

Symantec™ ApplicationHA Installation and Upgrade Guide

Windows Server 2003 and 2003 R2,
Windows Server 2008 and 2008 R2

6.0

Symantec™ ApplicationHA Installation and Upgrade Guide

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- Router, gateway, and IP address information
- Problem description:
 - Error messages and log files
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Introducing Symantec ApplicationHA

This chapter includes the following topics:

- Components of Symantec ApplicationHA
- Symantec ApplicationHA agents
- About Symantec ApplicationHA licensing
- Getting started with ApplicationHA

Components of Symantec ApplicationHA

Symantec ApplicationHA consists of the following components

- Symantec High Availability Console
- Symantec ApplicationHA guest components

Symantec High Availability Console

The Symantec High Availability Console is installed separately in the Symantec ApplicationHA monitoring environment and resides on a separate virtual machine or a physical machine.

Note: You must not install the Console on a machine where VMware vCenter Server is installed.

The Symantec High Availability Console performs the following functions:

- As part of the Console installation, the installer registers the Symantec High Availability plugin for VMware vCenter Server. The plugin enables Symantec ApplicationHA integration with VMware vSphere Client and adds the Symantec High Availability tab and the Symantec High Availability dashboard to the VMware vSphere Client.

This plugin is required to view the Symantec High Availability tab, the Symantec High Availability dashboard, and the Symantec High Availability home page, in the vSphere Client.

You can use the Symantec High Availability tab to configure application monitoring, control application start and stop, and monitor the application status on a virtual machine.

You can use the Symantec High Availability dashboard to administer application monitoring on a VMware cluster or datacenter.

The Symantec High Availability home page is added as an vSphere Client extension under the VMware Solutions and Applications pane. You can use the Symantec High Availability home page to perform any of the following tasks:

- Install ApplicationHA or Symantec High Availability guest components
- Manage ApplicationHA or Symantec High Availability licenses
- Configure single sign-on between sites for application monitoring continuity. The cross-site single sign-on is required to configure ApplicationHA in a VMware site recovery environment.
- The Symantec High Availability Console provides a single sign-on mechanism so that an authenticated vCenter user does not have to provide the virtual machine user credentials to configure and control application monitoring. The user also does not have to log on each time to connect to the virtual machine from the vSphere Client.
- The Console uses Symantec ApplicationHA Authentication service to provide secure communication between the virtual machine and the vSphere Client. It uses digital certificates for authentication and uses SSL to encrypt communications. Symantec ApplicationHA uses platform-based authentication; it does not store user passwords.
- The Console adds the Symantec ApplicationHA privileges to the vSphere Client environment. You can use the privileges to configure access control for vCenter Server users and groups.
- In a virtual machine auto recovery configuration, the Symantec High Availability Console registers the specified virtual machine for auto-restore and adds the entries to the Console Server database. After the Console Server registers the virtual machine for auto-restore, the Symantec High Availability tab displays that the "Virtual Machine Auto Recovery" is configured.

Symantec ApplicationHA guest components

The Symantec ApplicationHA guest components are installed separately on the virtual machines where you wish to monitor applications. The guest components include the configuration wizard and the ApplicationHA agents that are used for configuring and monitoring applications.

The guest components also include the Veritas Storage Foundation Messaging Service (xpirtld). This service communicates the application monitoring status on the virtual machine and displays it in the Symantec High Availability tab.

Symantec ApplicationHA agents

Agents are application-specific modules that plug into the ApplicationHA framework that manages applications and resources of predefined resource types configured for applications and components on a system. The agents are installed when you install Symantec ApplicationHA guest components. These agents start, stop, and monitor the resources configured for the applications and report state changes. If an application or its components fail, these agents also restart the applications and its resources on the virtual machine.

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. Refer to the *Symantec™ ApplicationHA Generic Agents Guide* for more details about the infrastructure agents.
- **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 guest components. The ApplicationHA 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 Symantec Operations Readiness Tools (SORT) Web site for information on the latest agent pack availability. <https://sort.symantec.com> Refer to the agent-specific configuration guide for more details about the application agents.

About Symantec ApplicationHA licensing

Symantec ApplicationHA is a licensed product. Licensing for Symantec ApplicationHA is applicable for ApplicationHA guest components and is based on the server operating systems in use.

An evaluation license key is embedded in the product. This license key is valid only for a period of 2 months. If you are installing ApplicationHA for the first time, you can use the embedded license key or procure a permanent license key and enter the same while installing the product.

ApplicationHA licenses are applicable on a per virtual machine basis, irrespective of where the virtual machine resides, whether at a single high availability site or as part of a disaster recovery environment. You must purchase licenses for each virtual machine on which you want to use ApplicationHA.

You can update the license keys by adding or removing specific licenses from a virtual machine that has ApplicationHA guest components installed.

See “About managing ApplicationHA licenses” on page 68.

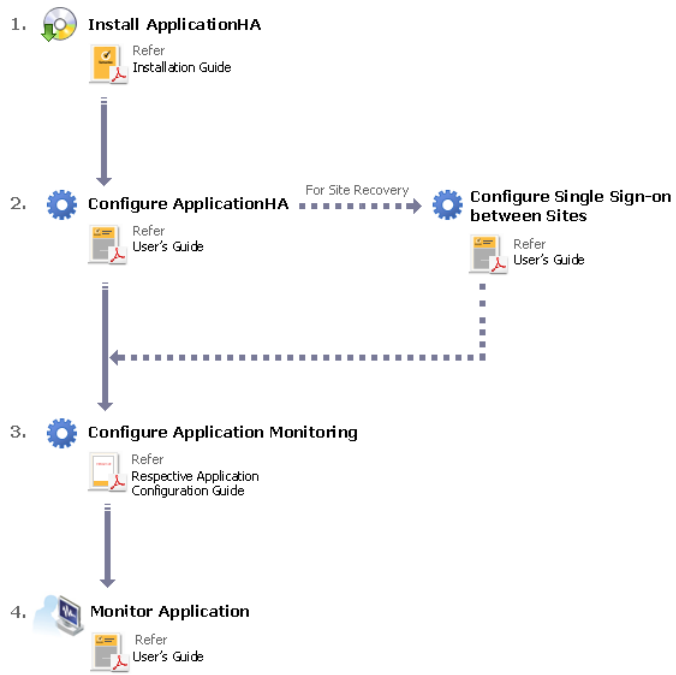
Refer to *Symantec™ ApplicationHA Installation and Upgrade Guide* for more information about product licensing.

Getting started with ApplicationHA

You can get started with ApplicationHA following three simple steps:

- Install ApplicationHA
- Configure ApplicationHA
- Configure application monitoring

The following figure represents the workflow for getting started with ApplicationHA and the corresponding document you must refer for details.



Installing Symantec ApplicationHA

This chapter includes the following topics:

- About installing Symantec ApplicationHA
- Before installing Symantec ApplicationHA
- Installing Symantec ApplicationHA Console using the product installer
- About installing Symantec ApplicationHA guest components
- Installing ApplicationHA guest components using the installation wizard
- Installing ApplicationHA guest components using the command line interface
- About installing Symantec ApplicationHA guest components using the vSphere Client menu
- About installing ApplicationHA components for VMware SRM Server
- Installing the ApplicationHA components for VMware SRM Server

About installing Symantec ApplicationHA

Table 2-1 describes the tasks for installing and setting up Symantec ApplicationHA in a VMware virtualization environment.

Table 2-1 Tasks for installing Symantec ApplicationHA

Task	Description
Installing Symantec ApplicationHA Console	<p>Install the ApplicationHA Console on a separate physical or virtual machine. This installation registers the ApplicationHA plugin on the vCenter Server.</p> <p>Note: If you are deploying a disaster recovery setup and plan to configure ApplicationHA for application monitoring continuity, you must install the Console host at both, the protected site and the recovery site.</p> <p>After the installation is complete, the ApplicationHA tab, ApplicationHA dashboard, and the Symantec ApplicationHA home page are added to the vSphere client. The ApplicationHA tab is visible when you select a virtual machine from the VMware vCenter Server inventory. The ApplicationHA dashboard is visible when you select a cluster or a datacenter from the VMware vCenter Server inventory. The Symantec ApplicationHA home page is added as an vSphere Client extension under its Solutions and Applications pane.</p> <p>Use the Symantec ApplicationHA home page to perform any of the following tasks:</p> <ul style="list-style-type: none"> ■ Install ApplicationHA guest components ■ Manage ApplicationHA licenses ■ Configure SSO for disaster recovery <p>Use the ApplicationHA tab to configure and control application monitoring on virtual machines that are managed from the VMware vCenter Server. You can perform these operations per virtual machine.</p> <p>Use the ApplicationHA dashboard to administer the configured applications on virtual machines in a VMware datacenter. You can perform these operations at a VMware cluster or datacenter-level.</p>
Installing Symantec ApplicationHA guest components for virtual machines	<p>Install the ApplicationHA guest components on all the virtual machines where you wish to configure application monitoring. This installs the ApplicationHA agents and configuration wizard on the virtual machines</p> <p>Note: You must install the Console, before you install the guest components.</p>

Table 2-1 Tasks for installing Symantec ApplicationHA *(continued)*

Task	Description
Editing VMware VM monitoring settings to enable application monitoring	<p>After installing Symantec ApplicationHA components, you must manually edit the VM monitoring settings to enable application monitoring.</p> <p>This involves the following tasks:</p> <ul style="list-style-type: none"> ■ Editing the VM cluster settings from the vSphere Client You must manually change these settings from the vSphere Client. ■ Editing the settings from each virtual machine This is an optional task. To edit the settings, you must manually do so from the vSphere Client.

Note: Symantec ApplicationHA supports application monitoring continuity in case of a disaster recovery. To enable and maintain application monitoring continuity after a successful recovery of your virtual machines, you must also install ApplicationHA Components for VMware SRM.

See “About installing ApplicationHA components for VMware SRM Server” on page 41.

Before installing Symantec ApplicationHA

Review the following requirements before installing Symantec ApplicationHA in a VMware virtualization environment:

- Supported VMware versions
- Disk space requirements
- Supported operating systems for ApplicationHA Console
- Requirements for installing ApplicationHA Console
- Supported operating systems for guest virtual machines
- Requirements for installing the ApplicationHA guest components
- Requirements for installing ApplicationHA Components for VMware SRM
- Supported applications
- Ports and firewall settings
- Supported Symantec Backup Exec versions
- Additional requirements

Supported VMware versions

Table 2-2 lists the VMware Servers and management clients that are currently supported:

Table 2-2 Supported VMware Servers and Mangement Clients

VMware Servers and Management Clients	Versions
VMware ESX Server	4.0 (for ApplicationHA initiated reboot only), 4.1, 4.1 Update 1, 4.1 Update 2
VMware ESXi Server	4.0, 4.1, 5.0
VMware vSphere Client	4.0, 4.1, 5.0
VMware vCenter Server	4.0, 4.1, 4.1 Update 1, 5.0 Note: VMware Fault Tolerance is not supported in case of vCenter Server 4.1
VMware vCenter Site Recovery Manager (SRM)	4.1, 5.0, 5.1 Note: VMware SRM 4.0 is currently not supported.

For the latest information on the list of supported applications, refer to the Symantec ApplicationHA Software Compatibility List (SCL).

<http://www.symantec.com/docs/DOC5051>

Disk space requirements

Table 2-3 provides the minimum disk space requirements for the Symantec ApplicationHA components.

Table 2-3 Symantec ApplicationHA disk space requirements

Component	Disk space required
ApplicationHA Console components	600 MB
ApplicationHA guest components for virtual machine	300 MB
ApplicationHA SRM Components for VMware SRM	130 MB

Supported operating systems for ApplicationHA Console

Table 2-4 lists the operating systems that Symantec ApplicationHA currently supports for ApplicationHA Console host.

Table 2-4 Supported operating systems for Console host

Server	Architecture	Edition	Service Pack
Windows Server 2008	x64	Standard Edition Enterprise Edition Datacenter Edition Web Edition Small Business Server	SP1 required, SP2 supported
Windows Server 2008 R2	x64	Standard Edition Enterprise Edition Datacenter Edition Web Edition	SP1

Requirements for installing ApplicationHA Console

The following prerequisites apply to the machine that hosts the ApplicationHA Console:

- You can install the ApplicationHA Console on a physical or a virtual machine. If you wish to configure application monitoring for the ApplicationHA Console itself, the host must be a virtual machine.
- The ApplicationHA Console host must run Windows Server 2008 or Windows Server 2008 R2 (latest service packs supported).
- Memory must be a minimum 2 GB of RAM in addition to the recommended memory for the server operating system.
- Ensure that your firewall settings allow access to ports used by Symantec ApplicationHA installer, wizard, and services. See “Ports and firewall settings” on page 24.

