

Symantec™ ApplicationHA Agent for Microsoft Exchange Server 2010 Configuration Guide

Windows Server 2003 (x64)
Windows Server 2008 (x64)

5.1 Service Pack 1

Symantec™ ApplicationHA Agent for Microsoft Exchange Server 2010 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.

Product version: 5.1 SP1

Document version: 5.1.SP1.0

Legal Notice

Copyright © 2010 Symantec Corporation. All rights reserved.

Symantec, the Symantec Logo, Veritas and Veritas Storage Foundation 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.

This Symantec product may contain third party software for which Symantec is required to provide attribution to the third party ("Third Party Programs"). Some of the Third Party Programs are available under open source or free software licenses. The License Agreement accompanying the Software does not alter any rights or obligations you may have under those open source or free software licenses. Please see the Third Party Legal Notice file accompanying this Symantec product for more information on the Third Party Programs.

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. 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 automatic software upgrades protection
- 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 web site 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_apac@symantec.com

Europe, Middle-East, and Africa semea@symantec.com

North America and Latin America supportsolutions@symantec.com

Contents

Chapter 1	Introducing the Symantec ApplicationHA agent for Microsoft Exchange Server 2010	
	About the Symantec ApplicationHA agents	10
	About the Exchange Server 2010 database agent	11
	Exchange Server 2010 database agent functions	12
	Exchange Server 2010 database agent state definition	12
	Exchange Server 2010 database agent resource type definition	13
	Exchange Server 2010 database agent attributes	13
	How Symantec ApplicationHA agent monitors Exchange Server 2010	14
Chapter 2	Configuring application monitoring with Symantec ApplicationHA	
	About configuring application monitoring with Symantec ApplicationHA	16
	Before configuring application monitoring for Exchange Server 2010	17
	Configuring application monitoring for Exchange Server 2010	18
	Administering application monitoring from the ApplicationHA view	20
	To configure or unconfigure application monitoring	21
	To view the status of configured applications	22
	To start or stop applications	23
	To enable or disable application heartbeat	23
	To suspend or resume application monitoring	24

Introducing the Symantec ApplicationHA agent for Microsoft Exchange Server 2010

This chapter includes the following topics:

- [“About the Symantec ApplicationHA agents”](#) on page 10
- [“About the Exchange Server 2010 database agent”](#) on page 11
- [“How Symantec ApplicationHA agent monitors Exchange Server 2010”](#) on page 14

About the Symantec ApplicationHA agents

Agents are processes that manage applications and resources of predefined resource types configured for applications and components on a system. The agents are installed when you install Symantec ApplicationHA. These agents start, stop, and monitor the corresponding resources configured for the applications and report state changes.

Symantec ApplicationHA agents are classified as follows:

- Infrastructure agents

Infrastructure agents are packaged (bundled) with the base software and include agents for mount points, generic services, and processes. These agents are immediately available for use after you install Symantec ApplicationHA.

For more details about the infrastructure agents, refer to the *Symantec ApplicationHA Installation and Configuration Guide*.

- Application agents

Application agents are used to monitor third party applications such as Microsoft SQL Server, Oracle, and Microsoft Exchange. These agents are packaged separately and are available in the form of an agent pack that gets installed when you install Symantec ApplicationHA.

An agent pack is released on a quarterly basis. The agent pack includes support for new applications as well as fixes and enhancements to existing agents. You can install the agent pack on an existing ApplicationHA guest components installation.

Refer to the Veritas Operations Services (VOS) Web site for information on the latest agent pack availability.

<http://vos.symantec.com>

The following sections provide details about the Microsoft Exchange Server 2010 agent.

For more details about other application agents, refer to the application-specific configuration guide.

About the Exchange Server 2010 database agent

The Symantec ApplicationHA database agent for Microsoft Exchange 2010 provides monitoring support for Exchange 2010 databases. The agent monitors the Exchange 2010 mailbox databases, brings them online, and takes them offline.

