3, 5.0 Update 2, and 5.1
- VMware ESXi Server version 5.0 Update 2, 5.1 Update 1 and 5.5
- VMware vCenter Server version 4.1 Update 2, 5.0, 5.1, and 5.5

Note: VMware Fault Tolerance is not supported in case of vCenter Server 4.1

- VMware vSphere Client version 4.1 Update 2, 5.0, 5.1, and 5.5
- VMware vCenter Site Recovery Manager (SRM) 5.0 and 5.1

Supported guest operating systems

[Table 1-2](#) shows the supported operating systems for this release.

Table 1-2 Supported guest operating systems

Operating systems	Levels	Kernel version
Oracle Linux 6 Note: Installation from vSphere Client menu is not supported on OL 6.	Update 3 , 4	2.6.32-279.el6 2.6.32-358.el6
Red Hat Enterprise Linux 6	Update 3, 4, 5	2.6.32-279.el6 2.6.32-358.el6 2.6.32-431
Red Hat Enterprise Linux 7	-	3.10.0-123
SUSE Linux Enterprise 11	SP 2 SP 3	3.0.13-0.27.1 3.0.76-0.11.1

Note: 64-bit operating systems are only supported.

If your system is running a lower level of either Red Hat Enterprise Linux, SUSE Linux Enterprise Server, or Oracle Linux, than indicated in [Table 1-2](#), you must upgrade it before attempting to install Symantec ApplicationHA. Consult the Red Hat, SUSE, or Oracle documentation for more information on upgrading or reinstalling your system.

Symantec supports only Oracle, Red Hat, and SUSE distributed kernel binaries.

Symantec products operate on subsequent kernel and patch releases provided the operating systems maintain kernel ABI (application binary interface) compatibility.

Agent functions

The agent consists of resource type declarations and agent executables. The agent executables are organized into online, offline, monitor, and clean functions.

Online

When you click **Start Application**, ApplicationHA ensures that the JBoss Application Server Configurations are running.

Offline

When you click **Stop Application**, ApplicationHA ensures that the resource is given enough time to go offline successfully. The offline function uses a wait period that the `OfflineTimeout` attribute specifies. This enables the JBoss Application Server Configuration to complete the offline sequence before allowing further probing of the resource.

Monitor

The monitor function conducts a first level check on the JBoss Application Server Configuration to ensure that the process of JBoss Application Server Configuration is running. The agent identifies the process for the JBoss Application Server component by applying the pattern matching on command lines of processes running in the system.

In JBoss Application Server version 5.x, second level check uses the `twiddle.sh` utility.

In JBoss Application Server version 6.x, second level check uses the `jboss-cli.sh` utility.

Clean

The clean function attempts to gracefully shut down the JBoss Application Server Configuration. If the shut down is not successful, then the agent identifies the server configuration process and kills it.

Uniquely identifying JBoss Application Server Configurations

You can configure one or more JBoss Application Server Configurations running on a single virtual host but the Application HA agent must be able to identify each configuration separately. This is done using the installation path of the JBoss Application Server and the server configuration name. The installation path is given by the attribute JBossHome and the ServerConfig attributes gives the server configuration name. It is important that the agent for JBoss Application Server can uniquely identify a configuration on a node that is hosting more than one simultaneous JBoss Application Server Configurations. The agent must identify the server configuration process before the agent kills the process of a non-responsive or a failed configuration.

for more details about the attributes.

Configuring application monitoring with Symantec ApplicationHA

This chapter includes the following topics:

- [About configuring application monitoring with ApplicationHA](#)
- [Before configuring application monitoring for JBoss Application Server](#)
- [Launching the Symantec ApplicationHA Configuration Wizard](#)
- [Configuring application monitoring for JBoss Application Server](#)

About configuring application monitoring with ApplicationHA

This chapter describes the steps to configure application monitoring with ApplicationHA in a virtualization environment.

Consider the following points before you proceed:

- You configure an application for monitoring on a virtual machine using the Symantec ApplicationHA Configuration Wizard.
- You can launch the Symantec ApplicationHA Configuration Wizard from the VMware vSphere Client or from the Veritas Operations Manager Management Server console. See [“Launching the Symantec ApplicationHA Configuration Wizard”](#) on page 15.
- In this release, the wizard allows you to configure monitoring for only one application per virtual machine.

To configure another application using the wizard, you must first unconfigure the existing application monitoring.

- After you have configured monitoring for an application using the wizard, you can configure monitoring for other applications residing in the same virtual machine, using Symantec Cluster Server (VCS) commands.
 For more information read the following technote:
<http://www.symantec.com/docs/TECH159846>
- If you are using the Symantec ApplicationHA Configuration Wizard to configure JBoss Application Server, note that only JBoss Application Server version 5.x is supported.