Supported operating systems for guest virtual machines

Table 2-5 lists the operating systems that Symantec ApplicationHA currently supports on virtual machines.

Table 2-5 Symantec ApplicationHA supported operating systems

Server	Architecture	Edition	Service Pack
Windows Server 2003	x86, x64	Standard Edition, Enterprise Edition, Datacenter Edition	SP2 required
Windows Server 2003 R2 *	x86, x64	Standard Edition, Enterprise Edition, Datacenter Edition, Small Business Server	SP2 required
Windows Server 2008	x86, x64	Standard Edition, Enterprise Edition, Datacenter Edition, Web Edition, Small Business Server	SP1 required SP2 supported
Windows Server 2008 R2	x64	Standard Edition, Enterprise Edition, Datacenter Edition, Web Edition	SP1 supported

* In this release, ApplicationHA does not support 32-bit Windows Server 2003 R2 guest virtual machines deployed in a VMware SRM environment. This restriction is limited only for SRM environments; you can configure ApplicationHA on 32-bit Windows Server 2003 R2 guest virtual machines in a local site configuration. ApplicationHA however supports 64-bit Windows Server 2003 R2 and other supported operating systems on guest virtual machines in an SRM environment.

Requirements for installing the ApplicationHA guest components

The following prerequisites apply to the virtual machines where you install the Symantec ApplicationHA guest components:

- Memory must be a minimum 2 GB of RAM per virtual machine.
- Ensure that the Windows Management Instrumentation (WMI) service is set to automatic and is enabled.
- For remote installations on Windows Server 2008 systems, ensure that the Computer Browser Service is set to automatic and running.
- Ensure that VMware Tools is installed. Install the version that is similar to or later than that available with VMware ESX.
- Ensure that your firewall settings allow access to ports used by Symantec ApplicationHA installer, wizard, and services.

See “Ports and firewall settings” on page 24.

- Ensure that the ICMP and the Windows Management Instrumentation (WMI) service is included in the firewall exceptions list.

Requirements for installing ApplicationHA Components for VMware SRM

The following prerequisites apply to the SRM Server where you want to install the Symantec ApplicationHA components for VMware SRM Server:

- Ensure that VMware SRM Server is installed and configured. Refer to VMware product documentation for details.
- Ensure that Symantec High Availability Console is installed at both the sites.

Note: Ensure that you have upgraded the Console and guest components to 5.1SP2 or later, in case you have the earlier version installed.

- Ensure that the ApplicationHA guest components are installed on the virtual machines at the protected site and a single sign-on is configured between the virtual machines and the Console host, installed at the protected site. For configuring single sign-on, VMware HA settings and access control, refer to, *Symantec™ ApplicationHA User's Guide*.

Supported applications

Table 2-6 lists the applications currently supported by ApplicationHA.

Table 2-6 Symantec ApplicationHA supported applications

Application	Architecture	Edition	Service Pack
Microsoft Exchange 2007 (Mailbox Server role required)	x64	Standard Edition, Enterprise Edition	SP1, SP2, and SP3
Microsoft Exchange Server 2010 (Mailbox Server role required)	x64	Standard Edition, Enterprise Edition	
Microsoft SQL Server 2005	x64	Standard Edition, Enterprise Edition	

Table 2-6 Symantec ApplicationHA supported applications (*continued*)

Application	Architecture	Edition	Service Pack
Microsoft SQL Server 2008 and SQL Server 2008 R2	x86, x64	Standard Edition, Enterprise Edition, Web Edition	SP1
Internet Information Server (IIS) 6.0 and later versions	x86, x64		
Microsoft SharePoint Server 2010	x64		
ApplicationHA Console	x64		
Custom applications and generic services	x86, x64		
FileShare	x86, x64		
PrintShare	x64		
SAP NetWeaver	x64		
SAP Web Application Server	x64		
Oracle	x64		

For the latest information on the list of supported applications, refer to the Symantec ApplicationHA Software Compatibility List (SCL).

<http://www.symantec.com/docs/DOC5051>

Supported Symantec Backup Exec versions

The following Symantec Backup Exec version is currently supported:

- Backup Exec 2010 R3

Ports and firewall settings

Symantec ApplicationHA uses certain ports and services during installation and configuration. If you have configured a firewall, ensure that the firewall settings allow access to these ports and services.

Table 2-7 displays the services and ports used by Symantec ApplicationHA.

Table 2-7 Services and ports used by Symantec ApplicationHA

Component Name	Port/Protocol	Settings	Description
Services used by Symantec ApplicationHA installer			
File and Printer Sharing		Allow inbound and outbound	Used by the installer to copy the installation files to the machine.
Windows Management Instrumentation (WMI) service		Allow inbound and outbound	Used by the installer to discover virtual machines.
VMware vCenter Server			
VMware Web Service	443/ https (Default port)	Allow inbound and outbound	Used by the installer to register ApplicationHA plugin and add ApplicationHA privileges to the vCenter Server.
Ports and services used by Symantec ApplicationHA Console			
Symantec ApplicationHA Service	14151, 14152/ TCP	Allow inbound and outbound	Used by the ApplicationHA Console host to run Java Servlets that fetch the application monitoring status from the virtual machines and display the information on the ApplicationHA tab in the vSphere Client.

Table 2-7 Services and ports used by Symantec ApplicationHA (continued)

Component Name	Port/Protocol	Settings	Description
Symantec ApplicationHA Authentication Service	14153/ TCP	Allow inbound and outbound	Used by the ApplicationHA Console to authenticate the single sign-on account configured for a virtual machine.
Symantec ApplicationHA Database Service	14154/ TCP	Allow inbound and outbound	Used by the ApplicationHA Console to read and update the Sybase database.
Veritas Storage Foundation Messaging Service (xprtld)	5634 / TCP	Allow inbound and outbound	Used for communications between the ApplicationHA Console host machine and the virtual machines.
Ports and services used by Symantec ApplicationHA guest components (virtual machines)			
Veritas Storage Foundation Messaging Service (xprtld)	5634 / TCP	Allow inbound and outbound	Used for communications between the ApplicationHA Console host machine and the virtual machines.

Additional requirements

The following additional software requirements apply:

- Microsoft Internet Explorer version 6.0 or later
- Mozilla Firefox 3.x to 6.x

- Pop-up blockers are not enabled on the machine
- To view the ApplicationHA tab in the vSphere Client, verify that the following settings in your Internet Explorer (IE) browser are enabled:

Tools > Internet ■ Use SSL 2.0
 Options, Advanced ■ Use SSL 3.0
 tab ■ Use TLS 1.0

Tools > Internet ■ Active scripting
 Options, Security ■ Run ActiveX controls and plug-ins
 tab ■ Script ActiveX controls marked safe for scripting

Tools > Manage Shockwave Flash Object
 Add-ons

- To view the ApplicationHA tab on Windows Server 2003 and Windows Server 2008 systems running Internet Explorer (IE) version 9, verify that IE Enhanced Security Setting is set to "Off" for the Administrator and the Users group.
- Installation media and licenses for all products and third-party applications.
- Adobe Flash Player
 Install Adobe Flash on the systems from where you run the VMware vSphere Client to manage the virtual machines.
- Symantec ApplicationHA license
 An evaluation key is embedded in the product and is valid for two months. You can use all the product features during that period.
 To continue unrestricted usage, you must procure a valid license key.
- When installing Symantec ApplicationHA, ensure that there are no parallel installations, live updates, or Microsoft Windows updates in progress.

Installing Symantec ApplicationHA Console using the product installer

Use the Symantec ApplicationHA installer to install Symantec ApplicationHA Console in your VMware virtualization environment.

Consider the following before you proceed:

- The installation must be run locally. Remote install is not supported.
- You can install the ApplicationHA Console on Windows Server 2008 or Windows Server 2008 R2 servers only.

- You can install the ApplicationHA Console on a dedicated physical host or a virtual machine or on the vCenter Server itself. If you wish to configure application monitoring for ApplicationHA Console, you must install on a virtual machine.
- The installer uses the logged-on user account context to perform the installation. Verify that the logged-on user has local administrator privileges on the machine where you want to install the server.
- During the installation the installer prompts for a user name and password. This user account must have the privileges to register and unregister the vSphere client plugin. The installer uses this account to register the ApplicationHA plugin on the specified vCenter Server.
- As part of the server installation, the installer registers the Symantec ApplicationHA plugin for VMware vCenter Server.
- Symantec ApplicationHA supports one ApplicationHA Console per vCenter Server. If you have multiple vCenter Servers in your virtualization environment, you must install and configure separate ApplicationHA Console instances for each of them.
To reconfigure the vCenter Server with another instance of ApplicationHA Console, you must first uninstall the existing server and verify that the plugin is unregistered from the vCenter Server.

Perform the following steps to install Symantec ApplicationHA Console using the installation wizard.

To install ApplicationHA Console using the installation wizard

- 1 From the machine identified to serve as the ApplicationHA Console, navigate to the Symantec ApplicationHA software package directory and run **Setup.exe** to launch the installer.
- 2 On the Symantec ApplicationHA Installer, click **Install** under Symantec ApplicationHA Console to launch the installation wizard.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.
- 4 On the License Agreement panel, read the Symantec Software License Agreement, select **I accept the terms of License Agreement**, and then click **Next**.

- 5 On the VMware vCenter Server Details panel, specify the vCenter Server details and then click **Next**.

Provide the following details:

ApplicationHA Console IP	<p>Select the IP address of the local system from the drop-down list.</p> <p>This is the IP of the machine where you will install the ApplicationHA Console.</p> <p>The drop-down list may display several IPs if the system has multiple network adapters each with a unique IP address assigned.</p> <p>Select the host IP address that is accessible from the vCenter Server.</p> <p>Note: If you plan to configure ApplicationHA in a disaster recovery configuration, you must install the ApplicationHA Console at both the sites. The ApplicationHA Console installed at the recovery site must be powered on and accessible from the guest virtual machines at the protected site, before and after the failover.</p>
vCenter Server FQHN or IP	<p>Specify the fully qualified host name or IP address of the VMware vCenter Server.</p> <p>Ensure that the specified vCenter Server host name or IP address is accessible from the machine where you are installing ApplicationHA Console.</p>
Web Service Https Port	<p>Specify the https port used by the VMware Web Service.</p> <p>The default port number is 443.</p>
User Name	<p>Specify the name of the user account that has the privileges to extend the vSphere Client.</p> <p>The installer uses this account to register the ApplicationHA plugin on the vCenter Server.</p>
Password	<p>Specify the password for the user account specified in the User Name field.</p>

- 6 On the System Validation panel, the installer automatically selects the local host for installation and begins verification.

After the status shows as *Ready for Install*, click **Next**.

The wizard uses %Program Files%\Veritas as the default installation directory. To change the directory, click the folder icon next to the system and then choose the installation directory.

The wizard performs validation checks on the machine. If the machine does not meet the required criteria, the status is reflected as *Verification failed*. To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed unless the system passes the validation checks.

- 7 On the Pre-install Summary panel, review the pre-installation summary and then click **Next**.

Click **Save Report** if you wish to save the pre-installation summary report for reference.

- 8 The Installation panel displays the installation progress.

After the panel indicates that the installation is complete, click **Next**.

- 9 On the Post-install Summary panel, review the installation results and then click **Next**.

The wizard configures the required services and registers the Symantec ApplicationHA plugin on the specified vCenter Server.

If the installation has failed on the system, review the post-install summary report and refer to the wizard log file for details.

The log file is located at

%AllUsersProfile%\Veritas\VPI\log\

You may have to repeat the installation if the wizard indicates that the install has failed.

If the logs indicate that the Symantec ApplicationHA plugin registration has failed, you may have to manually register the plugin on the vCenter Server. Use the PluginMgmt.bat utility to register the plugin.

For details about the PluginMgmt.bat utility refer to the *Symantec™ ApplicationHA User's Guide*.

- 10 On the Finish panel click **Finish**.

This completes the installation of Symantec ApplicationHA Console.