The agent also starts the following Exchange services if they are not running already, and monitors their status:

- **Microsoft Exchange AD Topology service (MSEExchangeADTopology)**
This service provides Active Directory topology information to the Exchange services. If this service is stopped, most Exchange services are unable to start.
- **Microsoft Exchange Replication Service (MSEExchangeRepl)**
This service provides replication functionality for Mailbox Server role databases and is used by Local Continuous Replication (LCR) and Cluster Continuous Replication (CCR).
- **Microsoft Exchange System Attendant (MSEExchangeSA)**
The Exchange component responsible for monitoring, maintenance, and Active Directory lookup services, and ensuring that operations run smoothly.
- **Microsoft Exchange Information Store (MSEExchangeIS)**
The Exchange storage used to hold messages in users' mailboxes and in public folders.
- **Microsoft Exchange Mail Submission (MSEExchangeMailSubmission)**
This service submits messages from the Mailbox Server to the Hub Transport Server.

The agent internally monitors these services; the Exchange 2010 application monitoring configuration does not contain separate resources for these services.

The Exchange 2010 database agent is represented by the Exch2010DB resource type.

Exchange Server 2010 database agent functions

Online	<p>The agent performs the following actions as part of its online function:</p> <ul style="list-style-type: none">■ Checks if the mailbox database file is available on the configured volume.■ Checks the status of the Microsoft Exchange Information Store (MSEExchangeIS) service and starts the service if it is not running.■ Starts the MSEExchangeADTopology, MSEExchangeRepl, MSEExchangeSA, and MSEExchangeMailSubmission Exchange services.■ Mounts the Exchange mailbox database on the system.
Offline	<p>Dismounts the Exchange mailbox database from the system.</p>
Monitor	<p>The agent performs the following actions as part of its monitor function:</p> <ul style="list-style-type: none">■ Verifies the status of the mailbox database on the system. If the database is mounted, the agent reports the resource as ONLINE. If the database is dismounted, the agent resource is marked as OFFLINE.■ If the agent is unable to retrieve the database status, the agent queries the Service Control Manager (SCM) for the status of the Microsoft Exchange Information Store (MSEExchangeIS) service. If the service is running, the agent reports the resource as UNKNOWN; otherwise the resource is marked as OFFLINE.
Clean	<p>Forcibly dismounts the Exchange mailbox database from the system.</p>

Exchange Server 2010 database agent state definition

ONLINE	<p>Indicates that the configured mailbox database is mounted and active on the system.</p>
OFFLINE	<p>Indicates that the configured mailbox database is dismounted from the system.</p>
UNKNOWN	<p>Indicates that the agent is unable to determine the status of the configured mailbox database on the system</p>

Exchange Server 2010 database agent resource type definition

```
type Exch2010DB (
  static i18nstr ArgList[] = { DBName, MonitorService }
  i18nstr DBName
  boolean MonitorService = 1
)
```

Exchange Server 2010 database agent attributes

Table 1-1 Exchange 2010 database agent required attributes

Required attributes	Description
DBName	Name of the Exchange 2010 mailbox databases to be monitored.
MonitorService	<p>Defines whether the agent should monitor the critical Exchange 2010 services.</p> <p>The value 1 (True) indicates that the agent monitors the critical services. The value 0 (False) indicates that it does not. Default is 1 (True).</p> <p>If this attribute is set to 1 (True), the agent monitors the following Exchange 2010 services internally:</p> <ul style="list-style-type: none"> ■ Microsoft Exchange System Attendant (MSEExchangeSA) ■ Microsoft Exchange Mail Submission (MSEExchangeMailSubmission) ■ Microsoft Exchange AD Topology service (MSEExchangeADTopology) ■ Microsoft Exchange Replication Service (MSEExchangeRepl) ■ Microsoft Exchange Information Store (MSEExchangeIS) <p>Note: You cannot define which Exchange 2010 services should be monitored by the agent.</p>

How Symantec ApplicationHA agent monitors Exchange Server 2010

The Exchange Server 2010 agent monitors the configured application, determines the status of the configured resources, brings them online, and takes them offline. The agent detects an application failure if the configured Exchange databases or service becomes unavailable. The agent attempts to start the service and mount the database for a configurable number of attempts. If the database cannot be mounted and the services do not start, the agent considers this as an application failure and reports the status to VMware HA.

