

# Symantec™ ApplicationHA Agent for Microsoft SQL Server 2008 and 2008 R2 Configuration Guide

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

5.1 Service Pack 1

# Symantec™ ApplicationHA Agent for Microsoft SQL Server 2008 Configuration Guide

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# Introducing the Symantec ApplicationHA agents for Microsoft SQL Server 2008

This chapter includes the following topics:

- [“About the Symantec ApplicationHA agents”](#) on page 10
- [“About the Symantec ApplicationHA agents for SQL Server 2008”](#) on page 11
- [“About the SQL Server 2008 Database Engine agent”](#) on page 11
- [“About the SQL Server 2008 FILESTREAM agent”](#) on page 16
- [“How Symantec ApplicationHA agents monitor SQL Server 2008”](#) on page 17

## 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 resources configured for the applications and report state changes.

Symantec ApplicationHA agents are classified as follows:

- **Infrastructure agents**

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

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

- **Application agents**

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

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

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

<http://vos.symantec.com>

The following sections provide details about the Microsoft SQL Server 2008 application agent.

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

## About the Symantec ApplicationHA agents for SQL Server 2008

The Symantec ApplicationHA agents for Microsoft SQL Server 2008 provide monitoring support for the following SQL Server versions:

- Microsoft SQL Server 2008
- Microsoft SQL Server 2008 R2

The agents monitor the SQL Server databases and the associated services on the virtual machine.

The SQL Server 2008 agents include the following:

- **SQL Server 2008 Database Engine agent**  
Provides monitoring for SQL Server Database Engine service. The agent monitors the status of the service and if the service is not running, the agent declares the service resource as OFFLINE.  
See [“About the SQL Server 2008 Database Engine agent”](#) on page 11.
- **SQL Server 2008 FILESTREAM agent**  
Provides monitoring for SQL Server FILESTREAM component. The agent monitors the Windows FILESTREAM configuration settings for the SQL Server instance.  
See [“About the SQL Server 2008 FILESTREAM agent”](#) on page 16.

## About the SQL Server 2008 Database Engine agent

The Symantec ApplicationHA SQL Server 2008 Database Engine agent monitors the Database Engine service. The agent brings the service online, monitors the status, and takes it offline. If the service is not running, the agent declares the state as OFFLINE.

If detail monitoring is configured, the agent checks the health of critical SQL databases or executes a monitoring script. If detail monitoring is successful, the agent declares the application as available.

This agent is represented by the SQLServer2008 resource type.

## SQL Server 2008 Database Engine agent functions

Online	Brings the SQL Server 2008 service online.
Offline	Takes the SQL Server 2008 service offline.
Monitor	Queries the Service Control Manager (SCM) for the status of SQL Server 2008 services. Also, if detail monitoring is configured, the agent performs a database health check depending on the configuration.
Clean	Forcibly stops the SQL Server service.

## SQL Server 2008 Database Engine agent resource type definition

```
type SQLServer2008 (  
    static i18nstr ArgList[] = { Instance,  
        "LanmanResName:VirtualName", SQLOnlineTimeout,  
        SQLOfflineTimeout, DetailMonitorInterval,  
        SQLDetailMonitorTimeout, Username, Domain, Password, DBList,  
        SQLFile, FaultOnDMFailure, "LanmanResName:IPResName",  
        SQLClusterAccount }  
    str Instance  
    str LanmanResName  
    int SQLOnlineTimeout = 90  
    int SQLOfflineTimeout = 90  
    int DetailMonitorInterval  
    int SQLDetailMonitorTimeout = 30  
    i18nstr Username  
    i18nstr Domain  
    str Password  
    i18nstr DBList[]  
    i18nstr SQLFile  
    boolean FaultOnDMFailure = 1  
    str SQLClusterAccount  
)
```

## SQL Server 2008 Database Engine agent attributes

**Table 1-1** SQL Server 2008 Database Engine required attributes

Required attributes	Description
Instance	Name of the SQL Server instance to monitor. If the attribute is blank the agent monitors the default instance (MSSQLSERVER). Type and dimension: string-scalar
LanmanResName	This attribute is not applicable for Symantec ApplicationHA.
SQLOnlineTimeout	Number of seconds that can elapse before the agent online function aborts. Default = 90 Type and dimension: integer-scalar
SQLOfflineTimeout	Number of seconds that can elapse before the agent offline function aborts. Default = 90 Type and dimension: integer-scalar