Before configuring application monitoring for JBoss Application Server

Ensure that you complete the following tasks before configuring application monitoring for JBoss Application Server on a virtual machine:

- Install ApplicationHA Console.
- Install ApplicationHA guest components on the virtual machine that you need to monitor.
- Install VMware Tools on the virtual machine. Install a version that is compatible with VMware ESX server.
- Install the VMware vSphere Client.
- Assign ApplicationHA - Configure Application Monitoring (Admin) privileges to the logged-on user on the virtual machine where you want to configure application monitoring.
- Install the application and the associated components that you wish to monitor on the virtual machine.
- If you have configured a firewall, ensure that your firewall settings allow access to ports used by ApplicationHA installer, wizards, and services.
 Refer to the *Symantec ApplicationHA Installation and Upgrade Guide* for a list of ports and services used.

Launching the Symantec ApplicationHA Configuration Wizard

You can launch the Symantec ApplicationHA Configuration Wizard using:

- VMware vSphere Client: [To configure application monitoring for JBoss Application Server](#)
- Veritas Operations Manager (VOM) Management Server console: [To launch the wizard from the VOM Management Server console](#)

To configure application monitoring for JBoss Application Server

- 1 Launch the VMware vSphere Client and connect to the VMware vCenter Server that hosts the virtual machine.

The vSphere Client is used to configure and control application monitoring.

- 2 From the vSphere Client's Inventory view in the left pane, select the virtual machine where you want to configure application monitoring for JBoss Application Server.

- 3 From the vSphere Client's Management view in the right pane, click the **Symantec High Availability** tab.

The Symantec High Availability view displays the status of all the supported applications that are installed on the selected virtual machine.

- 4 In the Symantec High Availability view, click **Configure Application Monitoring**.

This launches the Symantec ApplicationHA Configuration Wizard.

To launch the wizard from the VOM Management Server console

- 1 Log on to the VOM Management Server console.
- 2 Select the Server perspective and expand Manage in the left pane.
- 3 Expand the Organization, or Uncategorized Hosts to navigate to the virtual machine.
- 4 Right-click the required virtual machine, and then click **Manage ApplicationHA**.
- 5 Click **Configure Application Monitoring**.

This launches the Symantec ApplicationHA Configuration Wizard.

Configuring application monitoring for JBoss Application Server

Perform the following steps to configure monitoring for JBoss Application Server on a virtual machine.

- 1 Launch the Symantec ApplicationHA Configuration Wizard. See [“Launching the Symantec ApplicationHA Configuration Wizard”](#) on page 15.
- 2 Review the information on the Welcome screen and then click **Next**.
The wizard lists all the supported applications for the system.
- 3 Select **JBoss Application Server** and then click **Next**.
The JBoss Application Server Specification screen appears.
- 4 On the JBoss Application Server Specification page, enter the JBoss Home Directory and the Server Configuration Base Directory. Then click **Next**.
The JBoss Application Server Configuration screen appears.

Note: In JBoss Application Server version 5.x, the server configurations which have no bootstrap beans to load into the micrcontainer and no deployments, are not shown in the list of server configurations on Application Inputs page. For example, `minimal`.

To verify the bootstrap beans loaded into the micrcontainer with server deployment, the ApplicationHA framework checks for the presence of the files `jboss-beans.xml` and `bootstrap.xml`, located at:

`ServerBaseDir/ServerConfig/deployers/jbossws.deployer/META-INF/jboss-beans.xml`

`ServerBaseDir/ServerConfig/conf/bootstrap.xml`

Note: In JBoss Application Server version 6.x, only standalone mode configuration is supported. The ApplicationHA framework checks for the presence of the `standalone.xml` file inside the configuration directory located at:

`ServerBaseDir/configuration/standalone.xml`.

If the `standalone.xml` file is not present, use `ConfigurationDir` (optional attribute) to specify the location of the configuration file.

- 5 Select the various JBoss Application Server configurations that you want to monitor. The various configurations are shown in a list on the left side. You can enable one or more configurations to monitor.