- 11 This step is applicable only if you have re-installed Symantec ApplicationHA Console in your monitoring environment.

After completing the installation, the ApplicationHA tab may fail to retrieve the application status. In such a case, you may have to close the ApplicationHA tab and open it again.

In the vSphere Client, click another virtual machine, then click the original virtual machine again and then select the ApplicationHA tab, or exit the vSphere Client and launch it again.

The ApplicationHA view then displays the status of the configured applications on the virtual machine.

The ApplicationHA dashboard also displays the status of the configured applications on the virtual machine, and the other virtual machines under ApplicationHA control in the same cluster or data center.

About installing Symantec ApplicationHA guest components

Install the Symantec ApplicationHA guest components on the virtual machines where you wish to monitor applications.

You can install the guest components using any of the following methods:

- For installing using the installation wizard
See “Installing ApplicationHA guest components using the installation wizard” on page 31.
- For installing using the command line interface (CLI)
See “Installing ApplicationHA guest components using the command line interface” on page 34.
- For installing using the vSphere Client menu
See “Installing Symantec ApplicationHA guest components using the vSphere Client menu” on page 38.

Installing ApplicationHA guest components using the installation wizard

Consider the following points before you proceed with the installation:

- The installer uses the logged-on user account context for installation. Verify that the logged-on user has local administrator privileges on the system where you want to install the guest components.

- Symantec recommends that you first install the ApplicationHA Console before installing the guest components. The ApplicationHA plugin is registered during the ApplicationHA Console installation.
During the guest components installation, the installer verifies the ApplicationHA plugin registration on the vCenter Server. If the plugin is not registered, the installer displays a prompt.
You can choose to proceed with the guest components installation; however the ApplicationHA plugin registration is required for configuring application monitoring from the vSphere Client.
- Using the product installer you can currently install the components only on the local virtual machine.
- Installation of guest components also configures single sign-on between the virtual machine and the Console host. However, if the SSO configuration fails, you must manually configure it after the installation is complete. Use the ApplicationHA tab to configure the SSO manually.
For details refer to *Symantec™ ApplicationHA User's Guide*.
The single sign-on authentication is used for all operations on the virtual machine. This is also required so that the server does not prompt you for a user name and password each time you log on to the vSphere Client and click on a virtual machine to view its status.

Perform the following steps to install the ApplicationHA guest components using the installation wizard

- 1 From the Symantec ApplicationHA software package, run **Setup.exe** to launch the installer.
- 2 On the Symantec ApplicationHA Installer, click **Install** under Symantec ApplicationHA Guest Components to launch the installation wizard.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.
- 4 On the License Agreement panel, read the Symantec Software License Agreement, select **I accept the terms of License Agreement**, and then click **Next**.
- 5 On the License panel, specify the appropriate licensing details and then click **Next**.

You can specify the licensing in the following ways:

- Select **Use embedded 2-month evaluation key** to use the inbuilt license key. The evaluation license key supports all features and options and is valid for two months.

or

- Select **Enter license key**, specify the permanent license number in the field and then click **Add**.
Select a key in the box to see the list of features and options that are available for use with the specified license key.
To remove a specified key, select the key in the box and then click **Remove**.

- 6 On the System Validation panel the wizard selects the local host by default. Click **Next** after the wizard validates the virtual machine.

The wizard uses `%Program Files%\Veritas` as the default installation directory. To change the directory, click the folder icon next to the system and then choose the installation directory.

If the system passes the validation criteria, the status is reflected as **Ready for install**.

If the system does not meet the required criteria, the status is reflected as **Verification failed**. To view the cause of a validation failure, click the Information icon for the system.

Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed with the installation unless the system has passed the validation checks.

- 7 On the Pre-install Summary panel, review the pre-installation summary and then click **Next**.

Click **Save Report** if you wish to save the pre-installation summary report for reference.

- 8 The Installation panel displays the installation progress.

After the panel indicates that the installation is complete, click **Next**.

- 9 On the Post-install Summary panel, review the installation results and then click **Next** to configure the single sign-on between the virtual machine and the Console.

If the installation has failed, review the post-install summary report and refer to the wizard log file for details.

For Windows Server 2003, the log file is located at

`%AllUsersProfile%\ApplicationData\Veritas\VPI\log\<date_timestamp>\.`

For Windows Server 2008, the log file is located at

`%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>.`

You may have to repeat the installation in case of installation failure.

- 10 On the Configure Single Sign-on panel, specify the required details and then click **Next**.

Note: If the SSO configuration fails you can rectify the cause and then retry. Alternatively, you can proceed to complete the installation and then manually configure the single sign-on, using the ApplicationHA tab. Unless you configure the single sign-on, you cannot configure application monitoring for an application running on the virtual machine.

- 11 On the Finish panel click **Finish**.

This completes the Symantec ApplicationHA installation of guest components and configures the single sign-on between the virtual machine and the Console.

Installing ApplicationHA guest components using the command line interface

You can perform a silent installation of the ApplicationHA guest components using the Setup.exe command from the command prompt.

Perform the following steps to install the guest components on a virtual machine. Ensure that the Symantec ApplicationHA software package directory is accessible from the command prompt on the virtual machine.

Note: If User Access Control (UAC) is enabled on Windows Server 2008 or Windows Server 2008 R2 systems, you must launch the command prompt in the Run as administrator mode and then run the command mentioned in this procedure.

To install ApplicationHA guest components using the command line interface

- 1 From the virtual machine where you wish to install the guest components, click **Start > Run**, type `cmd`, and then click **OK** to open the command prompt.
 For Windows Server 2008 or 2008 R2, launch the command prompt in the administrator mode. Right-click the command prompt shortcut from the Windows Start menu and click **Run as administrator** from the context menu.
- 2 In the command window, navigate to the Symantec ApplicationHA software package root directory.
- 3 Use the following command syntax to install:

```
Setup.exe /s solutions=Solution_ID install_mode=Install_mode

installdir="Installdir" reboot=Reboot_ID node="VirtualMachine_Name"

licensekey="licensekey"
```

Here, the maximum length of the argument string is 2048 characters and the syntax is not case sensitive.

Table 2-8 describes the parameters applicable for Setup.exe command.

Table 2-8 ApplicationHA guest components command line install parameters

Parameter	Description
/s	Specifies the silent mode installation. If not set, this launches the product installation wizard.
solutions	Specifies the type of installation. <ul style="list-style-type: none"> ■ 1 = Symantec ApplicationHA Guest Components Installs the Symantec ApplicationHA guest components for virtual machines. ■ 2 = Symantec ApplicationHA Console Installs the Symantec ApplicationHA Console. This option is currently not supported by Symantec ApplicationHA.
install_mode	Specifies install or uninstall operation. <ul style="list-style-type: none"> ■ 1 = Install Installs the component specified by the solution parameter. ■ 5 = Uninstall Removes the component specified by the solution parameter.

Table 2-8 ApplicationHA guest components command line install parameters
(continued)

Parameter	Description
installdir	<p>Optional parameter.</p> <p>Specifies the installation directory. Enclose the path in double quotes.</p> <p>If you do not specify a path, the default installation directory is <i>%ProgramFiles%\Veritas</i>.</p> <p>Example: <code>installdir="C:\Program Files\Veritas"</code></p>
reboot	<p>Optional parameter.</p> <p>Specifies whether or not to reboot the system after the operation.</p> <ul style="list-style-type: none"> ■ 0 = Do not reboot after the operation ■ 1 = Reboot after the operation is complete <p>Default is 0 (Do not reboot after operation).</p> <p>Note: A reboot is required if you are uninstalling Symantec ApplicationHA components using the command line. In case of uninstall, you must set this value to 1.</p>
node	<p>Optional parameter.</p> <p>Specifies the physical name of the virtual machine. Enclose the name in double quotes.</p> <p>Specify only one system at a time.</p> <p>If you do not specify a virtual machine name, the operation is performed on the local system by default.</p> <p>Example: <code>node="SystemA"</code></p>
licensekey	<p>Optional parameter.</p> <p>Specifies the license key for the installation.</p> <ul style="list-style-type: none"> ■ Enclose the license key in double quotes. ■ Enter multiple license keys separated by a comma. Do not put spaces around the comma. <p>If you do not specify a license key, the embedded evaluation license key is installed by default. It is valid for two months.</p> <p>Example: <code>"A2CU-PVEY-LKCJ-672C-G74O-ZNNO-PP6P-PPPP-PPP"</code></p>

After the installation is complete, proceed to configure the single sign-on between the virtual machine and the Console. For details refer to the *Symantec™ ApplicationHA User's Guide*.

Example: ApplicationHA guest components command line installation

The following example installs ApplicationHA guest components on a virtual machine "SystemA". The installation directory is C:\Program Files. The command also tells the virtual machine not to reboot after the installation is complete.

```
Setup.exe /s solutions=1 install_mode=1
installdir="C:\Program Files\Veritas" reboot=0 node="SystemA"
licensekey="A2CU-PVEY-LKCJ-672C-G74O-ZNNO-PP6P-PPPP-PPP"
```

About installing Symantec ApplicationHA guest components using the vSphere Client menu

Installing the guest components using the vSphere Client menu involves the following tasks:

- To install the guest components on the virtual machines running Linux operating system, copy the platform-specific guest installation package on to the Console host.
See "Copying the guest components installation Package" on page 37.
- Install the guest components using the installation wizard.
See "Installing Symantec ApplicationHA guest components using the vSphere Client menu" on page 38.

Copying the guest components installation Package

To install the ApplicationHA guest components on the virtual machines running Windows operating system, ensure that the platform-specific ApplicationHA guest components installation Package is available on the Console host.

Perform the following to copy the guest installer Package

- 1 Insert the product software disc for Linux operating system into your system drive.
- 2 On the Console host, navigate to the following path.
<Installation Path>\ApplicationHA\Console\installer

- 3 Run the Copyinstaller.bat file.
- 4 Enter the parameters in the following format.

```
CopyInstaller <Source>
```

Where,

Source: The directory path where the installer disc is mounted or copied.

For example,

```
CopyInstaller <D:>dvd2-linux\rhel15_x86_64
```

```
CopyInstaller <F:>dvd2-linux\sles11_x86_64
```

Installing Symantec ApplicationHA guest components using the vSphere Client menu

Consider the following points before you proceed with the installation.

- The installer uses the logged-on user account context for installation. Verify that the logged-on user has local administrator privileges on the system where you want to install.
- If UAC is enabled on the virtual machines running Windows Server 2008 or Windows Server 2008 R2, you must log on using the Default Administrator user account.
- Symantec recommends that you first install the Symantec High Availability Console before installing the guest components. The ApplicationHA plugin is registered during the Symantec High Availability Console installation. During the guest components installation, the installer verifies the ApplicationHA plugin registration on the vCenter Server. If the plugin is not registered, the installer displays a prompt. You can choose to proceed with the guest components installation; however the ApplicationHA plugin registration is required for configuring application monitoring from the vSphere Client.
- If you are installing the guest components on two or more virtual machines simultaneously and one of them is the Console host, you must first complete the installation on the Console host.
- Installation of guest components also configures single sign-on between the virtual machine and the Console host. However, if the SSO configuration fails, you must manually configure it after the guest installation is complete. Use the Symantec High Availability tab to configure the SSO manually. For details refer to *Symantec™ ApplicationHA User's Guide*.

The single sign-on authentication is used for all operations on the virtual machine. This is also required so that the server does not prompt you for a user name and password each time you log on to the vSphere Client and click on a virtual machine to view its status.

- The installer allows remote installation. You can launch the installer from any virtual machine, cluster or a datacenter in your network.

In case of remote installations, ensure that the logged-on user has local administrator privileges on all the remote systems where you wish to install the guest components.

Perform the following steps to install the ApplicationHA guest components on the virtual machines, through the vSphere Client menu

- 1 Using the vSphere Client, connect to the vCenter Server and navigate to **Home > Solutions and Applications > Symantec ApplicationHA**.

On the Getting Started tab, click **Install Guest Components**

Alternatively,

Using the vSphere Client, connect to the vCenter Server and navigate to **Home > Hosts and Clusters**.

From the vCenter inventory tree view, right-click on the datacenter, cluster or any of the virtual machine and select **Symantec ApplicationHA > Install Guest Components**.

This launches the Symantec ApplicationHA Guest Components Installer.