**Table 1-2** SQL Server 2008 Database Engine optional attributes

Optional attributes	Description
DetailMonitorInterval	Defines whether the agent performs detail monitoring of SQL Server. The default value 0 means that the agent does not monitor SQL Server in detail. A non-zero value indicates the number of online monitor cycles that the agent must wait before performing detail monitoring. Symantec recommends that you set this value to between 1 and 12. <b>Note:</b> If this attribute is set to a non-zero value, then the following attributes must be assigned appropriate values: For script-based monitoring: SQLFile, Username, Password, Domain, and SQLDetailMonitorTimeOut For databases list based monitoring: DBList Type and dimension: integer-scalar

**Table 1-2** SQL Server 2008 Database Engine optional attributes

Optional attributes	Description
FaultOnDMFailure	<p>Defines whether the agent faults the SQL Server resource if the detail monitoring fails.</p> <p>If the value is set to True, the agent faults the configured SQL Server resource if detail monitoring fails.</p> <p>If set to False, the agent does not fault the SQL Server resource if detail monitoring fails.</p> <p><b>Note:</b> The value set gets operational only after the SQL Server resource under consideration comes online.</p> <p>Default = True</p> <p>Type and dimension: boolean</p>
SQLDetailMonitor Timeout	<p>Number of seconds that can elapse before script based detail monitor routine aborts.</p> <p>Default = 30</p> <p>Type and dimension: integer-scalar</p>
Username	<p>The user account in whose context the script-based detail monitoring is performed. The agent uses this account context to run the SQL script for detail monitoring.</p> <p>This attribute must not be null if DetailMonitorInterval attribute is set to a non-zero value and script-based detail monitoring is configured.</p> <p><b>Note:</b> This attribute can take localized values.</p> <p>Type and dimension: string-scalar</p>
Domain	<p>Domain of the user account specified in the Username attribute.</p> <p><b>Note:</b> This attribute can take localized values.</p> <p>Type and dimension: string-scalar</p>
Password	<p>Password for the user account specified in the Username attribute.</p> <p>Type and dimension: string-scalar</p>

**Table 1-2** SQL Server 2008 Database Engine optional attributes

Optional attributes	Description
SQLFile	<p>The location of the SQL file executed during a monitor cycle. This attribute must not be null if script-based detail monitoring is configured and the DetailMonitorInterval attribute is set to a non-zero value.</p> <p>This attribute is related only to script-based Detail Monitoring. This attribute can be null if DBList based detail monitoring is configured.</p> <p>Note that if both script-based (SQLFile attribute) and databases list based (DBList attribute) detail monitoring are configured, then the DBList attribute takes precedence. The agent performs databases list based (DBList attribute) detail monitoring.</p> <p><b>Note:</b> This attribute can take localized values.</p> <p>Type and dimension: string-scalar</p>
DBList	<p>List of databases for which the agent will perform detail monitoring.</p> <p>Note that if both script-based (SQLFile attribute) and databases list based (DBList attribute) detail monitoring are configured, then the DBList attribute takes precedence. The agent performs databases list based (DBList attribute) detail monitoring.</p> <p><b>Note:</b> This attribute can take localized values.</p> <p>Type and dimension: string-vector</p>
SQLClusterAccount	<p>This attribute is not applicable for Symantec ApplicationHA.</p>

## About the SQL Server 2008 FILESTREAM agent

The Symantec ApplicationHA agent for SQL Server 2008 FILESTREAM enables FILESTREAM for the specified SQL Server instance, monitors its status, and disables it.

FILESTREAM in SQL Server enables SQL Server-based applications to store unstructured data, such as documents and images, on the file system.

This agent is represented by the FILESTREEM resource type.

## SQL Server 2008 FILESTREAM agent functions

Online	Enables FILESTREAM on the system.
Offline	Disables FILESTREAM on the system.
Monitor	Monitors FILESTREAM status on the system. If the agent is unable to query the status of FILESTREAM or if FILESTREAM is disabled on the system, the FILESTREAM resource in the service group faults.
Clean	Forcibly stops the configured FILESTREAM services.