For each JBoss Application Server version 5.x configuration, enter the following fields:

User	System User under which the JBoss Application Server is executed.
Administrative User	Administrative user within JBoss Application Server.
Administrative Password	Password of Administrative user within JBoss Application Server.
Startup Arguments	Startup arguments to pass the startup script of JBoss Application Server (optional).
Environment File	Optional environment file to source before starting JBoss Application Server (optional).
Binding Set	The name of the set of bindings to use for the JBoss Application Server Configuration. Every server configuration has unique binding set like default-port, port-01 or port-02, and so on
JNDI Url	Modify the default value of the IP address and the port in the link which appears by default in the JNDI Url field according to your JBoss Application Server settings. <i>jnp://ipaddress:port</i>

For each JBoss Application Server version 6.x configuration, enter the following fields:

User	System User under which the JBoss Application Server is executed.
Component	Component or mode for which the resource is being configured. ApplicationHA supports the Standalone mode.
Management Address	A combination of an IP address and port number that is used to specify the management bind address and the controller address. Specify this combination in the format IP:Port, where, IP is the management bind address and Port is the controller parameter that is used when executing the <code>jboss-cli.sh</code> utility.
Server Configuration File	The filename of the configuration file that the agent must use. Ensure that you specify only the filename of the configuration file here; use ConfigurationDir (optional attribute) to specify the location of the configuration file.

Configuration Directory	The absolute path of the configuration XML file. For the Standalone mode, the value of this attribute is passed as the command-line parameter '-Djboss.server.config.dir' to the startup script.
Environment file	Optional environment file to source before starting JBoss Application Server.

6 Click **Next**

The wizard will proceed to configure the resources and display their status.

7 Select **JBoss Application Server Configuration, specify the settings, and then click **Next**.**

The wizard performs the application monitoring configuration tasks. The ApplicationHA Configuration screen displays the status of each task.

8 After all the tasks are complete, click **Next.**

Note: If the configuration tasks fail, click **Diagnostic information** to check the details of the failure.

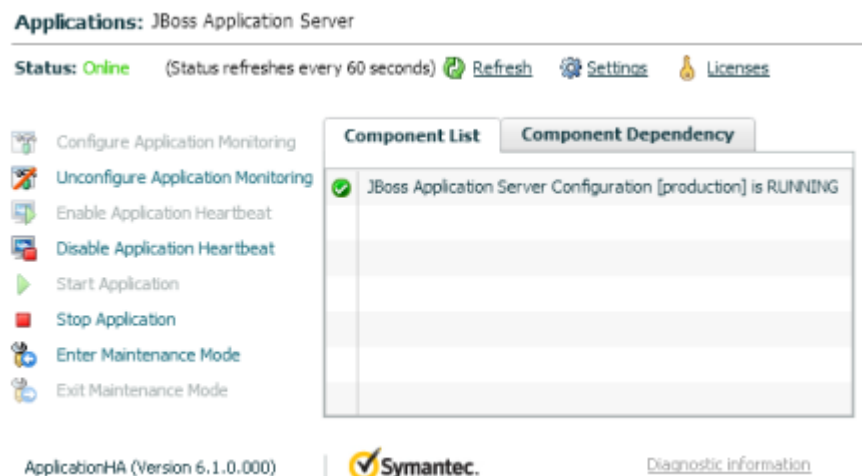
You then have to run the wizard again to configure the application monitoring.

9 Click **Finish to complete the wizard.**

This completes the application monitoring configuration.

- To view the status of the configured application on a virtual machine, in the inventory view of the vSphere Client, click the appropriate virtual machine, and then click the **Symantec High Availability** tab.

The Symantec High Availability view appears.

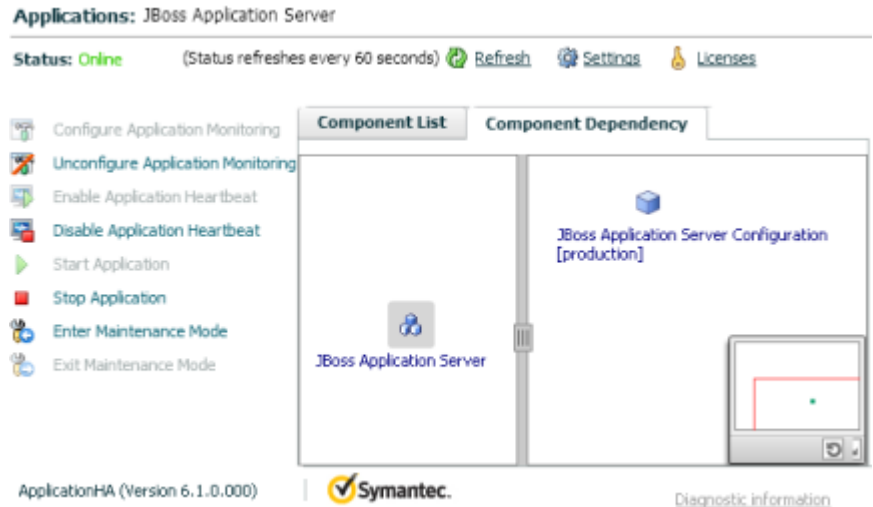


By default, the Component List tab appears. The tab lists each component of the configured application and the status description of each component.