- 2 On the Welcome panel, review the prerequisites and the Symantec Software License Agreement. Select the **I accept the terms of license agreement** check box and then click **Next**.

- 3 On the vCenter Server Details panel, specify the vCenter Server user credentials and then click **Next**.

The wizard discovers only those virtual machines where the user has the permissions.

The specified user must have the following privileges:

- ApplicationHA administrator privileges to perform the installation on the virtual machines.
- vCenter privileges for "create tasks", "update tasks" and "acquire guest control ticket" on the virtual machines.

- 4 On the System Selection panel, perform the following tasks:

- Select the virtual machines on which you want to install the guest components.

To select the virtual machines

- Click **Add**.
- On the Select Virtual Machines panel, select the desired virtual machines, specify the required details and click **OK**.
The specified details apply to all the selected virtual machines. If they are different for one or more machines, you can edit them later.
- If required, edit the user credentials and the license key entered.
If the user credentials and license key is different for an individual virtual machine, you can edit the details inline.
If the details to be edited are same for multiple virtual machines, select the desired machines and click **Edit**. On the **Edit Virtual Machine Details** panel, enter the details that apply to the selected virtual machines and click **OK**.

Note: You can customize the installation directory only for the virtual machines running Windows operating system.

- Click **Install** to begin the installation.
The installer performs the required validation checks on the selected virtual machines and moves to the Installation panel, if all the selected virtual machines pass the validation checks.
If the validation checks fail on any of the virtual machines, the status is reflected as follows:
For virtual machines that pass the validation checks: **Ready for install**.
For virtual machines that do not pass the validation checks: **Verification failed**
To view the cause of validation failure, select the virtual machine. The details are displayed in the Verification Details box.
Rectify the issue and then click **Install**.
The installer re-validates the failed virtual machines.

The installer does not proceed with the installation unless all the selected virtual machines have passed the validation checks.

- 5 On the Installation panel, review the progress of the tasks queued. After all the tasks are queued and the status is marked as **complete**, click **Finish**.

This indicates that the selected virtual machines are queued for installation. You can now view the installation progress under the Recent Tasks on vSphere Client.

After the installation is complete single sign-on is configured for the virtual machines with the Symantec High Availability Console host. You can now proceed to configure application monitoring, using the Symantec High Availability tab.

For details, refer to the individual application configuration guide.

Note: If the SSO configuration has failed for a virtual machine and you select that virtual machine from vSphere Client to configure application monitoring for an application, then the Symantec High Availability tab first displays a panel to specify the virtual machine user credentials. This configures the single sign-on for the virtual machine with the Symantec High Availability Console host. After you configure the single sign-on you can configure application monitoring for an application running on the virtual machine.

About installing ApplicationHA components for VMware SRM Server

Setting up application monitoring with Symantec ApplicationHA in a SRM environment involves installation of ApplicationHA components for VMware SRM Server. These components must be installed on the SRM Server at the recovery site.

The ApplicationHA components for VMware SRM Server enables to perform the following tasks and provide the capability to resume application monitoring after the virtual machines are failed over to the recovery site.

- Deploy the Symantec High Availability Console credentials on to the SRM Server and enable communication between the SRM Server and the virtual machines.
- Provide the application status in the VMware recovery history report.

Installing the ApplicationHA components for VMware SRM Server

Use the Symantec ApplicationHA Components Installer for VMware SRM to install the ApplicationHA components for VMware SRM Server. You must perform this installation on the SRM Server, at the recovery site.

Note: The installer helps local installation only. Also, if you plan to configure a bidirectional disaster recovery cluster, you must install the ApplicationHA components for VMware SRM on the protected site SRM Server too.

To install the ApplicationHA components for VMware SRM

- 1 From the machine on which VMware SRM Server is installed, navigate to the Symantec ApplicationHA software package directory and run Setup.exe to launch the installer.
- 2 On the Symantec ApplicationHA Installer, click **Install** under Symantec ApplicationHA Components for VMware SRM. The Symantec ApplicationHA Components Installer for VMware SRM is launched.
- 3 On the Welcome panel, review the prerequisites and click **Next**.
- 4 On the License Agreement panel, read the Symantec Software License Agreement, click **I accept the terms of License Agreement**, and then click **Next**.
- 5 On the System Validation panel, the installer automatically selects the local host for installation and begins the validation checks. After the status shows as "Ready for Install", click **Next**.

The wizard uses *%Program Files%\Veritas* as the default installation directory.

If the virtual machine does not pass the validation checks, the status is reflected as "Verification failed". To view the cause of validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to again perform the validation checks. The wizard does not proceed unless the virtual machine passes the validation checks.

- 6 On the Pre-install Summary panel, review the pre-installation summary and then click **Next**.
Click **Save Report** if you wish to save the pre-installation summary report for reference.
- 7 The Installation panel displays the installation progress. After the panel indicates that the installation is complete, click **Next**.

- 8 On the Post-install Summary panel, review the installation results and then click **Next**.

The wizard configures the required services on the specified SRM Server.

If the installation has failed on the system, review the post-install summary report and refer to the wizard log file for details.

The log file is located at the following location:

For Windows Server 2003:

`%AllUsersProfile%\ApplicationData\Veritas\VPI\log\<date_timestamp>.`

For Windows Server 2008:

`%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>.`

You may have to repeat the installation if the wizard indicates that the installation has failed.

9 On the Console Details panel, specify the following Console details and then click **Next**.

Symantec High Availability Console FQHN	Specify the fully qualified name of the recovery site Console server. Ensure that the specified Console server host name is accessible from the machine where you are installing ApplicationHA components for SRM server.
User Name	Specify the Console server user account name. The specified user must have administrator privileges on the Console server The installer uses this account to authenticate the user account of Symantec High Availability Console and thus set up a link with the SRM server.
Password	Specify the password for the user account specified in the User Name field.

10 On the Finish panel click **Finish**.

This completes the installation of Symantec ApplicationHA Components for VMware SRM.

Proceed to configure single sign-on between the virtual machines at the protected site and the Symantec High Availability Console at the recovery site.

SSO sets up permanent authentication so that you do not have to specify a user name and password each time you want to view the application status on a virtual machine.

Refer to *Symantec ApplicationHA User's Guide* for details on configuring SSO.

Upgrading Symantec ApplicationHA

This chapter includes the following topics:

- About upgrading Symantec ApplicationHA
- Upgrading the ApplicationHA Console
- Upgrading the ApplicationHA guest components using the product installer
- Upgrading the ApplicationHA guest components using CLI
- Upgrading the ApplicationHA guest components using the vSphere Client menu
- Upgrading the ApplicationHA components for VMware SRM Server

About upgrading Symantec ApplicationHA

Upgrading Symantec ApplicationHA involves upgrade of ApplicationHA Console and the guest components. In case of SRM environment, you must also upgrade ApplicationHA components for SRM server.

Note: You must upgrade the Console before you upgrade the guest components. In case of an SRM environment, you must upgrade the Console server at both the sites, followed by the ApplicationHA components for SRM server and then the guest components.

Before you begin to upgrade the Console or guest components, perform the following general pre-upgrade tasks:

- Back up all your data.

For more details on backing up ApplicationHA Console files and registry, refer to *Symantec™ ApplicationHA User's Guide*.

- Ensure that you meet the required prerequisites.
 See “Before installing Symantec ApplicationHA” on page 19.
- Review the licensing details.
 See “About Symantec ApplicationHA licensing ” on page 14.
- Review the supported upgrade matrix
 See “Upgrade matrix” on page 46.

Table 3-1 provides the details for upgrading ApplicationHA components.

Table 3-1 ApplicationHA upgrade details

Component	Upgrade details
Console	See “Upgrading the ApplicationHA Console” on page 47.
ApplicationHA components for VMware SRM	See “Upgrading the ApplicationHA components for VMware SRM Server” on page 59.
Guest	<p>You can upgrade the guest components by using any of the following method:</p> <p>For upgrading the components using the vSphere Client menu See “Upgrading the ApplicationHA guest components using the vSphere Client menu” on page 56.</p> <p>For upgrading the components using the product installer See “Upgrading the ApplicationHA guest components using the product installer” on page 51.</p> <p>For upgrading the components using the CLI See “Upgrading the ApplicationHA guest components using CLI” on page 53.</p>

Upgrade matrix

Table 3-2 provides the supported scenarios for upgrading ApplicationHA.

Table 3-2 Supported upgrade scenarios

Upgrade From	Upgrade To
<ul style="list-style-type: none"> ■ ApplicationHA 5.1 SP1 Console Server ■ ApplicationHA 5.1 SP1 Guest Components 	<ul style="list-style-type: none"> ■ ApplicationHA 6.0 Console Server ■ ApplicationHA 6.0 Guest Components <p>OR</p> <ul style="list-style-type: none"> ■ ApplicationHA 6.0 Console Server ■ ApplicationHA 5.1 SP2 Guest Components <p>OR</p> <ul style="list-style-type: none"> ■ ApplicationHA 6.0 Console Server ■ ApplicationHA 5.1 SP1 Guest Components
<ul style="list-style-type: none"> ■ ApplicationHA 5.1 SP2 Console Server ■ ApplicationHA 5.1 SP2 Components for VMware SRM ■ ApplicationHA 5.1 SP2 Guest Components 	<ul style="list-style-type: none"> ■ ApplicationHA 6.0 Console Server ■ ApplicationHA 6.0 Components for VMware SRM ■ ApplicationHA 6.0 Guest Components <p>OR</p> <ul style="list-style-type: none"> ■ ApplicationHA 6.0 Console Server ■ ApplicationHA 6.0 Components for VMware SRM ■ ApplicationHA 5.1 SP2 Guest Components

Upgrading the ApplicationHA Console

Use the ApplicationHA product installer to upgrade the Console. You can upgrade the Console on local machine only. After upgrade, the updated ApplicationHA plugin is registered on the vCenter Server.

Note the following before you begin to upgrade the Console:

- For upgrading the Console from 5.1 SP1 to 6.0
 If you have configured application monitoring for ApplicationHA Console, then you must unconfigure the same before upgrading the Console. After the upgrade is complete, you must reconfigure it again for application monitoring.
- For upgrading the Console from 5.1 SP2 to 6.0
 If you have configured application monitoring for ApplicationHA Console, then you must suspend the application monitoring before upgrading the Console. During the time the monitoring is suspended, Symantec ApplicationHA

does not monitor the state of the Console Server. After the upgrade is complete, you can resume the application monitoring.

For more details on suspending and resuming the application monitoring, refer to, *Symantec™ ApplicationHA User's Guide*.

Note: In case the Console upgrade process fails, you must uninstall the Console and then reinstall it.

See “Uninstalling Symantec ApplicationHA Console” on page 73.

To upgrade the ApplicationHA Console

- 1 From the machine where you want to upgrade ApplicationHA Console, navigate to the Symantec ApplicationHA software package directory and run **Setup.exe** to launch the installer.
- 2 On the Symantec ApplicationHA Installer, click **Install** under Symantec ApplicationHA Console to launch the installation wizard.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.
- 4 On the License Agreement panel, read the Symantec Software License Agreement, select **I accept the terms of License Agreement**, and then click **Next**.

- 5 On the VMware vCenter Server Details panel, specify the vCenter Server details and then click **Next**.

Provide the following details:

ApplicationHA Console IP	<p>Select the IP address of the local system from the drop-down list.</p> <p>This is the IP of the machine where you will install the ApplicationHA Console.</p> <p>The drop-down list may display several IPs if the system has multiple network adapters each with a unique IP address assigned.</p> <p>Select the host IP address that was used during the previous installation. This IP address must be accessible from the vCenter Server.</p>
vCenter Server FQHN or IP	<p>Specify the fully qualified host name or IP address of the VMware vCenter Server.</p> <p>Ensure that the specified vCenter Server FQHN or IP address is the same as that specified during the previous installation. This FQHN or IP address must be accessible from the machine where you are installing ApplicationHA Console.</p>
Web Service Https Port	<p>Specify the https port used by the VMware Web Service.</p> <p>The default port number is 443.</p>
User Name	<p>Specify the name of the user account that has the privileges to extend the vSphere Client.</p> <p>The installer uses this account to register the updated ApplicationHA plugin on the vCenter Server.</p>
Password	<p>Specify the password for the user account specified in the User Name field.</p>

- 6 On the System Validation panel, the installer automatically selects the local host for installation and begins the validation checks.