Depending on the configuration, VMware HA can then restart the virtual machine. After the machine restarts, the agent starts the application services, mounts the databases, and brings the configured resources online on the system.

Configuring application monitoring with Symantec ApplicationHA

This chapter includes the following topics:

- [“About configuring application monitoring with Symantec ApplicationHA”](#) on page 16
- [“Before configuring application monitoring for Exchange Server 2010”](#) on page 17
- [“Configuring application monitoring for Exchange Server 2010”](#) on page 18
- [“Administering application monitoring from the ApplicationHA view”](#) on page 20

About configuring application monitoring with Symantec ApplicationHA

This chapter describes the steps to configure application monitoring for Microsoft Exchange 2010 databases with Symantec ApplicationHA in a VMware virtualization environment.

Consider the following points before you proceed:

- You configure application monitoring on a virtual machine using the Symantec ApplicationHA Configuration Wizard. The wizard is launched when you click **Configure Application Monitoring** on the ApplicationHA tab in VMware vSphere Client.
- Apart from the application monitoring configuration, the configuration wizard also sets up the other components required for Symantec ApplicationHA to successfully monitor the applications. You must first configure application monitoring using the configuration wizard before using VCS commands to add additional components or modify the existing configuration.
- You can use the wizard to configure monitoring for only one application per virtual machine. For example, if you have configured monitoring for Exchange, you cannot run the wizard again to configure another application on that virtual machine. To configure another application using the wizard, you must first unconfigure the existing application monitoring configuration.
- After configuring Exchange Server 2010 for monitoring, if you add a database, then the new database is not monitored as part of the existing configuration. In this case, you can either use the VCS commands to add the components to the configuration, or unconfigure the existing configuration and then run the wizard again to select all the desired components for the monitoring.

Note: When you configure or unconfigure application monitoring, it does not affect the state of the application. The application runs unaffected on the virtual machine. This also does not require any additional steps on the vCenter Server.

Before configuring application monitoring for Exchange Server 2010

Note the following prerequisites before configuring application monitoring for Exchange Server 2010 databases on a virtual machine:

- Ensure that you have installed Symantec ApplicationHA (Console and guest components) in your VMware environment.
Refer to the *Symantec ApplicationHA Installation and Configuration Guide* for instructions.
- Ensure that VMware Tools is installed on the virtual machine. Install the version that is the similar to or later than that available with VMware ESX 4.1.
- Ensure that you have installed VMware vSphere Client. The vSphere Client is used to configure and control application monitoring.
You can also perform the application monitoring operations directly from a browser window using the following URL:
`https://<virtualmachineNameorIPAddress>:5634/vcs/admin/application_health.html?priv=ADMIN`
- Verify that Microsoft Exchange Server 2010 Mailbox Server role is installed and the databases that you wish to monitor are created on the virtual machine.
- If you have configured a firewall, ensure that your firewall settings allow access to ports used by Symantec ApplicationHA installer, wizards, and services.
Refer to the *Symantec ApplicationHA Installation and Configuration Guide* for a list of ports and services used.