For more information on viewing and administering applications by using the vSphere Client, see the *Symantec ApplicationHA User's Guide*.

- 11 To view component dependency for the monitored application, click the **Component Dependency** tab.

The component dependency graph appears.



By default, the component dependency graph shows the configured resources. The left pane displays component groups and/or configured applications. The right pane displays components of the selected component group or application. For more information on viewing component dependency for any configured application, see the *Symantec ApplicationHA User's Guide*.

Troubleshooting the agent for JBoss Application Server

This chapter includes the following topics:

- [Starting the JBoss Application Server Configuration outside the Symantec ApplicationHA environment](#)
- [Reviewing error log files](#)

Starting the JBoss Application Server Configuration outside the Symantec ApplicationHA environment

If you face problems while working with a resource, you must disable the resource within the cluster framework. A disabled resource is not under the control of the cluster framework, and so you can test the JBoss Application Server Configuration independent of the cluster framework. Refer to the cluster documentation for information about disabling a resource.

You can then restart the JBoss Application Server Configuration outside the cluster framework..

Note: Use the same parameters that the resource attributes define within the cluster framework while restarting the resource outside the cluster framework.

A sample procedure to start a JBoss Application Server Configuration outside the ApplicationHA environment, is illustrated as follows.

JBoss Application Server version 5.x

To start a JBoss Application version 5.x server configuration outside the ApplicationHA environment

- 1
- Log in as superuser onto the host on which the JBoss Application Server Configuration to run.
- 2
- Use the values defined in the agent attributes to initiate the start program.
For example, assume that the following values are assigned:

Attribute	Value
User	root
JBossHome	/usr/local/EnterprisePlatform-5.1.2/jboss-eap-5.1/jboss-as
AdminUser	admin
AdminPassword	admin
ServerConfig	production
ServerBaseDir	/usr/local/EnterprisePlatform-5.1.2/jboss-eap-5.1/jboss-as/server
BindingSet	ports-01
StartArgs	"

In the example below, the IP address used is 127.0.0.1.

- 3
- Go to the bin directory inside the directory specified by JBossHome:

/usr/local/EnterprisePlatform-5.1.2/jboss-eap-5.1/jboss-as/bin

- 4 Start the JBoss Application Server with the following command:

```
./run.sh -c production \
-Djboss.server.base.dir=/usr/local/EnterprisePlatform-5.1.2/ \
jboss-eap-5.1/jboss-as/server \
-Djboss.server.base.url=file:/usr/local/EnterprisePlatform-5.1.2/ \
jboss-eap-5.1/jboss-as/server \
-Djboss.service.binding.set=ports-01 \
-Djava.rmi.server.hostname=127.0.0.1 \
-Djboss.bind.address=127.0.0.1
```

- 5 Ensure that the JBoss Application Server Configuration starts successfully.

If the JBoss Application Server Configuration works properly outside the ApplicationHA framework, you can attempt to implement the server within the framework.

JBoss Application Server version 6.x

To start a JBoss Application version 6.x server configuration outside the ApplicationHA environment

- 1 Log in as superuser onto the host on which the JBoss Application Server Configuration to run.
- 2 Use the values defined in the agent attributes to initiate the start program. For example, assume that the following values are assigned:

Attribute	Value
Version	6.0
Component	Standalone
ServerConfig	standalone.xml
User	root
JBossHome	/jboss-eap-6.2
ManagementAddress	127.0.0.1
ServerBaseDir	/jboss-eap-6.2/standalone
ConfigurationDir	/jboss-eap-6.2/standalone/configuration

In the example below, the IP address used is 127.0.0.1.

- 3 Go to the bin directory inside the directory specified by JBossHome:

```
/jboss-eap-6.2/bin
```

- 4 Start the JBoss Application Server with the following command:

```
/jboss-eap-6.2/bin/standalone.sh
-Djboss.server.config.dir=/jboss-eap-6.2/standalone/configuration
-Djboss.server.base.dir=/jboss-eap-6.2/standalone
-Djboss.bind.address.management=127.0.0.1 -c standalone.xml
```

- 5 Ensure that the JBoss Application Server Configuration starts successfully.

If the JBoss Application Server Configuration works properly outside the ApplicationHA framework, you can attempt to implement the server within the framework.

Reviewing error log files

If you face problems while using JBoss Application Server or the agent for JBoss Application Server, use the log files described in this section to investigate the problems.