After the status shows as **Ready for Upgrade**, click **Next**.

The installation directory used during the previous installation is selected by default. You cannot customize the installation directory location.

If the virtual machine does not meet the required criteria, the status is reflected as "Verification failed". To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again. The wizard does not proceed unless the virtual machine has passed the validation checks.

- 7 On the Pre-install Summary panel, review the pre-installation summary and then click **Next**.

Click **Save Report** if you wish to save the pre-installation summary report for reference.

- 8 On the Stop Services panel, review the status of services getting stopped.

If a service fails to stop, click **Retry** to initiate the process again. If the service again fails to stop, run the following commands to manually stop the service:

Service	Command
Symantec ApplicationHA service	<code>net stop "ApplicationHA Server"</code>
Symantec ApplicationHA Authentication Service	<code>net stop "AppHASecD"</code>
Symantec ApplicationHA Database Service	<code>net stop "SQLANYe_ApplicationHADb"</code>

- 9 The Installation panel displays the installation progress. After the panel indicates that the installation is complete, click **Next**.

- 10 On the Post-install Summary panel, review the installation results and then click **Next**.

The wizard configures the required services and registers the updated Symantec ApplicationHA plugin on the specified vCenter Server.

If the installation has failed, review the post-install summary report and refer to the wizard log file for details.

The log file is located at

```
%AllUsersProfile%\Veritas\VPI\log\
```

If the logs indicate that the Symantec ApplicationHA plugin registration has failed, you may have to manually register the plugin on the vCenter Server. Use the PluginMgmt.bat utility to register the plugin.

Refer to *Symantec™ ApplicationHA User's Guide* for details on the PluginMgmt.bat utility.

- 11 On the Finish panel click **Finish**.

This completes the upgrade of Symantec ApplicationHA Console.

Upgrading the ApplicationHA guest components using the product installer

You can upgrade the guest components, using the ApplicationHA product installer.

To upgrade the ApplicationHA guest components using the product installer

- 1 From any machine where you want to upgrade the ApplicationHA guest components, navigate to the Symantec ApplicationHA software package and run **Setup.exe** to launch the installer.
- 2 On the Symantec ApplicationHA Installer, click **Install** under Symantec ApplicationHA Guest Components to launch the installation wizard.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.
- 4 On the License Agreement panel, read the Symantec Software License Agreement, select **I accept the terms of License Agreement**, and then click **Next**.
- 5 On the License panel, specify the appropriate licensing details and then click **Next**.

You can specify the licensing in the following ways:

- Select **Use embedded 2-month evaluation key** to use the inbuilt license key. The evaluation license key supports all features and options and is valid for two months.

Or

- Select **Enter license key**, specify the permanent license number in the field and then click **Add**.

Select a key in the box to see the list of features and options that are available for use with the specified license key.

To remove a specified key, select the key in the box and then click **Remove**.

- 6 On the System Validation panel, wizard selects the local host by default and begins the validation checks. After the status displays "Ready for Upgrade" click **Next**.

The installation directory used during the previous installation is selected by default. You cannot customize the installation directory location.

If the virtual machine does not meet the required criteria, the status is reflected as "Verification failed". To view the cause of a validation failure, click the Information icon.

Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed with the installation unless the virtual machine passes the validation checks.

- 7 On the Pre-install Summary panel, review the pre-installation summary and then click **Next**.

Click **Save Report** if you wish to save the pre-installation summary report for reference.

- 8 On the Stop Services panel, review the status of Veritas High Availability Engine service getting stopped.

If a service fails to stop, click **Retry** to initiate the process again. If the service again fails to stop, run the `%VCS_HOME%\bin\hastop.exe -local -force` command to manually stop the service.

- 9 The Installation panel displays the installation progress.

After the panel indicates that the installation is complete, click **Next**.

- 10 On the Post-install Summary panel, review the installation results and then click **Next**.

If the installation has failed, review the post-install summary report and refer to the wizard log file for details.

The log file is located at the following location:

For Windows Server 2003:

```
%AllUsersProfile%\ApplicationData\Veritas\VPI\log\
```

For Windows Server 2008:

```
%AllUsersProfile%\Veritas\VPI\log\
```

You may have to repeat the installation in case of failed installations.

- 11 On the Configure Single Sign-on panel, specify the required details and then click **Next**.

Note: You must complete the single sign-on configuration as a part of guest components upgrade. Unlike fresh install, do not choose to configure the single sign-on later. Unless the single sign-on is configured the Veritas Storage Foundation Messaging Service fails to start.

- 12 On the Finish panel click **Finish**.

This completes the upgrade of Symantec ApplicationHA guest components.

Upgrading the ApplicationHA guest components using CLI

You can perform a silent upgrade of the ApplicationHA guest components using the Setup.exe command from the command prompt.

Perform the following steps to upgrade the guest components on a virtual machine. Ensure that the Symantec ApplicationHA software package directory is accessible from the command prompt on the virtual machine.

Using CLI, you can upgrade the guest components on local machine only.

Note: If User Access Control (UAC) is enabled on Windows Server 2008 or Windows Server 2008 R2 systems, you must launch the command prompt in the Run as administrator mode and then run the command mentioned in this procedure.

To upgrade ApplicationHA guest components using the command line interface

- 1 From the virtual machine where you wish to upgrade the guest components, click **Start > Run**, type `cmd`, and then click **OK** to open the command prompt.
 For Windows Server 2008 or 2008 R2, launch the command prompt in the administrator mode. Right-click the command prompt shortcut from the Windows Start menu and click **Run as administrator** from the context menu.
- 2 In the command window, navigate to the Symantec ApplicationHA software package root directory.
- 3 Use the following command syntax to install:

```
Setup.exe /s solutions=Solution_ID install_mode=Install_mode
  

  installdir="Installdir" reboot=Reboot node="VirtualMachine_Name"
  

  licensekey="licensekey" options="options"
```

Note: The installation directory used during the previous installation is selected by default. You cannot customize the installation directory location.

Here, the maximum length of the argument string is 2048 characters and the syntax is not case sensitive.

Table 3-3 describes the parameters applicable for Setup.exe command.

Table 3-3 ApplicationHA guest components command line install parameters

Parameter	Description
/s	Specifies the silent mode installation. If not set, this launches the product installation wizard.
solutions	Specifies the type of installation. <ul style="list-style-type: none"> ■ 1 = Symantec ApplicationHA guest components Installs the Symantec ApplicationHA guest components for virtual machines. ■ 2 = Symantec ApplicationHA Console Installs the Symantec ApplicationHA Console. This option is currently not supported by Symantec ApplicationHA.

Table 3-3 ApplicationHA guest components command line install parameters
(continued)

Parameter	Description
install_mode	<p>Specifies install or uninstall operation.</p> <ul style="list-style-type: none"> ■ 1 = Install Installs the component specified by the solution parameter. ■ 5 = Uninstall Removes the component specified by the solution parameter.
reboot	<p>Optional parameter.</p> <p>Specifies whether or not to reboot the system after the operation.</p> <ul style="list-style-type: none"> ■ 0 = Do not reboot after the operation ■ 1 = Reboot after the operation is complete <p>Default is 0 (Do not reboot after operation).</p> <p>Note: A reboot is required if you are uninstalling Symantec ApplicationHA components using the command line. In case of uninstall, you must set this value to 1.</p>
node	<p>Optional parameter.</p> <p>Specifies the physical name of the system. Enclose the name in double quotes. Specify only one system at a time.</p> <p>If you do not specify a system name, the operation is performed on the local system by default.</p> <p>Example: node="SystemA"</p>
licensekey	<p>Optional parameter.</p> <p>Specifies the license key for the installation.</p> <ul style="list-style-type: none"> ■ Enclose the license key in double quotes. ■ Enter multiple license keys separated by a comma. Do not put spaces around the comma. <p>If you do not specify a license key, the license key specified during the previous installation is selected by default.</p> <p>Example: "A2CU-PVEY-LKCJ-672C-G74O-ZNNO-PP6P-PPPP-PPP"</p>
options	<p>Optional parameter.</p> <p>This parameter is currently not applicable for Symantec ApplicationHA.</p>

After the installation is complete, proceed to configure the single sign-on between the virtual machine and the Console. For details refer to the *Symantec™ ApplicationHA User's Guide*.

Example: ApplicationHA guest components command line upgrade

The following example upgrades ApplicationHA guest components on a virtual machine SystemA. The command also tells the system not to reboot after the installation is complete.

Note: The installation directory used during the previous guest installation is selected by default. You cannot customize the installation directory location.

```
Setup.exe /s solutions=1 install_mode=1  
reboot=0 node="SystemA"  
licensekey="A2CU-PVEY-LKCJ-672C-G74O-ZNNO-PP6P-PPPP-PPP"
```

Upgrading the ApplicationHA guest components using the vSphere Client menu

Perform the following steps to upgrade the ApplicationHA guest components on the virtual machines, through the vSphere Client menu.

You can upgrade the guest components on virtual machines running Windows as well as any of the supported Linux operating systems.

Note: Ensure that the platform-specific ApplicationHA guest components installation package is available on the Console.

To copy the software, run the CopyInstaller.bat file on the Console host. The file is located at the following location:

```
<Installation Path>\applicationHA\console\installer
```

To upgrade the ApplicationHA guest components

- 1 Using the vSphere Client, connect to the vCenter Server and navigate to **Home > Solutions and Applications > Symantec ApplicationHA**.

On the Getting Started tab, click **Install Guest Components**

Alternatively,

Using the vSphere Client, connect to the vCenter Server and navigate to **Home > Hosts and Clusters**.

From the vCenter inventory tree view, right-click on the datacenter, cluster or any of the virtual machine and select **Symantec ApplicationHA > Install Guest Components**.

This launches the Symantec ApplicationHA Guest Components Installer.

- 2 On the Welcome panel, review the prerequisites and the Symantec Software License Agreement and then click **Next**.
- 3 On the vCenter Server Details panel, specify the vCenter Server user credentials. Click **Next**.

The wizard discovers only those virtual machines where the user has the permissions.

The specified user must have the following privileges:

- ApplicationHA administrator privileges to perform the installation on the virtual machines.
- vCenter privileges to "create tasks", "update tasks" and "acquire guest control ticket" on the virtual machines.

- 4 On the System Selection panel, perform the following tasks:
 - Select the virtual machines on which you want to install the guest components.
To select the virtual machines
 - Click **Add**.
 - On the Select Virtual Machines panel, select the desired virtual machines, specify the required details and click **OK**.
The specified details apply to all the selected virtual machines. If they are different for one or more machines, you can edit them later.
 - If required, edit the user credentials and the license key entered.
If the user credentials and license key is different for an individual virtual machine, you can edit the details inline.

If the details to be edited are same for multiple virtual machines, select the desired machines and click **Edit**. On the **Edit Virtual Machine Details** panel, enter the details that apply to the selected virtual machines and click **OK**.

Note: For the virtual machines running Windows operating system the installation directory used during the previous installation is selected by default. You cannot customize the installation directory.

- Click **Install** to begin the installation.

The installer performs the required validation checks on the selected virtual machines and moves to the Installation panel, if all the selected virtual machines pass the validation checks.

If the validation checks fail on any of the virtual machines, the status is reflected as follows:

For virtual machines that pass the validation checks: **Ready for install**.

For virtual machines that do not pass the validation checks: **Verification failed**

To view the cause of validation failure, select the virtual machine. The details are displayed in the Verification Details box.

Rectify the issue and then click **Install**. The installer re-validates the machines for the required criteria.

The installer does not proceed with the installation unless all the selected machines have passed the validation checks.

- 5 On the Installation panel, review the progress of the tasks queued. After all the tasks are queued and the status is marked as **complete**, click **Finish**.

This indicates that the selected virtual machines are queued for installation.

You can now view the installation progress under the Recent Tasks on vSphere Client.

After the installation is complete single sign-on is configured for the virtual machines with the Symantec High Availability Console host.

Note: If the SSO configuration has failed for a virtual machine the Symantec High Availability dashboard does not display the virtual machine and the status of the application running on the virtual machine.

Upgrading the ApplicationHA components for VMware SRM Server

You can upgrade the ApplicationHA components for VMware SRM, using the product installer. The installer helps local installation only.