Configuring application monitoring for Exchange Server 2010

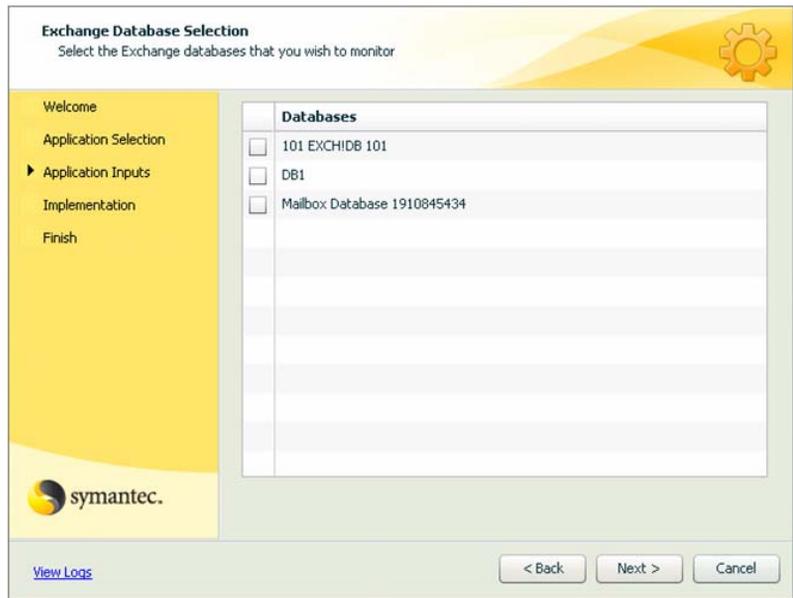
Perform the following steps to configure monitoring for Exchange Server 2010 databases on a virtual machine.

Note: You can configure monitoring for only one application in a single wizard workflow.

To configure application monitoring for Exchange Server 2010 databases

- 1 Launch the vSphere Client and connect to the vCenter Server that manages the virtual machine.
- 2 From the vSphere Client's Inventory view in the left pane, select the virtual machine where you want to configure application monitoring for Exchange Server 2010 and then in the right pane, select the **ApplicationHA** tab.
- 3 Skip this step if you have already configured the single sign-on for the virtual machine.
In the User Name and Password field, specify the credentials of a user that has administrative privileges on the virtual machine and then click **Configure**.
The ApplicationHA Console uses the specified user account to set up a permanent authentication for the virtual machine.
After the authentication is successful, the ApplicationHA tab refreshes and displays the application health view.
Refer to the *Symantec ApplicationHA Installation and Configuration Guide* for more information on single sign-on.
- 4 Click **Configure Application Monitoring** to launch the Symantec ApplicationHA Configuration Wizard.
- 5 Review the information on the Welcome panel and then click **Next**.
- 6 On the Application Selection page, click **Microsoft Exchange 2010** in the Supported Applications list and then click **Next**.
- 7 On the Exchange Database Selection panel, select the Exchange databases that you wish to monitor and then click **Next**.

The Databases box displays the databases discovered on the local system.



- 8 The wizard performs the application monitoring configuration tasks. The wizard creates the required resources and enables the application heartbeat that communicates with VMware HA. The panel displays the status of each task. After all the tasks are complete, click **Next**.
 If the configuration tasks fail, click **View Logs** to check the details of the failure. Rectify the cause of the failure and run the wizard again to configure the application monitoring.
- 9 On the Finish panel, click **Finish** to complete the wizard.
 This completes the application monitoring configuration. You can view the application status in the ApplicationHA tab.
- 10 In the ApplicationHA tab, click **Refresh**.
 If the application status shows as not running, click **Start Application** to start the configured service or process.
 The view displays the application as configured and running on the virtual machine. The Description box displays the details of the configured components.

Administering application monitoring from the ApplicationHA view

Symantec ApplicationHA provides an interface, the ApplicationHA tab, to configure and control application monitoring. The ApplicationHA tab is integrated with the VMware vSphere Client.

Use the ApplicationHA view to perform the following tasks:

- configure and unconfigure application monitoring
- start and stop configured applications
- enable and disable application heartbeat
- enter and exit maintenance mode