Using JBoss Application Server log files

If the JBoss Application Server is facing problems, access the log files of the JBoss Application Server to further investigate the problem. The log files are located as follows:

- `<ServerBaseDir>/<ServerConfig>/log/server.log`
- `<ServerBaseDir>/<ServerConfig>/log/boot.log`

Reviewing ApplicationHA log files

In case of problems while using the agent for JBoss Application Server, you can access the ApplicationHA log files at the following location:

```
/var/VRTSvcs/log/JBoss_A.log
```

Reviewing cluster log files

In case of problems while using the agent for JBoss Application Server, you can also access the engine log file for more information about a particular resource. The engine log files are located at the following location:

The VCS engine log file is `/var/VRTSvcs/log/engine_A.log`.

Using trace level logging

The `ResLogLevel` attribute controls the level of logging that is written in an `ApplicationHA` log file for each JBoss Application Server resource. You can set this attribute to `TRACE`, which enables very detailed and verbose logging.

If you set `ResLogLevel` to `TRACE`, a very high volume of messages are produced. Symantec recommends that you localize the `ResLogLevel` attribute for a particular resource.

Note: The `LogDbg` attribute should be used to enable the debug logs for the `ACCLib`-based agents when the `ACCLIB` version is 6.2.0.0 or later.

To localize `ResLogLevel` attribute for a resource

- 1 Make the `ApplicationHA` configuration writable:

```
# haconf -makerw
```

- 2 Identify the JBoss Application resource for which you want to enable detailed logging.

- 3 Localize the `ResLogLevel` attribute for the identified resource:

```
# /opt/VRTS/bin/hares -local JBoss_<count>_res \
ResLogLevel
```

- 4 Set the `ResLogLevel` attribute to `TRACE` for the identified resource:

```
# /opt/VRTS/bin/hares -modify JBoss_<count>_res \
ResLogLevel TRACE -sys SysA
```

- 5 Note the time before you begin to operate the identified resource.

- 6 Test the identified resource. The function reproduces the problem that you are attempting to diagnose.

- 7 Note the time when the problem is reproduced.

- 8 Set the `ResLogLevel` attribute back to `INFO` for the identified resource:

```
# /opt/VRTS/bin/hares -modify JBoss_<count>_res \
ResLogLevel INFO -sys SysA
```

- 9 Review the contents of the log file. Use the time noted in Step 4 and Step 6 to diagnose the problem.

Using agent for JBoss Application Server log files

In case of problems while using the agent for JBoss Application Server, you can access the agent log files for more information. The agent saves output of every operation process in the temporary folder of the resource system. If the temporary folder is /tmp, the log files are saved using the following naming format:

/tmp/.VRTSAgentName/ResourceName_EntryPointName.out

Let the resource name be JBoss_1_res. For example:

```
/tmp/.VRTSJBoss/JBoss_1_res_online.out
/tmp/.VRTSJBoss/JBoss_1_res_offline.out
/tmp/.VRTSJBoss/JBoss_1_res_clean.out
/tmp/.VRTSJBoss/JBoss_1_res_monitor.out
```

Note: These files are overwritten each time you execute the corresponding operation process. In case you want to save the information, make a copy of the files to another location.

Resource type definitions

This appendix includes the following topics:

- [About the resource type and attribute definitions](#)
- [Resource type definition](#)

About the resource type and attribute definitions

The resource type represents the configuration definition of the agent and specifies how the agent is defined in the configuration file. The attribute definitions describe the attributes associated with the agent. The required attributes describe the attributes that must be configured for the agent to function.

Resource type definition

The following is a sample agent type definition file:

```
type JBoss (
    static boolean AEPTIMEOUT = 1
    static str AgentFile = "/opt/VRTSvcs/bin/Script50Agent"
    static str AgentDirectory = "/opt/VRTSagents/ha/bin/JBoss"
    static str ArgList[] = { ResLogLevel, State, IState,
        MonitorProgram, User, Version, JBossHome, Component,
        ServerConfig, ServerBaseDir, ConfigurationDir, \
        ManagementAddress, MasterHCAddress, ServerName, EnvFile,
        AdminUser, AdminPassword, StartArgs, StopArgs, BindingSet,
        JNDIUrl, SecondLevelMonitor }
    str ResLogLevel = INFO
    str MonitorProgram
    str User
    str Version
```

```
    str JBossHome
    str Component
    str ServerConfig
    str ServerBaseDir
    str ConfigurationDir
    str ManagementAddress
    str MasterHCAddress
    str ServerName
    str EnvFile
    str AdminUser
    str AdminPassword
    str StartArgs
    str StopArgs
    str BindingSet
    str JNDIUrl
    int SecondLevelMonitor = 0
)
```

Attribute definition

Refer to the required and optional attributes while configuring the agent for JBoss Application Server.

