Symantec™ ApplicationHA Agent for Microsoft SharePoint Server 2010 Configuration Guide

Windows Server 2008 and 2008 R2 (x64)

5.1 Service Pack 2

✓Symantec™

Symantec™ ApplicationHA Agent for Microsoft SharePoint Server 2010 Configuration Guide

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Contents

Introducing the Symantec ApplicationHA agent for Microsoft SharePoint Server

This chapter includes the following topics:

- About the Symantec ApplicationHA agents

- About the Symantec ApplicationHA agent for Microsoft SharePoint Server 2010

- How Symantec ApplicationHA agent monitors Microsoft SharePoint Server

About the Symantec ApplicationHA agents

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

Symantec ApplicationHA agents are classified as follows:

- Infrastructure agents

  Infrastructure agents are packaged (bundled) with the base software and include agents for mount points, generic services, and processes. These agents are immediately available for use after you install Symantec ApplicationHA. For more details about the infrastructure agents, refer to the *Symantec™ ApplicationHA Generic Agents Guide*.

- Application agents

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

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

Refer to the Symantec Operations Readiness Tools (SORT) Web site for information on the latest agent pack availability.

https://sort.symantec.com

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

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

About the Symantec ApplicationHA agent for Microsoft SharePoint Server 2010

The Symantec ApplicationHA agent for Microsoft SharePoint Server manages SharePoint Server 2010 Web Applications, Service Applications, and its services, in a farm level deployment. The agent provides monitoring support in making the SharePoint Server 2010 applications and services highly available in a Symantec ApplicationHA environment.

Note: The agent does not support SharePoint Server standalone deployment. Also, in the supported server farm deployment, for high availability monitoring support of underlying Microsoft SQL Server databases you must install and configure the Symantec ApplicationHA agent for Microsoft SQL Server.

For details, refer to, *Symantec ApplicationHA Agent for Microsoft SQL Server 2008 and 2008 R2 Configuration Guide*.

Depending on the configuration, the agent performs the following operations:

■ Monitors and starts the configured SharePoint services

■ Monitors the configured Web Applications, brings them online, and takes them offline

■ Monitors the configured Service Applications, brings them online, and takes them offline

If any of the configured SharePoint component fails or is unavailable, the agent attempts to start the component on the system. If the components fails to start, the agent declares the resource as faulted.

Agent functions

The agent functions of Symantec ApplicationHA agent for Microsoft SharePoint Server include the following:

Online	Starts the configured Web Applications, Service Applications, or services.
Offline	Stops the configured Web Applications and Service Applications. The agent also stops monitoring the configured services on the system.
Monitor	Verifies the status of the configured Web Application, Service Application or service. If the components are running, the agent reports the resource as ONLINE. If any of the components are not running, the agent reports the resource as FAULTED.
Clean	Forcibly stops the configured Web Applications and Service Applications. The agent also stops monitoring the configured services on the system.

Agent state definitions

The state definitions of Symantec ApplicationHA agent for Microsoft SharePoint Server include the following:

ONLINE	Indicates that the configured Web Applications, Service Applications, or services are available.
OFFLINE	Indicates that the configured Web Applications and Service Applications are stopped on the system. It also indicates that the monitoring for the services is also stopped.
FAULTED	Indicates that the application or the service has stopped outside ApplicationHA control or the agent is unable to start the configured Web Applications, Service Applications, or its services.

UNKNOWN	Indicates that the agent is unable to determine the status of the configured SharePoint components.

Following are some of the instances when the agent fails to determine the status of the configured SharePoint components.

- An application or service fails to exist with the name corresponding to the AppName attribute value
- The user account entered as the FarmAdminAccount fails to have SharePoint admin privileges. |

Resource type definition

The resource type definition of Symantec ApplicationHA agent for Microsoft SharePoint Server is represented by the SharepointServer resource type:

The resource definition is as follows:

```
type SharePointServer (
static i18nstr ArgList[] = { AppType, AppName,
Description, AppPoolMon, FarmAdminAccount,
FarmAdminPassword, ServiceIDList }
str AppType
i18nstr AppName
i18nstr Description
str AppPoolMon = NONE
i18nstr FarmAdminAccount
str FarmAdminPassword
i18nstr ServiceIDList[]
)
```

Agent attribute definitions

The agent attributes define the details to uniquely identify the specific resource component that is to be managed.

