

vSphere App HA User's Guide

VMware vSphere App HA 1.1

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About VMware vSphere App HA User's Guide

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VMware[®] vSphere App HA is a plug-in for the vSphere Web Client. The guide describes the tasks that you can perform using vSphere App HA.

Intended Audience

This information is intended for anyone using vSphere App HA to define policies for applications that are running in the virtual environment.

vSphere App HA Overview

vSphere App HA is a plug-in to the vSphere Web Client. vSphere App HA allows you to define high availability for the applications that are running on your virtual machines in your environment.

This chapter includes the following topics:

- [“vSphere App HA Features and Benefits,”](#) on page 7
- [“Architectural Overview of vSphere App HA,”](#) on page 8
- [“Services Supported by vSphere App HA,”](#) on page 8

vSphere App HA Features and Benefits

vSphere App HA lets you define high availability for the applications that are running on the virtual machines in your environment, using vSphere Web Client.

vSphere App HA performs the following functions:

- Displays location and availability status of applications.
- Performs user-defined remediation if a service is unavailable or unstable. Remediation actions include restart service and reset virtual machine.
- Triggers alerts and notifications when services become unavailable or unstable.
- Enables a remediation action to be suspended while maintenance is performed.
- Integrates with vSphere HA for reset virtual machine functionality and compatibility with vMotion.

Benefits

vSphere App HA provides you with the following benefits:

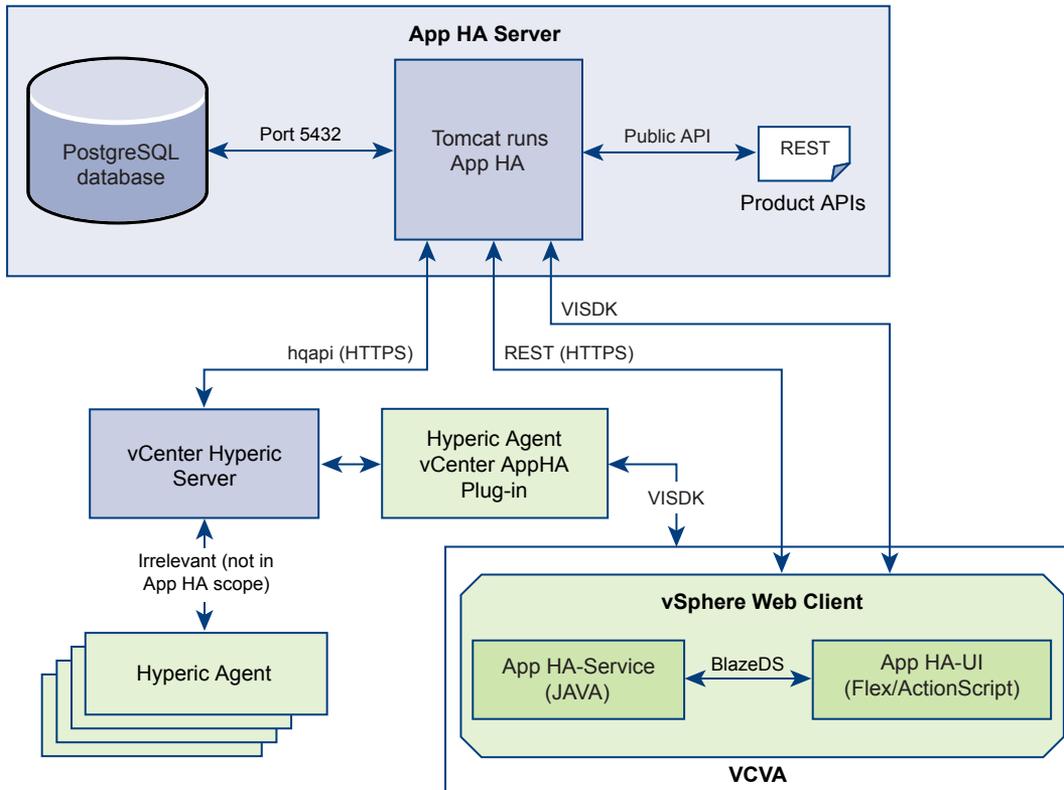
- Ensures that your most critical applications remain available.
- Enables you to receive alerts and notifications in the event that one or more applications become unavailable.
- Provides visibility into your applications and their availability.
- Helps to minimize unplanned application downtime.
- Protects several "off the shelf" applications.