[Table A-1](#) lists the required attributes for the JBoss Application Server agent.

Table A-1 Required attributes

Attribute	Description
ResLogLevel	<p>Specifies the logging detail that the agent performs for the resource.</p> <p>The valid values are as follows:</p> <ul style="list-style-type: none">■ ERROR: Only logs error messages.■ WARN: Logs error messages and warning messages.■ INFO: Logs error messages, warning messages, and informational messages.■ TRACE: Logs error messages, warning messages, informational messages, and trace messages. TRACE is very verbose and should be used only during initial configuration or for troubleshooting and diagnostic operations. <p>Type and dimension: string-scalar</p> <p>Default Value: INFO</p> <p>Example: INFO</p> <p>Note: The use of the ResLogLevel attribute is deprecated from VCS version 6.2 onwards. You must use the LogDbg attribute instead of the ResLogLevel attribute to enable debug logs for the ACCLib-based agents, when the ACCLib version is 6.2.0.0 or later. The agent captures the first failure data of the unexpected events and automatically logs debug messages in their respective agent log files.</p>
Version	<p>Specifies the version of the JBoss Application Server.</p> <p>You can set this attribute to the following values:</p> <ul style="list-style-type: none">■ 6.0: For JBoss Application Server 6.x■ 5.0: For JBoss Application Server 5.x <p>Default Value: ""</p> <p>Example: 6.0, 5.0</p>
Component	<p>Specifies the component or mode for which the resource is being configured. In this release, the agent supports the Standalone mode.</p> <p>This attribute is applicable to JBoss Application Server 6.x.</p> <p>Default Value: ""</p> <p>Example: Standalone</p>

Table A-1 Required attributes (*continued*)

Attribute	Description
ServerConfig	<p>For JBoss Application Server 6.x, this attribute specifies the filename of the configuration file that the agent must use. Ensure that you specify only the filename of the configuration file here; you may use the ConfigurationDir optional attribute to specify the location of the configuration file.</p> <p>Example: standalone.xml</p> <p>For JBoss Application Server 5.x, this attribute specifies the name of the Server Configuration that the agent must use.</p> <p>Example: production, web</p> <p>Default Value: ""</p>
User	<p>The UNIX user name used to start and stop the JBoss Application Server Configuration. If MonitorProgram is specified, the agent uses the credentials of this user to run the defined program.</p> <p>You must synchronize the user name across the systems within the cluster. This user name must resolve to the same UID and have the same default shell on each system in the cluster. The agent operations use the getpwnam (3C) function system call to obtain UNIX user attributes. Hence you can define the user name locally or in a common repository such as NIS, NIS+, or LDAP.</p> <p>Type and dimension: string-scalar</p> <p>Default Value: ""</p> <p>Example: root</p>
AdminUser	<p>The administrative user of the JBoss Application Server configuration. This user name is specified during the installation of JBoss Application Server.</p> <p>This attribute is applicable to JBoss Application Server 5.x.</p> <p>Default Value: ""</p> <p>Example: admin</p>

Table A-1 Required attributes (*continued*)

Attribute	Description
AdminPassword	<p>The password of the user of the JBoss Application Server. This password is specified during the installation of JBoss Application Server. The password is encrypted using the VCS encrypt utility, <code>vcseencrypt (1m)</code>.</p> <p>This attribute is applicable to JBoss Application Server 5.x.</p> <p>Note: You need not encrypt the password if you are using the VCS GUI to enter the password. VCS GUI automatically encrypts the password.</p> <p>Default Value: ""</p> <p>Example : <code>jxmXkvVvkVnvWvsVx</code></p>
JBossHome	<p>The absolute path of the JBoss home directory. The bin directory is present under this directory. This directory is required to access the startup scripts.</p> <p>Note: This is a directory name used in pattern matching for running process; do not keep extra trailing forward slashes (/) in the directory name.</p> <p>Default Value: none</p> <p>Examples:</p> <p><code>/opt/EnterprisePlatform-5.1.2/jboss-eap-5.1/jboss-as</code></p> <p><code>/opt/jboss/EAP-6.0.0.GA/jboss-eap-6.0</code></p>
ManagementAddress	<p>A combination of an IP address and port number that is used to specify the management bind address and the controller address. Specify this combination in the format IP:Port, where, IP is the management bind address and Port is the controller parameter that is used when executing the <code>jboss-cli.sh</code> utility.</p> <p>To specify an IPv6 address, use [], as per the standard IPv6 syntax.</p> <p>For example: <code>"::1:9999"</code>, <code>"[2001:db8:85a3:8d3:1319:8a2e:370:7348]:9999"</code></p> <p>Default Value: ""</p> <p>Example: <code>192.168.1.100:12345, myhostname:6789, myhostname.mydomain.com:7890</code></p>