Table 1-1 lists the attributes that are required for configuring a SharePoint Server 2010 instance

Table 1-1   Required attributes

Required Attributes	Type and Dimension	Definition
AppType	String-scalar	Defines whether the agent is configured to monitor a SharePoint Web Application, Service Application, or service. This attribute can take one of the following values: ■ WebApp ■ ServiceApp ■ SPSService If this attribute value is set to WebApp or ServiceApp, then you must specify a value for the AppName attribute. If this attribute value is set to SPSService, the AppName attribute value is ignored.
AppPoolMon	string-scalar	Defines the monitoring modes for the application pool associated with the Web site being monitored. Configure this attribute only if AppType attribute value is set to WebApp and IIS is configured to run in the Worker Process Isolation mode. The attribute can take one of the following values: ■ NONE: Indicates that the agent does not monitor the application pool associated with the Web site ■ DEFAULT: Indicates that the agent monitors the root application pool associated with the Web site. If this attribute is set, the agent starts, stops, and monitors the root application pool associated with the Web site. If the root application pool is stopped externally, the service group faults; the agent then attempts to start the root application pool. ■ ALL: Indicates that the agent starts all the application pools associated with the Web site, but monitors and stops the root application pool only. If any application pool is stopped externally, the service group faults; the agent then attempts to start the application pool. The default value is NONE.

Table 1-1   Required attributes *(continued)*

Required Attributes	Type and Dimension	Definition
ServiceIDList	string-vector	Defines the service IDs of the SharePoint services that are managed by the agent. This attribute is always local, that is, it is different for each system. This attribute can take the following values: ■ If AppType attribute value is set to WebApp, specify the service ID of the Microsoft SharePoint Foundation Web Application service. ■ If AppType attribute value is set to ServiceApp, specify the service ID of the service on which the Service Application depends. ■ If AppType attribute value is set to SPSService, specify the service IDs of the SharePoint services. **Note:** If you are configuring this attribute manually, use the `hadiscover` command or the SharePoint server `cmdlets` to retrieve the service IDs.

Table 1-2 lists the optional attributes for configuring a SharePoint Server 2010 instance

Table 1-2   Optional attributes

Optional Attribute	Type and Dimension	Definition
AppName	string-scalar	The name of the SharePoint Web Application or Service Application that is managed by the agent. The value of this attribute depends on the value of the AppType attribute. This attribute can take the following values: ■ If AppType attribute value is set as WebApp, specify the Web Application name. ■ If AppType attribute value is set as ServiceApp, specify the application pool ID for the SharePoint Service Application. **Note:** This attribute is ignored if AppType attribute value is set as SPSService.

Table 1-2   Optional attributes *(continued)*

Optional Attribute	Type and Dimension	Definition
Description	string-scalar	The display name for the configured web application, service application and its services. The value defined is displayed in the health view.
FarmAdminAccount	string-scalar	A user account that has the SharePoint Server Farm Admin privileges. User name can be of the form username@domain.com, domain\username, or domain.com\username. The agent uses the Farm Admin user account context to manage the services specified in the ServiceIDList attribute value.
FarmAdminPassword	string-scalar	The password of the user specified in the FarmAdminAccount attribute value. The password is stored in the configuration in an encrypted form. **Note:** If you are configuring this attribute manually, use the `VCSencrypt` command to encrypt the password.

How Symantec ApplicationHA agent monitors Microsoft SharePoint Server

The high availability (HA) solution for SharePoint Server 2010 is a combination of monitoring and recovery support for SharePoint 2010 applications. The Symantec ApplicationHA agent manages the SharePoint 2010 Web Applications, Service Applications, and services configured on the virtual machine. Depending on the configuration, the agent monitors, starts, and stops the SharePoint components on the virtual machine. The agent detects an application failure if the configured applications become unavailable or if any of the application component faults. The agent then tries to restart the application or bring the failed component online, for a configurable number of attempts. If the applications do not start, the agent considers it as an application failure and reports the status to VMware HA.

Depending on the configuration, VMware HA can then restart the virtual machine. After the computer restarts, the agent starts the configured Web sites and the associated application pools and brings the configured resources online on the system.

Configuring application monitoring with Symantec ApplicationHA

This chapter includes the following topics:

About configuring application monitoring with Symantec ApplicationHA

This chapter describes the steps to configure application monitoring for Microsoft SharePoint Server 2010 Web Applications, Service Applications, and services with Symantec ApplicationHA in a VMware virtualization environment.