Architectural Overview of vSphere App HA

vSphere App HA is a virtual appliance that you can deploy on the vCenter Server. Using the components of vSphere App HA, you can define high availability policies for critical middleware applications running on your virtual machines in the datacenter, and configure remediation actions to increase their availability.

The architecture diagram illustrates various components of vSphere App HA and their dependencies.

Figure 2-1. vSphere App HA Architecture



Services Supported by vSphere App HA

vSphere App HA ensures all the supported services that are running in your environment, for which policies have been defined, have high availability at all times.

The Supported Services table lists the services and versions supported by vSphere App HA.

To verify the latest versions that are supported, use the VMware Interoperability Matrix at http://partnerweb.vmware.com/comp_guide2/sim/interop_matrix.php.

Table 2-1. Supported Services

Service Name	Supported Versions	Supported Operating Systems
Apache Tomcat	6.0, 7.0	Windows, Linux
IIS	6, 7, 8.	Windows
Microsoft SQL	2005, 2008, 2008R2, 2012	Windows
Apache HTTP Server	2.2	Windows, Linux
SharePoint *	2007, 2010	Windows
SpringSource tc Runtime	6.0, 7.0	Windows, Linux

Table 2-1. Supported Services (Continued)

Service Name	Supported Versions	Supported Operating Systems
PostgreSQL	8.x, 9.x	Windows, Linux
Oracle	10 g2, 11 g2	Windows, Linux

Getting Started with vSphere App HA

If vSphere App HA is deployed, you can see the vSphere App HA plug-in on the Plug-in Management screen of the vSphere Web Client.

You can view this screen by navigating to **Administration > Solutions > vCenter Server Extensions**.

This chapter includes the following topics:

- [“Access vSphere App HA Using vSphere Web Client,”](#) on page 11
- [“Enable a vSphere App HA Plug-In,”](#) on page 11
- [“Disable a vSphere App HA Plug-In,”](#) on page 12
- [“Setting Up vSphere App HA,”](#) on page 12

Access vSphere App HA Using vSphere Web Client

You can access vSphere App HA through the vSphere Web Client. vSphere App HA is compatible only with the vSphere Web Client.

Prerequisites

Deploy the vSphere App HA plug-in on vSphere Web Client. For more information, see the *vSphere App HA Installation and Configuration Guide*.

Procedure

- 1 Open a Web browser and type the URL for accessing the vSphere Web Client, **https://client-hostname:port/vsphere-client**.

You can use the IP address of the vSphere Web Client as an alternative to the client host name.

By default the port is 9443, but this can be changed during vSphere Web Client installation.

- 2 Type the credentials in the **Username** and **Password** text boxes.
- 3 Click **Login**.

If vSphere App HA is deployed correctly, vSphere App HA is listed on the Administration page of vSphere Web Client. Also, the **Applications Availability** tab appears under the **Monitor** tab.

Enable a vSphere App HA Plug-In

You can enable a disabled vSphere App HA plug-in.

When you deploy a vSphere App HA plug-in, it is enabled by default. If you have had to disable the plug-in, you can re-enable it.

Procedure

- 1 Log in to the vSphere Web Client with vSphere administrator credentials.
- 2 From the **Inventory** menu, click **Administration**.
- 3 Click **Solutions > Client Plug-ins**.
- 4 Right-click the vSphere App HA plug-in and click **Enable**.

Disable a vSphere App HA Plug-In

You can disable the vSphere App HA plug-in.

Procedure

- 1 Log in to the vSphere Web Client with vSphere administrator credentials.
- 2 From the **Inventory** menu, click **Administration**.
- 3 Click **Solutions > Client Plug-ins**.
- 4 Right-click the vSphere App HA plug-in and click **Disable**.