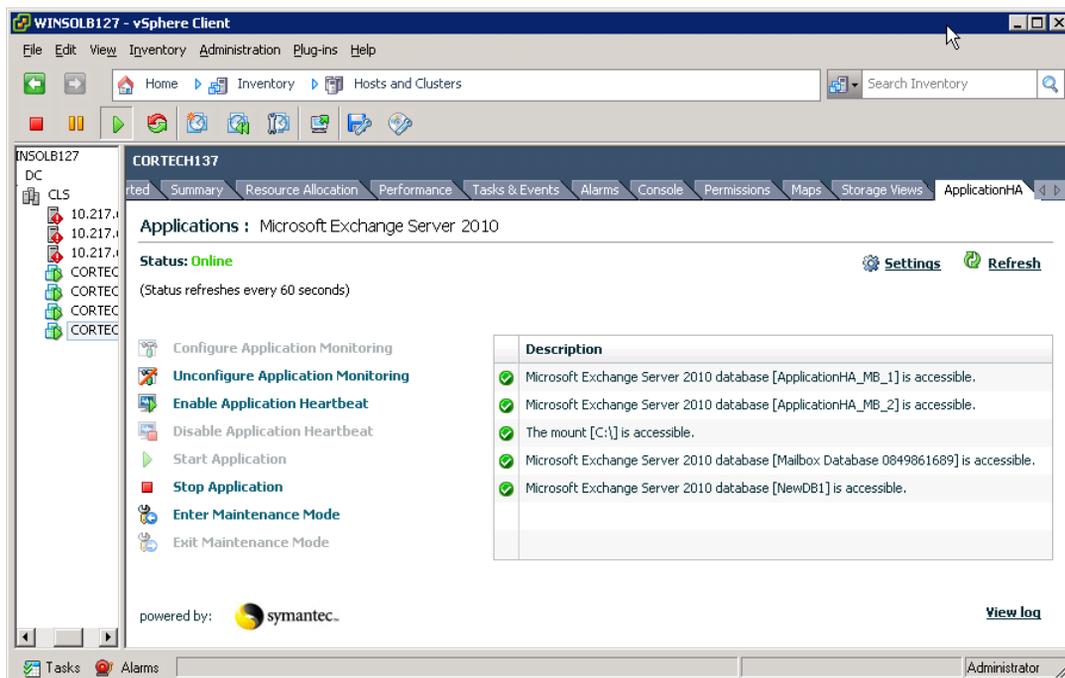
To view the ApplicationHA view, launch the VMware vSphere Client, select a virtual machine from the Inventory pane, and in the Management pane on the right, click the **ApplicationHA** tab.

If you have not configured single sign-on for the virtual machine, specify the user credentials of a user that has administrative privileges on the virtual machine.

Note: You can also perform the application monitoring operations directly from a browser window using the following URL:

https://<virtualmachineNameorIPAddress>:5634/vcs/admin/application_health.html?priv=ADMIN

After you configure an application on a virtual machine, the ApplicationHA view displays as follows:



To configure or unconfigure application monitoring

Use the ApplicationHA view to configure or delete an application monitoring configuration from the virtual machine. This may be required in case you wish to re-create the configuration or configure another application using the wizard.

- Click **Configure Application Monitoring** to launch the Symantec ApplicationHA Configuration Wizard. Use the wizard to configure application monitoring.
- Click **Unconfigure Application Monitoring** to delete the application monitoring configuration from the virtual machine. Symantec ApplicationHA removes all the configured resources for the application and its services.

Note that this does not uninstall Symantec ApplicationHA from the virtual machine. This only removes the configuration. The unconfigure option removes all the application monitoring configuration resources from the virtual machine. To monitor the application, you have to configure them again.

To view the status of configured applications

The Description box in the ApplicationHA view displays the status of the configured application and the associated services.

Applications : Microsoft Exchange Server 2010

Status: **Online** [Settings](#) [Refresh](#)

(Status refreshes every 60 seconds)

- Configure Application Monitoring
- Unconfigure Application Monitoring**
- Enable Application Heartbeat
- Disable Application Heartbeat
- Start Application
- Stop Application
- Enter Maintenance Mode
- Exit Maintenance Mode

Description
✔ Microsoft Exchange Server 2010 database [ApplicationHA_MB_1] is accessible.
✔ Microsoft Exchange Server 2010 database [ApplicationHA_MB_2] is accessible.
✔ The mount [C:] is accessible.
✔ Microsoft Exchange Server 2010 database [Mailbox Database 0849861689] is accessible.
✔ Microsoft Exchange Server 2010 database [NewDB1] is accessible.

powered by:  [View log](#)

For example, if you have configured monitoring for Exchange Server 2010, the Description box displays the following information:

```
Microsoft Exchange Server 2010 database [dbname] is not
accessible. (Starting database...)
Microsoft Exchange Server 2010 database [dbname] is accessible.
Microsoft Exchange Server 2010 database [dbname] is accessible.
The mount [mountpoint] is accessible.
```

Here dbname is the name of the Exchange Server 2010 database that is configured.