To upgrade the ApplicationHA components for VMware SRM

- 1 From the machine on which VMware SRM Server is installed, navigate to the Symantec ApplicationHA software package directory and run Setup.exe to launch the installer.
- 2 On the Symantec ApplicationHA Installer, click **Install** under Symantec ApplicationHA Components for VMware SRM. The Symantec ApplicationHA Components Installer for VMware SRM is launched.
- 3 On the Welcome panel, review the prerequisites and click **Next**.
- 4 On the License Agreement panel, read the Symantec Software License Agreement, click **I accept the terms of License Agreement**, and then click **Next**.
- 5 On the System Validation panel, the installer automatically selects the local host for installation and begins the validation checks. After the status shows as "Ready for Upgrade", click **Next**.

The installation directory used during the previous installation is selected by default. You cannot customize the installation directory location.

If the virtual machine does not pass the validation checks, the status is reflected as "Verification failed". To view the cause of validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to again perform the validation checks. The wizard does not proceed unless the virtual machine passes the validation checks.

- 6 On the Pre-install Summary panel, review the pre-installation summary and then click **Next**.

Click **Save Report** if you wish to save the pre-installation summary report for reference.

- 7 The Installation panel displays the installation progress. After the panel indicates that the installation is complete, click **Next**.

- 8 On the Post-install Summary panel, review the installation results and then click **Next**.

The wizard configures the required services on the specified SRM Server.

If the installation has failed on the system, review the post-install summary report and refer to the wizard log file for details.

The log file is located at the following location:

For Windows Server 2003:

`%AllUsersProfile%\ApplicationData\Veritas\VPI\log\`

For Windows Server 2008:

`%AllUsersProfile%\Veritas\VPI\log\`

You may have to repeat the installation if the wizard indicates that the installation has failed.

- 9 On the Console Details panel, specify the following Console details and then click **Next**.

Symantec High Availability Console FQHN	Specify the fully qualified name of the Console server. Ensure that the specified Console server host name is accessible from the machine where you are installing ApplicationHA components for SRM server.
User Name	Specify the Console server user account name. The specified user must have administrator privileges on the Console server The installer uses this account to authenticate the user account of Symantec High Availability Console and thus set up a link with the SRM server.
Password	Specify the password for the user account specified in the User Name field.

- 10 On the Finish panel click **Finish**.

This completes the upgrade of Symantec ApplicationHA Components for VMware SRM.

Administering Symantec ApplicationHA installation

This chapter includes the following topics:

- Repairing the Symantec High Availability Console installation
- Repairing Symantec ApplicationHA guest components installation on a virtual machine
- Repairing the installation of ApplicationHA components for VMware SRM
- About managing ApplicationHA licenses

Repairing the Symantec High Availability Console installation

Use the Symantec ApplicationHA installer to repair the Symantec High Availability Console installation in your VMware virtualization environment.

Repairing the installation restores the server installation to its original state. Repairing fixes missing or corrupt files, shortcuts, and registry entries on the local system.

Note: You can repair the Symantec High Availability Console installation on the local system only. Repairing an installation remotely is not supported.

Consider the following points before you proceed:

- If the virtual machine is added as a managed host to the VOM central server, before repairing the Symantec ApplicationHA guest components, you must first repair the Veritas Operations Manager (Host Component) on the system.

- If you have configured application monitoring for Symantec High Availability Console, then you must unconfigure the same before repairing the installation. After the installation repair is complete, you must reconfigure it again for application monitoring.
- While the installer is repairing the server installation, application monitoring may be temporarily suspended.
If you have configured application monitoring, then the ApplicationHA view and the Symantec High Availability dashboard in the vSphere Client may not display the most current status of the applications configured on the virtual machines.
- The installer uses the logged-on user account context to perform the repair. Verify that the logged-on user has local administrator privileges on the system where you want to repair the installation.
- After the repair completes successfully, you may have to register the Symantec ApplicationHA plugin on the VMware vCenter Server again.
For details refer to *Symantec™ ApplicationHA User's Guide*.

To repair the Symantec High Availability Console installation

- 1 On the Symantec High Availability Console host open Windows Add or Remove Programs.
Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.
In case of Windows Server 2008, click **Start > Settings > Control Panel** and then double-click **Programs and Features**.
- 2 In the Add or Remove Programs window, select **Symantec ApplicationHA 6.0 Console** in the programs list and then click **Change** to launch the Symantec ApplicationHA installer.
- 3 On the Mode Selection panel, click **Repair** and then click **Next**.
- 4 Click **OK** on the dialog box that prompts you to repair the Veritas Operations Manager (Host Component).
Refer to VOM documentation for more information.

- 5 On the System Validation panel the installer automatically selects the local system for repair and begins the validation checks. After the status shows as *Ready for repair*, click **Next**.

You can repair the installation on the local system only.

If the system does not meet the required criteria, the status is reflected as "Verification failed". To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed with the repair unless the system has passed the validation checks.

- 6 On the Pre-install Summary panel, review the pre-update summary and then click **Next**.

Click **Save Report** if you wish to save the summary report for reference.

- 7 The Installation panel displays the installation progress. After the panel indicates that the installation is complete, click **Next**.

- 8 On the Post-install Summary panel, review the installation results and then click **Next**.

If the installation has failed, review the post-install summary report and refer to the wizard log file for details.

The log file is located at

`%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>`.

You may have to repeat the installation repair in case the installation fails.

- 9 On the Finish panel click **Finish**.

This completes the Symantec High Availability Console installation repair.

- 10 If you have configured application monitoring for Symantec High Availability Console, start the Veritas High Availability Engine service on the Symantec High Availability Console host.

Type the following on the command prompt:

```
hastart
```

- 11 After performing the repair, the Symantec High Availability tab may fail to retrieve the application status. In such a case, you may have to close the Symantec High Availability tab and open it again.

In the vSphere Client, click another virtual machine, then click the original virtual machine again and then select the Symantec High Availability tab, or exit the vSphere Client and launch it again. The Symantec High Availability view then displays the status of the configured applications on the virtual machine.

The Symantec High Availability dashboard also displays the status of the configured applications on the virtual machine, and the other virtual machines under ApplicationHA control in the same cluster or data center.

Repairing Symantec ApplicationHA guest components installation on a virtual machine

Use the Symantec ApplicationHA installer to repair the Symantec ApplicationHA guest components installation on the virtual machines in your VMware virtualization environment. You can repair the guest components installation on the local system only. Repairing an installation remotely is not supported.

Repairing the installation on a virtual machine restores the installation to its original state. Repairing fixes missing or corrupt files, shortcuts, and registry entries on the local system.

Note: Repairing does not fix the missing or corrupt product license files. To add, modify or repair licenses you must use the License Management option.

Consider the following points before you proceed:

- If the virtual machine is added as a managed host to the VOM central server, before repairing the Symantec ApplicationHA guest components, you must first repair the Veritas Operations Manager (Host Component) on the system.
- While the installer is repairing the installation on the virtual machine, application monitoring may be temporarily suspended.

If you have configured application monitoring, then the ApplicationHA view and the ApplicationHA dashboard in the vSphere Client may not display the most current status of the applications and services on the virtual machine.

- The installer uses the logged-on user account context to perform the repair. Verify that the logged-on user has local administrator privileges on the system where you want to repair the installation.
- The Virtual Machine Auto Recovery configuration is restored when the Backup Exec Virtual Machine Auto-Recovery database and the ApplicationHA Console Server database are synchronized after the guest installation is repaired.

To repair the guest components

- 1 On the virtual machine open Windows Add or Remove Programs.
Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.
In case of Windows Server 2008, click **Start > Settings > Control Panel** and then double-click **Programs and Features**.
- 2 In the Add or Remove Programs window, select **Symantec ApplicationHA 6.0 Guest Components** and then click **Change** to launch the Symantec ApplicationHA installer.
- 3 On the Mode Selection panel, click **Repair** and then click **Next**.
- 4 Click **OK** on the dialog box that prompts you to repair the Veritas Operations Manager (Host Component).
Refer to VOM documentation for more information.
- 5 On the System Validation panel the installer automatically selects the local system for repair and begins the validation checks. After the status shows as *Ready for repair*, click **Next**.
You can repair the installation on the local system only.
If the system does not meet the required criteria, the status is reflected as *Verification failed*. To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again.
The wizard does not proceed with the repair unless the system has passed the validation checks.
- 6 On the Pre-install Summary panel, review the pre-update summary and then click **Next**.
Click **Save Report** if you wish to save the summary report for reference.

- 7 On the Installation panel review the installation progress. After the panel indicates that the installation is complete, click **Next**.
- 8 On the Post-install Summary panel, review the installation results and then click **Next**.

If the installation has failed, review the post-install summary report and refer to the wizard log file for details.

The log file is located at,

On Windows Server 2003:

```
%AllUsersProfile%\ApplicationData\Veritas\VPI\log\
```

On Windows Server 2008 and 2008 R2:

```
%AllUsersProfile%\Veritas\VPI\log\
```

You may have to repeat the installation repair in case the installation fails.

- 9 On the Finish panel click **Finish**.

This completes the Symantec ApplicationHA guest components installation repair.

Repairing the installation of ApplicationHA components for VMware SRM

Repairing fixes missing or corrupt files, shortcuts, and registry entries on the local system.

Use the Symantec ApplicationHA installer to repair the installation of ApplicationHA components for VMware SRM. You must run the installer on the VMware SRM Server.

You can repair the installation on the local system only. Repairing an installation remotely is not supported.

The installer uses the logged-on user account context to perform the repair. Verify that the logged-on user has local administrator privileges on the system where you want to repair the installation.

Also, before repairing the installation of ApplicationHA components for VMware SRM, you must first repair the Veritas Operations Manager (Host Component) on the system. The installer prompts you to run the VOM host component repair.

To repair the SRM component installation

- 1 On the SRM server open Windows Add or Remove Programs.
On a Windows Server 2008 or 2008 R2 system, open Programs and Features.
- 2 Select **Symantec ApplicationHA 6.0 Components for VMWare SRM** in the programs list and then click **Change** to launch the ApplicationHA installer.
- 3 On the Mode Selection panel, click **Repair** and then click **Next**.
- 4 Click **Ok** on the dialog box that prompts you to repair the Veritas Operations Manager (Host Component).

You must repair the VOM host component before you proceed. From Windows Add or Remove Programs, select Veritas Operations Manager (Host Component) and click Change to launch the installer. Then follow the installer steps to complete the repair.

Refer to VOM documentation for more information.

- 5 On the System Validation panel, the installer automatically selects the local host for installation and begins the validation checks. After the status shows as "Ready for repair", click **Next**.

If the system does not meet the required criteria, the status is reflected as *Verification failed*. To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed with the repair unless the system has passed the validation checks.

- 6 On the Pre-install Summary panel, review the pre-update summary and then click **Next**.

Click **Save Report** if you wish to save the summary report for reference.

- 7 On the Installation panel review the installation progress. After the panel indicates that the installation is complete, click **Next**.
- 8 On the Post-install Summary panel, review the installation results and then click **Next**.

If the installation has failed, review the post-install summary report and refer to the wizard log file for details.

On Windows Server 2003 the log file is located at:

`%AllUsersProfile%\ProgramData\Veritas\VPI\log\<date_timestamp>`

On Windows Server 2008 and 2008 R2, the log file is located at:

`%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>`

- 9 On the Console Details panel, specify the following recovery site Console details and then click **Next**.

Symantec High Availability Console FQHN	Specify the fully qualified name of the Console server. Ensure that the specified Console server host name is accessible from the machine where you are installing ApplicationHA components for SRM server.
User Name	Specify the Console server user account name. The specified user must have administrator privileges on the Console server The installer uses this account to authenticate the user account of Symantec High Availability Console and thus set up a link with the SRM server.
Password	Specify the password for the user account specified in the User Name field.

- 10 On the Finish panel click **Finish**.

This completes the installation repair of ApplicationHA Components for VMware SRM.

About managing ApplicationHA licenses

You may want to update your licenses or add a license key if the embedded two-month evaluation key has expired.

You can update the licenses by adding or removing specific license keys on any virtual machine that has Symantec ApplicationHA guest components installed. Removing of license keys is supported only if you manage the licenses using the Windows Add or Remove Programs.

Use any of the following methods to manage the licenses:

- Connect to the vCenter Server and navigate to **Home > Solutions and Application > Symantec ApplicationHA**.
Use this method to manage licenses for local and remote virtual machines.
- Connect to the vCenter Server and select the virtual machine for which you want to update the licenses. Select the ApplicationHA tab and click Licenses.
Use this method to manage licenses for the local virtual machine.
- Navigate to the Windows Add or Remove Programs to launch the Symantec ApplicationHA installer and then choose the License Management option.