Table A-1 Required attributes (*continued*)

Attribute	Description
ServerBaseDir	<p>The absolute path of the server's base directory.</p> <p>Note: This is a directory name used in pattern matching for running process; do not keep extra trailing forward slashes (/) in the directory name.</p> <p>For JBoss Application Server 6.x in standalone mode, the value of this attribute is passed as the command line parameter '-Djboss.server.base.dir' to the startup script.</p> <p>Default Value: None</p> <p>If no value is specified for JBoss Application Server 6.x in standalone mode, the agent uses the value <i>JBossHome/standalone</i>.</p> <p>Examples:</p> <p>/opt/EnterprisePlatform-5.1.2/jboss-eap-5.1/jboss-as/server</p> <p>/opt/jboss/EAP-6.0.0.GA/jboss-eap-6.0/standalone</p>
BindingSet	<p>The name of the set of bindings to use for the JBoss Application Server Configuration. Every server configuration must use a different binding set.</p> <p>This attribute is applicable to JBoss Application Server 5.x.</p> <p>Default Value: ""</p> <p>Example: ports-default, ports-01, ports-02, and so on.</p>
JNDIUrl	<p>The JNDI Url field according to the BindingSet. As per the default installation, each binding set increases the port value by hundred.</p> <p>This attribute is applicable to JBoss Application Server 5.x.</p> <p>Default Value: ""</p> <p>For example:</p> <ul style="list-style-type: none">ports-default corresponds to jnp://127.0.0.1:1099ports-01 corresponds to jnp://127.0.0.1:1199ports-02 corresponds to jnp://127.0.0.1:1299.

Table A-2 lists the optional attributes for the JBoss Application Server agent.

Table A-2 Optional attributes

Attribute	Description
EnvFile	<p>Specifies the full path to the file that the agent sources to set the environment before starting the server configuration. Typically, this attribute can be used to set environment variables like JAVA_HOME to make JBoss Application Server use the correct Java Runtime Environment.</p> <p>Symantec recommends storing the file on the shared disk. This ensures that the same file is available on each failover node. The shell environments supported are ksh, sh, and csh.</p> <p>Default Value: ""</p> <p>Example: /home/jboss/myenv.sh</p>
LogDbg	<p>For ACCLib-based agents, you must use the LogDbg resource type attribute to enable the debug logs when the ACCLib version is 6.2.0.0 or later.</p> <p>Set the LogDbg attribute to DBG_5 to enable debug logs for ACCLIB based agent. By default, setting the LogDbg attribute to DBG_5 enables debug logs for all the agent's resources in the cluster. If debug logs must be enabled for a specific resource, override the LogDbg attribute.</p> <p>Type and dimension: string-keylist</p> <p>Default: {} (none)</p> <p>For more information on how to use the LogDbg attribute, refer to the <i>Symantec Cluster Server Administrator's Guide</i>.</p>
MonitorProgram	<p>Absolute path name of an external, user-supplied monitor executable.</p> <p>Default Value: ""</p> <p>Example: /home/jboss/mymonitorprogram.sh</p>
ConfigurationDir	<p>The absolute path of the configuration XML file. For the Standalone mode, the value of this attribute is passed as the command-line parameter '-Djboss.server.config.dir' to the startup script.</p> <p>Default: none</p> <p>If no value is specified for JBoss Application Server 6.x in standalone mode, the agent uses the value <i>JBossHome/standalone/configuration</i>.</p> <p>Example:</p> <p>/opt/jboss/EAP-6.0.0.GA/jboss-eap-6.0/standalone/configuration</p>

Table A-2 Optional attributes (*continued*)

Attribute	Description
SecondLevelMonitor	<p>This attribute has been deprecated.</p> <p>To enable second-level monitoring, use the type-level attribute LevelTwoMonitorFreq.</p>
LevelTwoMonitorFreq	<p>A type-level attribute that specifies the frequency at which the agent for this resource type must perform second-level or detailed monitoring. You can also override the value of this attribute at the resource level.</p> <p>The value indicates the number of monitor cycles after which the agent monitors the JBoss Application Server Configuration in detail. For example, the value 5 indicates that the agent monitors the JBoss Application Server Configuration in detail after every five online monitor intervals.</p> <p>The software-provided tool 'jboss-cli.sh' is used to query the running JBoss Application Server to perform an in-depth health-check.</p> <p>Type and dimension: integer-scalar</p> <p>Default: 0</p>
StartArgs	<p>Additional startup arguments to pass to the JBoss Application Server startup script. The most common requirement could be the use of '-b 0.0.0.0' to enable remote administration.</p> <p>This attribute is applicable to JBoss Application Server 5.x.</p>
StopArgs	<p>Additional shutdown arguments to pass to the JBoss Application Server shutdown script.</p> <p>This attribute is applicable to JBoss Application Server 5.x.</p>