The Status field displays the state of the configured application.

The following states are displayed:

- **online**
Indicates that the Exchange databases are accessible on the virtual machine.
- **offline**
Indicates that the Exchange databases are not accessible on the virtual machine
- **partial**
Indicates that either the services and databases are being started on the virtual machine or Symantec ApplicationHA was unable to start one or more services or mount one or more databases
- **faulted**

Indicates that the configured services or components have unexpectedly stopped running

Click **Refresh** to see the most current status of the databases. The status is refreshed every 60 seconds by default.

To start or stop applications

Use the ApplicationHA view to control the status of the configured application and the associated services and databases.

The ApplicationHA view provides the following options:

- Click **Start Application** to start a configured application. Symantec ApplicationHA attempts to start the configured application and its databases in the required order. The configured resources are also brought online in the appropriate hierarchy.
- Click **Stop Application** to stop a configured application and the databases that are running on the virtual machine. Symantec ApplicationHA begins to stop the configured application and dismount its databases gracefully. The configured resources are also taken offline in the appropriate hierarchy.

To enable or disable application heartbeat

The VMware virtual machine monitoring feature uses the heartbeat information that VMware Tools captures as a proxy for guest operating system availability. This allows VMware HA to automatically reset or restart individual virtual machines that have lost their ability to heartbeat. You can select VM and Application Monitoring if you also want to enable application monitoring. ApplicationHA view allows you to control the application heartbeat on the virtual machines.

Use the following options on the ApplicationHA tab to control the status of the configured application heartbeat:

- Click **Enable Application Heartbeat** to enable the heartbeat communication between the configured applications running on the virtual machine and VMware HA. The application heartbeat is enabled by default when an application is configured for monitoring.
- Click **Disable Application Heartbeat** to disable the heartbeat communication between the configured applications running on the virtual machine and VMware HA.

Disabling the application heartbeat does not instruct VMware HA to restart the virtual machine. This option disables the application monitoring feature in the VMware virtual machine monitoring settings.

To suspend or resume application monitoring

After configuring application monitoring you may want to perform routine maintenance tasks on those applications. These tasks may or may not involve stopping the application but may temporarily affect the state of the applications and its dependent components. If there is any change to the application status, Symantec ApplicationHA may try to restore the application state. This may potentially affect the maintenance tasks that you intend to perform on those applications.

If stopping the application is not an option, you can suspend application monitoring and create a window for performing such maintenance tasks. When application monitoring is suspended, ApplicationHA freezes the application configuration, disables the application heartbeat, and stops sending the heartbeat to VMware HA.

The ApplicationHA view provides the following options:

- Click **Enter Maintenance Mode** to suspend the application monitoring for the applications that are configured on the virtual machine. During the time the monitoring is suspended, Symantec ApplicationHA does not monitor the state of the application and its dependent components. The ApplicationHA view does not display the current status of the application. If there is any failure in the application or its components, ApplicationHA takes no action.
- Click **Exit Maintenance Mode** to resume the application monitoring for the applications configured on the virtual machine. You may have to click the **Refresh** link in the ApplicationHA view to see the current status of the application.

When application monitoring is restarted from a suspended state, ApplicationHA does not enable the application heartbeat. Click **Enable Application Heartbeat** to enable it.

If you have made changes that include database addition or change in the underlying storage mount point that was being monitored, then those changes may not reflect in the application monitoring configuration. In such cases, you may have to unconfigure and reconfigure the application monitoring.