Consider the following before you proceed:

- You can configure application monitoring on a virtual machine using the Symantec ApplicationHA Configuration Wizard. The wizard is launched when you click **Configure Application Monitoring** on the ApplicationHA tab in VMware vSphere Client.

- Apart from the Symantec ApplicationHA Configuration Wizard, you can also configure application monitoring using the Veritas Cluster Server (VCS) commands. For more information, refer to the following Technote:

http://www.symantec.com/docs/TECH159846

- Symantec recommends that you first configure application monitoring using the wizard before using VCS commands to add additional components or modify the existing configuration.

  Apart from the application monitoring configuration, the wizard also sets up the other components required for Symantec ApplicationHA to successfully monitor the applications.

- You can use the wizard to configure monitoring for only one application per virtual machine.

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

- After configuring SharePoint 2010 Web Application, Service Applications, and services for monitoring, if you create another Web Application, Service Application or service, then these new components are not monitored as part of the existing configuration.

  In this case, you can either use the VCS commands to add the components to the configuration or unconfigure the existing configuration and then run the wizard again to configure the required components.

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

- If a configured application fails, Symantec ApplicationHA attempts to start the application on the computer. If the application does not start, Symantec ApplicationHA communicates with VMware HA to take corrective action. Symantec ApplicationHA then stops the other configured applications in a predefined order. This avoids the other applications from getting corrupted due to a computer restart.

  A single failed application can bring down other healthy applications running on the virtual machine. You must take this behavior into consideration while configuring application monitoring on a virtual machine.

Before configuring application monitoring

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

- Verify that you have installed Symantec ApplicationHA (console and guest components) in your VMware environment.
  For information about installing Symantec ApplicationHA, refer to the *Symantec™ ApplicationHA Installation and Upgrade Guide*.

- Verify that VMware Tools is installed on the virtual machine.
  Install the version that is similar to or later than that available with VMware ESX 4.1.

- Verify that you have installed VMware vSphere Client. The vSphere Client is used to configure and control application monitoring.
  You can also perform the application monitoring operations directly from a browser window using the following URL:

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

- Verify that all applications and services hosted on the virtual machine are running.

- If you have configured a firewall, ensure that your firewall settings allow access to ports used by Symantec ApplicationHA installer, wizard, and services.
  For information about the ports that are used, refer to the *Symantec™ ApplicationHA Installation and Upgrade Guide*.

- Ensure that creation of any new Web Applications, Service Applications, or services is not under progress.

- If you are configuring application monitoring in a disaster recovery environment, ensure that you are using the disaster recovery solution VMware vCenter Site Recovery Manager (SRM). For more information, refer to the *Symantec™ ApplicationHA User's Guide*.

Configuring application monitoring for SharePoint Server 2010

Perform the following steps to configure the monitoring for SharePoint Server 2010 on a virtual machine using the Symantec ApplicationHA Configuration Wizard.

To configure application monitoring for SharePoint Server 2010

1   Launch the vSphere Client and connect to the vCenter Server that manages the virtual machine.

2   From the vSphere Server's Inventory view in the left pane, select the virtual machine where you want to configure application monitoring, and then in the right pane select the **ApplicationHA** tab.

3   Skip this step if you have already configured the single sign-on during the guest installation.

    On theApplicationHA tab, specify the credentials of a user account that has administrative privileges on the virtual machine and then click **Configure**. The ApplicationHA Console sets up a permanent authentication for the user account.

    For more information about single sign-on, refer to the *Symantec™ ApplicationHA User's Guide*.

    After the authentication is successful, the ApplicationHA tab refreshes and displays the application health view.

4   Click **Configure Application Monitoring** to launch the Symantec ApplicationHA Configuration Wizard.

5   Review the information on the Welcome panel and then click **Next**.

6   On the Application Selection panel, click **Microsoft SharePoint Server 2010** in the Supported Applications list.

    You can use the Search box to find the application and then click **Next**.

7   On the Farm Admin User Details panel, enter the farm admin user name and password.

8   On the SharePoint Applications and Services panel, review the list of web applications, service applications, and services running on the virtual machine. Also, review the list of servers configured in the farm and then click **Configure**.

Note: Applications and services running on the virtual machine are configured for monitoring. Run the wizard on all the SharePoint servers to configure monitoring for the entire SharePoint server farm.

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9   The wizard performs the application monitoring configuration tasks, creates the required resources, and enables the application heartbeat that communicates with VMware HA.

The panel displays the status of each task. After all the tasks are complete, click **Next**.