## SQL Server 2008 FILESTREAM agent resource type definition

```
type SQLFilestream (  
  static i18nstr ArgList[] = { InstanceName }  
  i18nstr InstanceName  
)
```

## SQL Server 2008 FILESTREAM agent attributes

**Table 1-3** SQL Server 2008 FILESTREAM required attribute

Required attribute	Description
InstanceName	Name of the SQL Server instance to which the FILESTREAM is bound. If the attribute is blank the agent monitors the default instance (MSSQLSERVER). Type and dimension: string-scalar

## How Symantec ApplicationHA agents monitor SQL Server 2008

The SQL Server 2008 agents monitor the configured resources, determine the status of these resources, bring them online, and take them offline. The agents detect an application failure if the configured SQL Server instance or associated services become unavailable. The agents try to start the application services for a configurable number of attempts. If the application services fail to start, the agents consider this as an application failure and report the status to VMware HA. Depending on the configuration, VMware HA can then restart the virtual machine. After the machine restarts, the agents start the application services and bring the configured resources online on the system.



# Configuring application monitoring with Symantec ApplicationHA

This chapter includes the following topics:

- [“About configuring application monitoring with Symantec ApplicationHA”](#) on page 20
- [“Before configuring application monitoring for SQL Server 2008”](#) on page 21
- [“Configuring application monitoring for SQL Server 2008”](#) on page 22
- [“Administering application monitoring from the ApplicationHA view”](#) on page 27

## About configuring application monitoring with Symantec ApplicationHA

This chapter describes the steps to configure application monitoring for Microsoft SQL Server 2008 or Microsoft SQL Server 2008 R2 with Symantec ApplicationHA in a VMware virtualization environment.

Consider the following before you proceed:

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

---

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

---

## Before configuring application monitoring for SQL Server 2008

Note the following prerequisites before configuring application monitoring for SQL Server 2008 on a virtual machine:

- Verify that you have installed Symantec ApplicationHA (Console and guest components) in your VMware environment.  
Refer to the *Symantec ApplicationHA Installation and Configuration Guide* for instructions.
- Verify that VMware Tools is installed on the virtual machine. Install the version that is the similar to or later than that available with VMware ESX 4.1.
- 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 you have installed SQL Server and the associated components (FILESTREAM, SQL Server Agent, Analysis Service) that you wish to monitor on the virtual machine.
- If you have configured a firewall, ensure that your firewall settings allow access to ports used by Symantec ApplicationHA installer, wizards, and services.  
Refer to the *Symantec ApplicationHA Installation and Configuration Guide* for a list of ports and services used.

## Configuring application monitoring for SQL Server 2008

Perform the following steps to configure monitoring for SQL Server 2008 or SQL Server 2008 R2 on a virtual machine.

---

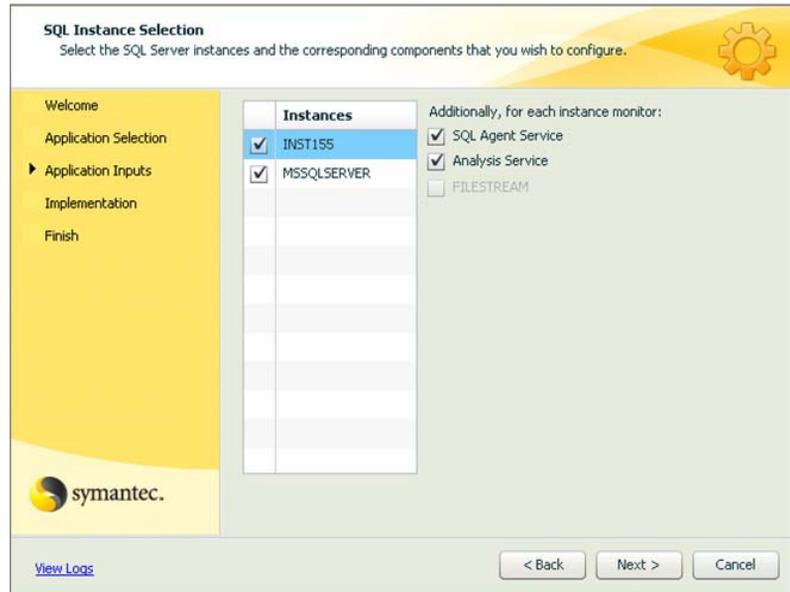
**Note:** Symantec ApplicationHA does not support application monitoring for SQL Server 2008 and SQL Server 2008 R2 on the same virtual machine simultaneously.