Table A-2 Optional attributes (*continued*)

Attribute	Description
IMF	<p>This resource type-level attribute determines whether the JBoss Application Server agent must perform intelligent resource monitoring. You can override the value of this attribute at the resource level.</p> <p>This attribute includes the following keys:</p> <ul style="list-style-type: none">■ Mode: Define this attribute to enable or disable intelligent resource monitoring. Valid values are as follows:<ul style="list-style-type: none">■ 0: Does not perform intelligent resource monitoring■ 1: Performs intelligent resource monitoring for offline resources and performs poll-based monitoring for online resources■ 2: Performs intelligent resource monitoring for online resources and performs poll-based monitoring for offline resources■ 3: Performs intelligent resource monitoring for both online and for offline resources.Type and dimension: integer-association Default value: 0■ MonitorFreq: This key value specifies the frequency at which the agent invokes the monitor agent function. The value of this key is an integer. Default: 1 You can set this key to a non-zero value for cases where the agent requires to perform both poll-based and intelligent resource monitoring. If the value is 0, the agent does not perform poll-based process check monitoring. After the resource registers with the AMF kernel driver, the agent calls the monitor agent function as follows:<ul style="list-style-type: none">■ After every (MonitorFreq x MonitorInterval) number of seconds for online resources■ After every (MonitorFreq x OfflineMonitorInterval) number of seconds for offline resources■ RegisterRetryLimit: If you enable intelligent resource monitoring, the agent invokes the <code>imf_register</code> agent function to register the resource with the AMF kernel driver. The value of the RegisterRetryLimit key determines the number of times the agent must retry registration for a resource. If the agent cannot register the resource within the limit that is specified, intelligent monitoring is disabled until the resource state changes or the value of the Mode key changes. Default: 3.

Table A-2 Optional attributes *(continued)*

Attribute	Description
IMFRegList	<p>An ordered list of attributes whose values are registered with the IMF notification module.</p> <p>You can override the value of this attribute at the resource level.</p> <p>Type and dimension: string-vector</p> <p>Default: None</p>

Detail monitoring

This appendix includes the following topics:

- [Setting the PATH variable](#)
- [Setting up detail monitoring for ApplicationHA agent for JBoss Application Server](#)

Setting the PATH variable

VCS commands reside in the `/opt/VRTS/bin` directory. Add this directory to your PATH environment variable.

To set the PATH variable

- ◆ Perform one of the following steps:

For the Bourne Shell (sh or ksh), type:

```
$ PATH=/opt/VRTS/bin:$PATH; export PATH
```

For the C Shell (csh or tcsh), type:

```
$ setenv PATH :/opt/VRTS/bin:$PATH
```

Setting up detail monitoring for ApplicationHA agent for JBoss Application Server

This section describes the procedure to enable and disable detail monitoring for JBoss Application Server.

To enable detail monitoring for JBoss Application Server

- 1 Make the ApplicationHA configuration writable:

```
# haconf -makerw
```

- 2 Freeze the service group to avoid automated actions by ApplicationHA in case of an incomplete configuration:

```
# hagr -freeze JBoss_1_SG
```

- 3 Enable detail monitoring for JBoss Application Server resources by using the following ApplicationHA commands:

```
# hares -modify JBoss_1_res LevelTwoMonitorFreq frequency
```

Note: for more information about the LevelTwoMonitorFreq attribute.

- 4 Save the configuration and unfreeze the service group.

```
# hagr -unfreeze JBoss_1_SG
```

```
# haconf -dump -makero
```

To disable detail monitoring for JBoss Application Server

- 1 Make the ApplicationHA configuration writable:

```
# haconf -makerw
```

- 2 Freeze the service group to avoid automated actions by ApplicationHA in case of an incomplete configuration:

```
# hagr -freeze JBoss_1_SG
```

- 3 Disable detail monitoring for SAP resources by using the following ApplicationHA commands:

```
# hares -modify JBoss_1_res LevelTwoMonitorFreq 0
```

- 4 Save the configuration and unfreeze the service group.

```
# hagr -unfreeze JBoss_1_SG
```

```
# haconf -dump -makero
```