If the configuration tasks fail, click **View Logs** to check the details of the failure. Rectify the cause of the failure and run the wizard again to configure the application monitoring.

10 On the Finish panel, click **Finish** to complete the wizard.

This completes the application monitoring configuration. You can view the application status in the ApplicationHA tab.

The view displays the application as configured and running on the virtual machine. The Description box displays the details of the configured components.

If the application status shows as not running, click **Start Application** to start the configured components on the computer.

Administering application monitoring using the ApplicationHA tab

Note: You can administer application monitoring in two ways. One, using the ApplicationHA tab as described below and two, using the Symantec ApplicationHA Dashboard. Using the ApplicationHA dashboard, you can administer application monitoring in a graphical user interface (GUI). For information about the latter, refer to the *Symantec™ ApplicationHA User's Guide*.

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

Use the ApplicationHA tab to perform the following tasks:

■ configure and unconfigure application monitoring

■ start and stop configured applications

■ enable and disable application heartbeat

■ enter and exit maintenance mode

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

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

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

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

To configure or unconfigure application monitoring

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

You can use the following buttons:

■ Click **Configure Application Monitoring** to launch the Symantec ApplicationHA Configuration Wizard. Use the wizard to configure application monitoring.

■ Click **Unconfigure Application Monitoring** to delete the application monitoring configuration from the virtual machine.
Symantec ApplicationHA removes all the configured resources for the application and its services.
Note that this does not uninstall Symantec ApplicationHA from the virtual machine. This only removes the configuration. The unconfigure option removes all the application monitoring configuration resources from the virtual machine. To monitor the application, you have to configure them again.

To view the status of configured applications

Note: To view applications at a component level and their dependencies, see the Component Dependency tab under the ApplicationHA tab. For more information, refer to the *Symantec™ ApplicationHA User's Guide*.

Under the ApplicationHA tab, the Component List tab displays the status of the configured Web Applications, Service Applications and services on the virtual machine.

For example, if you have configured monitoring for SharePoint Server 2010, the Component List tab displays the following information:

```
The SharePoint SPSService component [component] is started.

The SharePoint ServiceApp component [component] is started.

The SharePoint WebApp component [component] is started.
```

Where, *component* is the name of the SharePoint Server component that is configured on the virtual machine.

The Component List tab also displays the state of the configured application and its components. The following states are displayed:

online	Indicates that the application and its services are running on the virtual machine.
offline	Indicates that the application and its associated services are not running on the virtual machine.
partial	Indicates that either the services are being started on the virtual machine or Symantec ApplicationHA was unable to start one or more of the configured application services.
faulted	Indicates that the configured services or components have unexpectedly stopped running.

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

Click **Settings** to change ApplicationHA settings for the configured application and the virtual machine.

To start or stop applications

Use the following options on the ApplicationHA tab to control the status of the configured application and the associated components:

■ Click **Start Application** to start the configured Web Applications, Service Applications and services.
Symantec ApplicationHA attempts to start the configured applications and services in the required order.

■ Click **Stop Application** to stop the Web Applications, Service Applications and services that are configured on the virtual system.
Symantec ApplicationHA begins to stop the configured sites gracefully.

To enable or disable application heartbeat

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

ApplicationHA tab lets you control the application heartbeat on the virtual machines.

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

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

■ Click **Disable Application Heartbeat** to disable the heartbeat communication between the configured applications running on the virtual machine and VMware HA.
Disabling the application heartbeat does not instruct VMware HA to restart the virtual machine. This option disables the application monitoring feature in the VMware virtual machine monitoring settings.

To suspend or resume application monitoring

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

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

The ApplicationHA tab provides the following options:

■ Click **Enter Maintenance Mode** to suspend the application monitoring for the applications that are configured on the virtual machine. During the time the monitoring is suspended, Symantec ApplicationHA does not monitor the state of the application and its dependent components. The ApplicationHA tab does not display the current status of the application. If there is any failure in the application or its components, ApplicationHA takes no action.

■ Click **Exit Maintenance Mode** to resume the application monitoring for the applications configured on the virtual machine. You may have to click the **Refresh** link in the ApplicationHA tab to see the current status of the application.
When application monitoring is restarted from a suspended state, ApplicationHA does not enable the application heartbeat. Click **Enable Application Heartbeat** to enable it.
If you have made changes that include database addition or change in the underlying storage mount point that was being monitored, then those changes may not reflect in the application monitoring configuration. In such cases, you may have to unconfigure and reconfigure the application monitoring.