---

### To configure application monitoring for SQL Server 2008 or 2008 R2

- 1 Launch the vSphere Client and connect to the vCenter Server that manages the virtual machine.
- 2 From the vSphere Client's Inventory view in the left pane, select the virtual machine where you want to configure application monitoring for SQL Server and then in the right pane, select the **ApplicationHA** tab.
- 3 Skip this step if you have already configured the single sign-on for the virtual machine.  
In the User Name and Password field, specify the credentials of a user that has administrative privileges on the virtual machine and then click **Configure**.  
The ApplicationHA Console uses the specified user account to set up a permanent authentication for the virtual machine.  
After the authentication is successful, the ApplicationHA tab refreshes and displays the application health view.  
Refer to the Symantec ApplicationHA Installation and Configuration Guide for more information on single sign-on.
- 4 Click **Configure Application Monitoring** to launch the Symantec ApplicationHA Configuration Wizard.
- 5 Review the information on the Welcome panel and then click **Next**.
- 6 On the Application Selection page, click **Microsoft SQL Server 2008** in the Supported Applications list and then click **Next**.  
Select this option even if you wish to configure Microsoft SQL Server 2008 R2.

- 7 On the SQL Instance Selection panel, choose the SQL Server instances and the associated components that you wish to monitor and then click **Next**.



Instances	Click to select the SQL Server instances to monitor.
SQL Agent Service	Click <b>SQL Agent Service</b> to configure monitoring for SQL Server 2008 Agent service for the selected instance. You must select the SQL Agent service for each selected SQL Server instance separately.
Analysis Service	Click <b>Analysis Service</b> to configure monitoring for SQL Server 2008 Analysis service for the selected instance. You must select the Analysis service for each selected SQL Server instance separately.
FILESTREAM	The FILESTREAM check box is not selectable. If FILESTREAM is enabled on the machine, this option appears checked by default.

- 8 The wizard performs the application monitoring configuration tasks. The wizard creates the required resources and enables the application heartbeat that communicates with VMware HA. The panel displays the status of each task. After all the tasks are complete, click **Next**.

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

- 9 On the Finish panel, click **Finish** to complete the wizard.  
This completes the application monitoring configuration. You can view the application status in the ApplicationHA tab.  
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 application on the machine.

## Configuring detail monitoring for SQL Server 2008

You can configure the Symantec ApplicationHA SQL agents to perform detail monitoring of the configured SQL instances by defining the DetailMonitorInterval, SQLFile and DBList attributes from the command line. Refer to the SQL Server agent attributes for more details.

See [“SQL Server 2008 Database Engine agent attributes”](#) on page 13.

---

**Note:** This procedure is optional. It is not essential for the functioning of application monitoring for the SQL Server instances.

---

Note the following before you proceed:

- If you wish to configure detail monitoring, you must have a user account that has the permissions to log on to the respective SQL instance.
- If you wish to use a script for detail monitoring, for example, to create a table and write data to it, note the location(s) of the script to use.  
A sample script is supplied in the following directory:  
`%vcs_home%\bin\SQLServer2008\sample_script.sql`  
Here, %vcs\_home% typically expands to C:\Program Files\Veritas\cluster server.  
The same script can be used to monitor SQL Server 2008 and SQL Server 2008 R2.
- If you configure the DetailMonitor interval, then you must specify a value for the SQLFile or the DBList attribute.  
If you set both the SQLFile and DBList attributes for detail monitoring, the DBList attribute takes precedence.  
If you are specifying a script for detail monitoring, ensure that the script is accessible from the virtual machine.