Use this method to manage licenses for the local virtual machine.
See “Managing ApplicationHA licenses using the product installer” on page 69.

Managing ApplicationHA licenses using the product installer

Perform the following steps to manage ApplicationHA licenses, using the product installer. You must perform these steps on the system where you want to update the licenses.

Note: The system must have Symantec ApplicationHA guest components installed.

To manage the ApplicationHA licenses

- 1 Launch Windows Add or Remove Programs from the Windows start menu.
- 2 Select **Symantec ApplicationHA 6.0 Guest Components** and then click **Change** to launch the **Symantec ApplicationHA** installer.
- 3 On the Mode Selection panel, select **License Management** and then click **Next**.
- 4 On the License panel, select **Enter license key(s)** and then enter the license key that you want to add.
Click **Add**.
- 5 To review the license details, select the license key from the list of keys displayed. The details are displayed in the **License key details** box.
If you want to remove a license key, select the license key and click **Remove**.
- 6 Click **Finish**.
The specified licenses take effect immediately.

Managing ApplicationHA licenses through vSphere Client menu

Perform the following steps to manage ApplicationHA licenses through vSphere Client menu. You can manage licenses on local and remote virtual machines.

To manage the ApplicationHA licenses

- 1 Connect to the vCenter Server and navigate to **Home > Solutions and Applications > Symantec ApplicationHA**
- 2 Click the **License Management** tab.
- 3 Select the desired virtual machines and click **Next**.
Only the machines that are powered ON can be selected.

- 4 Select a virtual machine and click **Add License**.
Use the **CTRL** key to select multiple virtual machines.
- 5 Enter the license key in the **Add License Key** text box and click **Validate Key**.
The installer validates the license key. For successful validation the status reflects **New license applied**. In case of validation failure, the status reflects **Validation Failed. Enter a valid license key**. Click **Ok**.
- 6 Click **Apply**.
The specified license keys take effect immediately.
To view the details of the existing licenses, select the individual virtual machine. The details are displayed in the **Existing License Details** table.

Managing ApplicationHA licenses through Symantec High Availability tab

Perform the following steps to manage ApplicationHA licenses through the Symantec High Availability tab.

To manage the ApplicationHA licenses

- 1 Connect to the vCenter Server and from the Host and Clusters select the virtual machine for which you want to update the licenses.
- 2 Click the **Symantec High Availability** tab and then click **Licenses**.
- 3 On the License Management panel, enter the new license key in the **Enter license key** text box and then click **Add**.
- 4 Click **Close**.

Uninstalling Symantec ApplicationHA

This chapter includes the following topics:

- Uninstalling Symantec ApplicationHA guest components from the virtual machine
- Uninstalling Symantec ApplicationHA Console
- Uninstalling ApplicationHA components for VMware SRM Server

Uninstalling Symantec ApplicationHA guest components from the virtual machine

Use the Symantec ApplicationHA installer to uninstall the Symantec ApplicationHA components from the virtual machine in your VMware virtualization environment.

Consider the following points before you proceed:

- If application monitoring is configured on the virtual machine, you must first remove the configuration. This is required for a clean uninstall of Symantec ApplicationHA components.
- The installer uses the logged-on user account context for uninstallation. Verify that the logged-on user has local Administrator privileges on the system where you want to uninstall.
- A reboot is required post uninstallation. The installer can automatically reboot the systems after the uninstallation is complete. If you wish to reboot the systems later, uncheck the automatic reboot option on the wizard's Pre-uninstall Summary panel.

- The uninstallation must run locally. Remote uninstall is not supported.
- For uninstallation on Windows Server 2008 systems, ensure that the Application Information service is running on all the systems.
To start the service type the following on the command prompt:

```
net start appinfo
```

Perform the following steps to remove the Symantec ApplicationHA components from the virtual machine.

To remove the Symantec ApplicationHA components from the virtual machine

- 1 On a virtual machine launch Windows Add or Remove Programs from the Windows start menu.

Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.

In case of Windows Server 2008, click **Start > Settings > Control Panel** and then double-click **Programs and Features**.
- 2 In the Add or Remove Programs window, select **Symantec ApplicationHA 6.0 Guest Components** and then click **Remove**. In case of Windows Server 2008, click **Uninstall**.

This launches the Symantec ApplicationHA installer.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.
- 4 On the System Validation panel, the wizard selects the local host by default and begins the validation checks. After the status reflects "Ready for uninstall", click **Next**.

If a system does not meet the required criteria, the status is reflected as **Verification failed**. To view the cause of a validation failure, click the Information icon.

Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed with the uninstallation unless the system passes the validation checks.
- 5 On the Pre-uninstall Summary panel, review the pre-uninstallation summary and then click **Next**.

Click **Save Report** if you wish to save the summary report for reference.

If you do not want the installer to reboot the systems after the uninstallation, clear the **Automatically reboot systems after installer completes the operation** check box.

You must manually reboot the system later.

- 6 On the Un-installation panel review the un-installation progress. After the panel indicates that the tasks are complete, click **Next**.
- 7 On the Post-uninstall Summary panel, review the results and then click **Next**.
Click **Save Report** if you wish to save the summary report for reference.
If the uninstallation has failed, review the post-uninstall summary report and refer to the wizard log file for details.
The log file is located at,
On Windows Server 2003:
`%AllUsersProfile%\ApplicationData\Veritas\VPI\log\<date_timestamp>.`
On Windows Server 2008 and 2008 R2:
`%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>.`
- 8 On the Finish panel click **Finish**.
- 9 Click **Yes** on the dialog box that prompts for the system reboot.
Click **No** if you wish to reboot the system later.
The uninstallation requires a reboot of the system. If you had not selected the automatic reboot option, you must manually reboot the system.
This completes the Symantec ApplicationHA guest components uninstallation.

Uninstalling Symantec ApplicationHA Console

Use the Symantec ApplicationHA installer to uninstall the Symantec ApplicationHA Console from your VMware virtualization environment.

Consider the following points before you proceed:

- As part of the server uninstallation, the installer also unregisters the Symantec ApplicationHA plugin for vCenter Server. As a result the ApplicationHA tab and the ApplicationHA dashboard will be removed from the vSphere Client.
- If the purpose of the uninstall is to replace the existing server with another ApplicationHA Console, then the application monitoring may not be visible in the vSphere Client until the new server is installed and configured. The ApplicationHA view and the ApplicationHA dashboard in the vSphere Client may not display the most current status of the applications configured on the virtual machines.
- A reboot is required post uninstallation. The installer can automatically reboot the system after the uninstallation is complete. If you wish to reboot the system later, clear the automatic reboot option on the wizard's Pre-uninstall Summary panel.

- The uninstallation must run locally. Remote uninstall is not supported.
- The installer uses the logged-on user account context to perform the uninstallation. Verify that the logged-on user has local administrator privileges on the system where you want to uninstall.
- If you have configured application monitoring for ApplicationHA Console, then you must unconfigure the same before uninstalling the Console.

Perform the following steps to uninstall the Symantec ApplicationHA Console.

To uninstall the Symantec ApplicationHA Console

- 1 On the ApplicationHA Console host open Windows Add or Remove Programs. Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.
In case of Windows Server 2008, click **Start > Settings > Control Panel** and then double-click **Programs and Features**.
- 2 In the Add or Remove Programs window, select **Symantec ApplicationHA 6.0 Console** and then click **Remove**. In case of Windows Server 2008, click **Uninstall**.
This launches the Symantec ApplicationHA installer.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.

- 4 On the VMware vCenter Server Details panel, specify the vCenter Server details and then click **Next**.

Provide the following details:

ApplicationHA Console IP	Specify the IP address of the local system. This is the IP of the machine that was used during the ApplicationHA Console installation.
vCenter Server FQHN or IP	Specify the fully qualified host name or IP address of the VMware vCenter Server. Ensure that the specified vCenter Server fully qualified host name or IP address is accessible from the ApplicationHA Console host.
Web Service Https Port	Specify the https port used by the VMware Web Service. The default port number is 443.
User Name	Specify the name of the user account that has the privileges to extend the vSphere Client. The installer uses this account to unregister the ApplicationHA plugin on the vCenter Server.
Password	Specify the password for the user account specified in the User Name field.

- 5 On the System Validation panel, the installer automatically selects the local host for uninstallation and begins verification. After the status shows as **Ready for uninstall**, click **Next**.

If the system does not meet the required criteria, the status is reflected as **Verification failed**. To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again.

The wizard does not proceed unless the system passes the validation checks.

- 6 On the Pre-uninstall Summary panel, review the summary and then click **Next**.

Click **Save Report** if you wish to save the pre-uninstallation summary report for reference.

If you do not want the installer to reboot the system after the uninstallation, clear the **Automatically reboot systems after installer completes the operation** check box.

You must manually reboot the system later.

- 7 Click **OK** on the dialog box that confirms about the system reboot. To change the reboot option click **Cancel**.
- 8 The Symantec ApplicationHA Console Un-installation panel displays the progress of the uninstallation.
After the panel indicates that the uninstallation is complete, click **Next**.
The installer stops the required services and unregisters the Symantec ApplicationHA plugin on the vCenter Server.
- 9 On the Post-uninstall Summary panel, review the results and then click **Next**.
If the uninstallation has failed, review the post-uninstall summary report and refer to the wizard log file for details.
The log file is located at
`%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>`.
You may have to repeat the uninstallation if the wizard indicates that the installation itself has failed.
If the logs indicate that the Symantec ApplicationHA plugin uninstallation has failed, you may have to manually unregister the plugin on the vCenter Server. Use the PluginMgmt.bat utility to register the plugin.
Refer to *Symantec™ ApplicationHA User's Guide* for details about the PluginMgmt.bat utility.
- 10 On the Finish panel click **Finish**.
- 11 Click **Yes** on the dialog box that prompts for a system reboot. The installer automatically reboots the system.
Click **No** if you wish to reboot the system later.
The uninstallation requires a reboot of the system. If you did not select the automatic reboot option, you must manually reboot the system.
This completes the Symantec ApplicationHA Console uninstallation.

Uninstalling ApplicationHA components for VMware SRM Server

Use the Symantec ApplicationHA Components for VMware SRM installer to uninstall the Symantec ApplicationHA Components for VMware. You must run the installer on the SRM Server from which you want to install the components. Consider the following points before you proceed:

- The installer uses the logged-on user account context for uninstallation. Verify that the logged-on user has local Administrator privileges on the system where you want to uninstall.
- A reboot is required post uninstallation. The installer can automatically reboot the systems after the uninstallation is complete. If you wish to reboot the systems later, clear the automatic reboot option on the wizard's Pre-uninstall Summary panel.
- For uninstallation on Windows Server 2008 systems, ensure that the Application Information service is running.
To start the service type the following on the command prompt:

```
net start appinfo
```

To remove the Symantec ApplicationHA Components for VMware SRM

- 1 On the SRM Server launch Windows Add or Remove Programs from the Windows start menu.

Click **Start > Settings > Control Panel** and then double-click **Add or Remove Programs**.

In case of Windows Server 2008, click **Start > Settings > Control Panel** and then double-click **Programs and Features**.
- 2 In the Add or Remove Programs window, select **Symantec ApplicationHA 6.0 Components for VMWare SRM** and then click **Remove**.

In case of Windows Server 2008, click **Uninstall**. This launches the Symantec ApplicationHA Components for VMware SRM installer.
- 3 Review the prerequisites on the Welcome panel and then click **Next**.
- 4 On the System Validation panel, the installer automatically selects the local host for uninstallation and begins verification. After the status shows as *Ready for uninstall*, click **Next**.

If the system does not meet the required criteria, the status is reflected as *Verification failed*. To view the cause of a validation failure, click the Information icon. Rectify the issue and then click **Re-verify** to perform the validation checks again. The wizard does not proceed unless the system passes the validation checks.

- 5 On the Pre-uninstall Summary panel, review the summary and then click **Next**.

Click **Save Report** if you wish to save the pre-uninstallation summary report for reference.

If you do not want the installer to reboot the systems after the uninstallation, clear the **Automatically reboot systems after installer completes the operation** check box.

You must manually reboot the system later.
- 6 Click **OK** on the dialog box that confirms about the system reboot. To change the reboot option click **Cancel**.
- 7 The Un-installation panel displays the uninstallation progress.