### To configure detail monitoring for SQL

- 1 From the ApplicationHA tab in the vSphere Client, click **Stop Application**. This stops the configured SQL instances on the virtual machine. This is required for the attribute changes to take effect.
- 2 On the virtual machine where you have configured the SQL instances, type the following on the command prompt and then press **Enter**:  

```
haconf -makerw
```

This command sets the configuration mode to read/write.
- 3 To get the SQL Server agent resource name, type the following on the command prompt and then press **Enter**:  

```
hares -state
```

The output of this command displays the resources configured on the virtual machine.  
The SQL Server resource name is of the format `SQLServer2008SQLServer2008_<SQLinstancename>`.  
Make a note of the SQL resource name. This is required in the subsequent steps.
- 4 To set the `DetailMonitorInterval` attribute of the SQL Server resource, type the following on the command prompt and then press **Enter**:  

```
hares -modify <resourcename> DetailMonitorInterval 5
```

Here, `<resourcename>` is the name of the SQL Server resource.  
A non-zero value for the `DetailMonitorInterval` attribute enables detail monitoring. In this case, it indicates that the agent waits for 5 monitor cycles before performing the detail monitoring.  
Symantec recommends that you set this value to between 1 and 12.
- 5 To set up script-based detail monitoring, modify the `SQLFile` attribute. Type the following on the command prompt and then press **Enter**:  

```
hares -modify <resourcename> SQLFile  
"<scriptfilepath>"
```

Here, `<scriptfilepath>` is the full path of the script that you wish the agent to run as part of the detail monitoring. Enclose the path of the script in doublequotes.
- 6 To set up detail monitoring for specific databases, set the `DBList` attribute. Type the following on the command prompt and then press **Enter**:  

```
hares -modify <resourcename> DBList  
<database1><database2> ...
```

Here, `<database1>` and `<database2>` are the names of the databases for which you wish to configure detail monitoring.

In this mode the agent monitors the health by connecting to the databases specified.

- 7 To set the Username attribute, type the following on the command prompt and then press **Enter**:

```
hares -modify <resourcename> Username <username>
```

Here, username is the user account that has permissions to log on to the SQL Server.

- 8 You must now encrypt the password for the user that you specified in the earlier step.

Perform the following steps to encrypt the password:

- Type the following on the command prompt and press **Enter**:

```
vcseencrypt -agent
```

- Type the password when prompted.
- Type the same password again when prompted.
- The output then displays some characters. These represent the password in an encrypted form.
- Copy the encrypted password. This is required in the next step. The password is encrypted using the VCSEncrypt utility. Refer to the *Veritas Cluster Server 5.1 SP1 Administrator's Guide* for more details.

- 9 To set the Password attribute, type the following on the command prompt and then press **Enter**:

```
hares -modify <resourcename> Password <password>
```

Here, <password> is the encrypted password that you created in the earlier step.

- 10 To set the Domain attribute, type the following on the command prompt and then press **Enter**:

```
hares -modify <resourcename> Domain <domain>
```

Here, <domain> is the domain to which the specified user belongs.

- 11 Use the hares command to modify other SQL Server agent attributes, as desired.

- 12 Save and close the configuration. Type the following on the command prompt and press **Enter**:

```
haconf -dump -makero
```

This command also sets the configuration mode to read only.

- 13 From the ApplicationHA tab in the vSphere Client, click **Start Application**. The specified attributes take effect and Symantec ApplicationHA monitors the SQL Server instances using the configured parameters.

## Administering application monitoring from the ApplicationHA view

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

Use the ApplicationHA view to perform the following tasks:

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

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

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

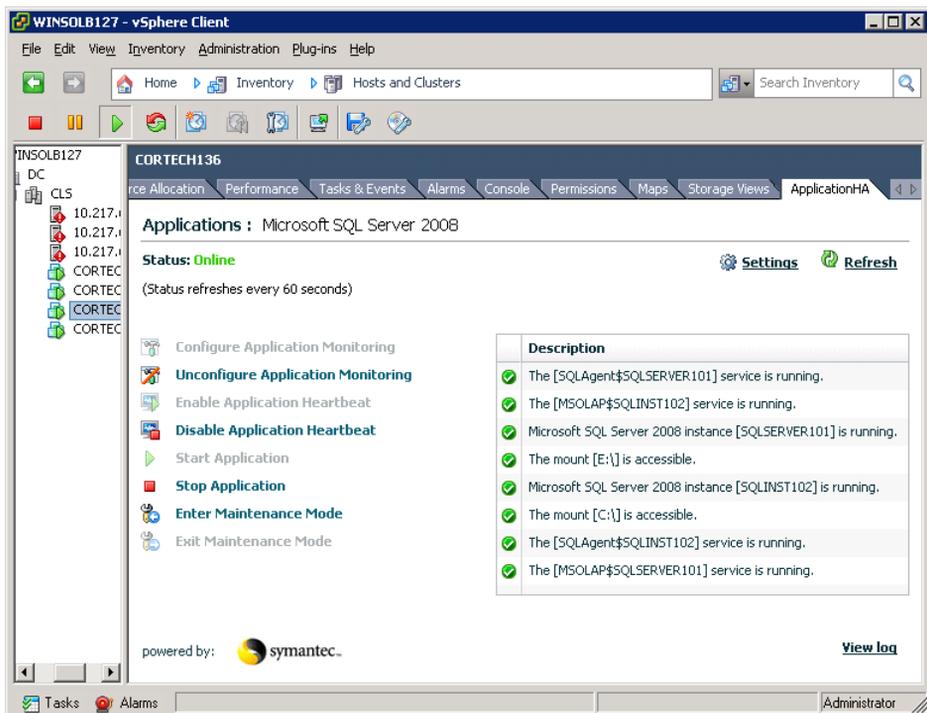
---

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

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

---

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



## To configure or unconfigure application monitoring

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

- Click **Configure Application Monitoring** to launch the Symantec ApplicationHA Configuration Wizard. Use the wizard to configure application monitoring.
- Click **Unconfigure Application Monitoring** to delete the application monitoring configuration from the virtual machine. Symantec ApplicationHA removes all the configured resources for the application and its services. Note that this does not uninstall Symantec ApplicationHA from the virtual machine. This only removes the configuration. The unconfigure option removes all the application monitoring configuration resources from the

virtual machine. To monitor the application, you have to configure them again.

## To view the status of configured applications

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

**Applications :** Microsoft SQL Server 2008

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

(autorefresh frequency- 60 seconds)

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

Description
 FILESTREAM for [FINANCE_APPS] is enabled.
 The mount [F:] is accessible.
 The [MSSQLServerOLAPService] service is running.
 The mount [E:] is accessible.
 The mount [C:] is accessible.
 The [SQLSERVERAGENT] service is running.
 Microsoft SQL Server 2008 instance [MSSQLSERVER] is running.
 The [SQLAgent\$FINANCE_APPS] service is running.
 The [MSOLAP\$FINANCE_APPS] service is running.
 Microsoft SQL Server 2008 instance [FINANCE_APPS] is running.

powered by:  [View log](#)

For example, if you have configured monitoring for SQL Server 2008, the Description box displays the following information:

```
The [SQLAgent$instanceName] service is running.
The [MSOLAP$instanceName] service is running.
Microsoft SQL Server 2008 instance [instanceName] is running.
The mount [mountpoint] is accessible.
FILESTREAM [instanceName] for is enabled.
```

Here instanceName is the name of the SQL Server 2008 instance that is configured.

The Status field 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 applications and its associated services. The status is refreshed every 60 seconds by default.

## To start or stop applications

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

The ApplicationHA view provides the following options:

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

## To enable or disable application heartbeat

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

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

- Click **Enable Application Heartbeat** to enable the heartbeat communication between the configured applications running on the virtual machine and VMware HA.  
The application heartbeat is enabled by default when an application is configured for monitoring.
- Click **Disable Application Heartbeat** to disable the heartbeat communication between the configured applications running on the virtual machine and VMware HA.  
Disabling the application heartbeat does not instruct VMware HA to restart the virtual machine. This option disables the application monitoring feature in the VMware virtual machine monitoring settings.

## To suspend or resume application monitoring

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

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

The ApplicationHA view provides the following options:

- Click **Enter Maintenance Mode** to suspend the application monitoring for the applications that are configured on the virtual machine. During the time the monitoring is suspended, Symantec ApplicationHA does not monitor

the state of the application and its dependent components. The ApplicationHA view does not display the current status of the application. If there is any failure in the application or its components, ApplicationHA takes no action.

- Click **Exit Maintenance Mode** to resume the application monitoring for the applications configured on the virtual machine. You may have to click the **Refresh** link in the ApplicationHA view to see the current status of the application.

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

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