After the panel indicates that the uninstallation is complete, click **Next**.
- 8 On the Post-uninstall Summary panel, review the results and then click **Next**.

If the uninstallation has failed, review the post-uninstall summary report and refer to the wizard log file for details.

The log file is located at the following location:

On Windows Server 2003:

```
%AllUsersProfile%\ApplicationData\Veritas\VPI\log\

On Windows Server 2008 or 2008 R2



```
%AllUsersProfile%\Veritas\VPI\log\

You may have to repeat the uninstallation if the wizard indicates that the uninstallation has failed.


```


```
- 9 On the Finish panel click **Finish**.
- 10 Click **Yes** on the dialog box that prompts for a system reboot. The installer automatically reboots the system.

Click **No** if you wish to reboot the system later.

The uninstallation requires a reboot of the system. If you did not select the automatic reboot option, you must manually reboot the system.

This removes the Symantec ApplicationHA Components for VMware SRM from the SRM Server.

Troubleshooting Symantec ApplicationHA installation

This appendix includes the following topics:

- Symantec ApplicationHA logging
- Guest installation using the vSphere Client menu may fail with access rights error
- Restarting the vCenter Server or its service during the ApplicationHA guest components installation displays "Error" in vSphere Client tasks
- Reverting the virtual machine snapshot requires you to cancel the ApplicationHA guest components installation
- Non-supported operating system icon displayed for the selected virtual machine
- Symantec High Availability Console files become corrupt

Symantec ApplicationHA logging

This section describes how to troubleshoot common problems that may occur while installing Symantec ApplicationHA. The chapter lists the error messages and describes the associated problem. Recommended resolution is included, where applicable.

Troubleshooting issues require looking at the log files created by the various components.

ApplicationHA installer logging

Symantec ApplicationHA installer logs contain details about the installation tasks and the overall progress status. These logs are useful for resolving common installation related issues.

The installer creates the log directory as soon as you launch the wizard.

The log file is located at

```
%AllUsersProfile%\Veritas\VPI\log\<date_timestamp>\AppControl_Installer_A.txt.
```

Where, %AllUsersProfile% expands to C:\ProgramData.

Symantec High Availability Console logging

Use the hagetcf utility to collect the Symantec High Availability Console logs. This utility retrieves and writes detailed diagnostic information about the monitoring configuration. These details are useful for debugging configuration related issues.

After you install the Symantec High Availability Console the hagetcf utility is available in the following directory on the Console host:

```
<installdirectory>\ApplicationHA\bin
```

Here, <installdirectory> is the directory where you install the Console, typically, C:\Program Files\Veritas.

Perform the following steps to collect the Symantec High Availability Console logs:

- 1 On the Symantec High Availability Console host, navigate to the following directory from the command prompt:

```
<installdirectory>\ApplicationHA\bin
```

- 2 Run the hagetcf utility from the directory. Type the following command:

```
hagetcf -appserver
```

The hagetcf utility writes the output to %systemdrive%\hagetcf\mmyy_hhmm directory.

For example, C:\hagetcf\0819_2316.

The directory contains several folders and log files representing various components.

Agent logging

Symantec ApplicationHA agents generate log files that are appended by letters. Letter A indicates the first log file, B the second, C the third, and so on.

The agent log components are defined as follows:

- **Timestamp:** the date and time the message was generated.
- **Mnemonic:** the string ID that represents the product (for example, VCS).
- **Severity:** levels include CRITICAL, ERROR, WARNING, NOTICE, and INFO (most to least severe, respectively).
- **UMI:** a unique message ID.
- **Message Text:** the actual message generated by the agent.

The agent logs are located at `<%vcs_home%>log\agent_A.txt`.

Here, `<%vcs_home%>` is set during ApplicationHA guest component installation is typically, `C:\Program Files\Veritas\Cluster Server`.

The format of the agent log is as follows:

Timestamp (Year/MM/DD) | Mnemonic | Severity | UMI | Agent Type | Resource Name | Entry Point | Message Text

A typical agent log resembles:

```
2010/08/22 18:46:44 VCS ERROR V-16-10051-6010
GenericService:Service_ClipSrv_res:online:Failed to start the service 'ClipSrv'.
Error = 1058.
```

Symantec High Availability view logging

The Symantec High Availability view generates log files that are appended by letters. The log files are segregated based on operations and configuration settings, as follows:

- **Operations and wizard logging**
 ApplicationHA logs operations logs include the Symantec ApplicationHA Configuration Wizard logs and logs related to the various operations performed from the Symantec High Availability view.
 Operations logs are located at
`<%vcs_home%>log\AppControlOperations_A.log`.
 Here, `<%vcs_home%>` is set during ApplicationHA guest component installation is typically, `C:\Program Files\Veritas\Cluster Server`.
 The Symantec ApplicationHA Configuration Wizard also maintains in-memory logs that are available only during the time the wizard is running. These logs are maintained on a per session basis. The in-memory logs are purged after the wizard is closed. These logs are not stored in any file or directory.
- **Configuration settings logging**

Application monitoring configuration settings related changes are logged separately and are available at:

```
<%vcs_home%>log\AppControlSettings_A.log.
```

Here, <%vcs_home%> is set during ApplicationHA guest component installation is typically, C:\Program Files\Veritas\Cluster Server.

These settings are accessible from the Settings link on the Symantec High Availability view.

- Symantec High Availability view logging
The Symantec High Availability view also maintains in-memory logs of the operations performed from the view. These logs are available only until the time the logs window is open. To view the current logs, click the **View Logs** link available on the right hand side in the Symantec High Availability view. A window appears within the view. This window displays the details of the operations performed.

Guest installation using the vSphere Client menu may fail with access rights error

ApplicationHA guest installation performed using the vSphere Client menu may fail with the following error:

```
Failed to create directory on the virtual machine.  
You do not have access rights to this file.
```

This error occurs if you install the guest components on a virtual machine with UAC enabled.

Workaround:

Disable UAC and continue with the installation.

Alternatively, exit the wizard and launch it again using the Default Administrator account.

Restarting the vCenter Server or its service during the ApplicationHA guest components installation displays "Error" in vSphere Client tasks

If the vCenter Server or its service happen to fail or restart during the ApplicationHA guest components installation, the vSphere Client displays "Error"

Reverting the virtual machine snapshot requires you to cancel the ApplicationHA guest components installation

as the installation status. However, the guest components installation may continue on the virtual machines.

Workaround:

After the vCenter Server or its service restarts, click on each of the selected virtual machine and verify if the ApplicationHA health view appears in the vSphere Client.

Presence of ApplicationHA health view indicates successful installation of the guest components. However, if the ApplicationHA health view is not present, refer to the ApplicationHA logs for installation details.

The ApplicationHA logs are located on the virtual machine at the following location:

```
%AllUsersProfile%\ApplicationData\Veritas\VPI\log\<date_timestamp>\.
```

Reverting the virtual machine snapshot requires you to cancel the ApplicationHA guest components installation

If you revert the virtual machine snapshot during the ApplicationHA guest components installation, the vSphere Client continues to show a stale entry of the installation task and displays the error "There is one entry in Queue for the virtual machine", if you initiate the installation again.

Workaround:

Before initiating the installation again, run the following utility to cancel the installation task from the vSphere Client.

```
https://ApplicationHAConsole_IP:14152/ac/CancelGuestInstallation?
VmId=VirtualMachine_ID&VmUser=UserName&VmPassword=Password
```

Alternatively,

```
https://ApplicationHAConsole_IP:14152/ac/CancelGuestInstallation?
VmName=VirtualMachine_Name&VmUser=UserName&VmPassword=Password
```

Where,

The virtual machine user name and password must be the one specified during the guest installation.

Note: You can also use this utility if you plan to cancel the queued installation task or to cancel the installation tasks that held-up in the same state for a long time.

Non-supported operating system icon displayed for the selected virtual machine

Even if the virtual machine runs a supported operating system the System Selection page of the guest installation wizard launched using the vSphere Client menu displays a non-supported operating system icon.

This situation occurs if you run the ApplicationHA guest installation wizard from the vSphere Client menu immediately after,

- the virtual machine is powered on
- reverting the virtual machine snapshot

The wizard shows the non-supported operating system icon for the virtual machine due to the delay in retrieving the virtual machine operating system details.

Workaround:

Allow certain time lapse after you power on or revert the snapshot of a virtual machine and then proceed to install the guest components.

Symantec High Availability Console files become corrupt

If the Symantec High Availability Console files and registry becomes corrupt and the Console fails to respond, perform the following to restore and get the Symantec High Availability Console up and running.

These steps presume that you had backed up the following directories and registry from the Symantec High Availability Console host, after configuring application monitoring on the virtual machines:

- *<installdirectory>*\Veritas Shared
Here, *<installdirectory>* is the directory where you installed the Console, typically, C:\Program Files\Veritas.
- %AllUsersProfile%\Symantec\ApplicationHA\sec
%AllUsersProfile%\Symantec\ApplicationHA\conf
Here %AllUsersProfile% typically expands to C:\ProgramData.

- HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Veritas\VPI

Perform the following steps on the Symantec High Availability Console host:

- 1 Restore the veritas shared directory that you backed up to the following location:

<installdirectory>\

Here, *<installdirectory>* is the directory where you installed the Console, typically, C:\Program Files\Veritas.

- 2 From the Windows registry editor, restore the following VPI registry key that you had backed up earlier:

Perform the following:

- In the Windows Registry Editor, navigate to the following location:

HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Veritas

- Click **File > Import** and then specify the VPI registry key that you had backed up earlier and then click **Open**.

- After the import is successful, save and close the registry editor.

- 3 From Windows Add or Remove Programs, repair the Veritas Operations Manager (Host Component).

Refer to the VOM documentation for instructions.

- 4 From the Windows Add or Remove Programs, repair Symantec High Availability Console.

- 5 After the Console repair completes, stop the following services:

- Symantec ApplicationHA Authentication Service

- Symantec ApplicationHA Service

- Veritas Storage Foundation Messaging Service

- 6 Restore the sec and conf directories that you backed up earlier at the following location:

%AllUsersProfile%\Symantec\ApplicationHA\

%AllUsersProfile%\Symantec\ApplicationHA\

Here %AllUsersProfile% typically expands to C:\ProgramData.

- 7 Start the services that you stopped in step 5 earlier.

- 8** Exit the vSphere client, launch it again and then log on to the vCenter Server that manages the virtual machines where you have configured application monitoring.
- 9** In the vSphere client Inventory pane, click on a virtual machine where you have configured application monitoring, and then select the Symantec High Availability tab to view the status of the applications configured.

ApplicationHA tunable parameters

This appendix includes the following topics:

- ApplicationHA installation parameters

ApplicationHA installation parameters

This section provides the list of tunable parameters that you can customize while installing ApplicationHA, using the vCenter integrated menu.

These parameters are listed in the "appServerConfig.properties" file that is located on the Console host at the following location:

C:\ProgramData\Symantec\ApplicationHA\conf\appServerConfig.properties

Note: After you edit the parameter values, you must restart the Symantec ApplicationHA Service.

Table B-1 lists the parameters for which you can customize the default values.

Table B-1 Guest components tunable parameters

Parameter	Description
VIIMaxInstallerThreadCount	Determines the number of virtual machines on which the guest installer package is simultaneously copied. Default value= 4

Table B-1 Guest components tunable parameters *(continued)*

Parameter	Description
VIIPollingInterval	<p>Determines the time interval for polling the installation progress on the virtual machine.</p> <p>The default interval between two consecutive polling tasks is 15 minutes.</p>
VIIQueueTimeout	<p>Determines the time span for which a virtual machine is queued for installation.</p> <p>Default= 120 minutes.</p> <p>If the virtual machine is queued for installation for more than 120 mins a time out error occurs and the virtual machine is removed from the installation queue.</p>
VIICopyTimeout	<p>Determines the time span for copying the guest installer package to the virtual machine, from the Console host.</p> <p>Default= 45 mins</p> <p>If the time taken to copy the installer package exceeds 45 mins, a time out error occurs and the installation is aborted.</p>
VIIGuestInstallTimeout	<p>Determines the time taken to complete the guest installation.</p> <p>Default= 45 mins</p> <p>If the time taken for installation exceeds 45 mins, a time out error occurs and the installation is aborted.</p>

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