Disabling the plug-in does not remove the plug-in from the vSphere Web Client. You must uninstall the plug-in to remove it.

Setting Up vSphere App HA

After you deploy vSphere App HA, you must set up vSphere App HA and connect to the vCenter Hyperic server.

Prerequisites

- Your vCenter Server license must include the vSphere App HA feature.
- vCenter Hyperic server must be installed on vCenter Server.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials at root level.
- 2 From the **Inventory** menu, navigate to **Administration > vSphere App HA**.
- 3 Click the **Settings** tab.
- 4 Type the following parameters to configure the vCenter Hyperic server and click **Apply**.

Option	Description
vCenter Hyperic Server	Type the IP address or host name of the vCenter Hyperic server.
Port	Type the number of the secure port for establishing a connection to the vCenter Hyperic server.
Username	Type the user name of the vCenter Hyperic server.
Password	Type the password of the vCenter Hyperic server.

- 5 Approve the vCenter Hyperic certificate.

A connection to the vCenter Hyperic server is established.

Policies in vSphere App HA

A policy is an object that defines the service type, and the remediation actions to occur when a service becomes unavailable .

You can assign a policy to multiple services.

The service type that you define in the policy must be compatible with the service it is assigned to.

You can view all the policies in the policies table on the **Policies** tab. The policies can be filtered and sorted.

You can also delete policies on the **Policies** tab.

This chapter includes the following topics:

- [“Create a Policy,”](#) on page 13
- [“View a Policy,”](#) on page 14
- [“Edit a Policy,”](#) on page 14
- [“Duplicate a Policy,”](#) on page 15
- [“Delete a Policy,”](#) on page 15

Create a Policy

You can create a policy in which you define the remediation actions to take place when the service is unavailable or unstable.

Prerequisites

- To get email notifications, you must have configured the vCenter Server mail server, using vSphere Web Client.
- To trigger alarms, you must have configured the VMware vCenter AppHA Plug-in on the vCenter Hyperic server.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials at root level.
- 2 Navigate to **Administration > vSphere App HA**.
- 3 On the **Policies** tab, click the **Create Policy** icon .
- 4 Type the **Policy Name** and **Description**, and click **Next**.
The policy name must be unique. The description is optional.
- 5 From the **Application Service** drop-down menu, select an application service type.

- 6 Complete the information in the service configuration text boxes, or verify that the **Use current configuration** check boxes are selected, and click **Next**.
- 7 (Optional) Select the remediation actions that take place when the service is unavailable or unstable.

Option	Description
Restart Service	<ul style="list-style-type: none"> ■ Type the startup time for the service. Startup time refers to the time it takes for the service to restart. ■ Select the Reset VM in case of restart failed check box to reset the virtual machine if the service does not restart.
Reset VM in case service is unstable	<ul style="list-style-type: none"> ■ From the Number of service restarts drop-down menu, select the number of restarts after which this service is considered unstable. ■ Type the time frame in the Time window text box.

- 8 Click **Next**.
- 9 (Optional) Create a vCenter Server alarm for the policy by selecting the **Service has stopped** event to trigger the vCenter Server alarm.
- 10 (Optional) Type comma separated email addresses for notification purposes, and click **Next**.
- 11 In the Ready to Complete screen, verify the settings and click **Finish**.

A policy is created and is listed in the policy definition table. You can assign this policy to services of the same type.

View a Policy

You can view details that you specified for a policy.

Procedure

- 1 Log in to the vSphere Web Client.
- 2 Navigate to **Administration > vSphere App HA**.
- 3 On the **Policies** tab, click the **View Policy** icon .

In the policy wizard you can view all the information that was specified for the policy. You can select wizard screens in random order. The data is read only.

Edit a Policy

You can change the values in a policy, including policies that have already been assigned to services.

If a conflict occurs between the changes that you make to an assigned policy and the required settings of the service, the policy is detached from that service and an error appears in the Policy column of the Service Availability table.

Some of the key reasons that might cause this issue are:

- bad configuration in the edited policy
- inability to communicate with the vCenter Hyperic server
- the VMware vCenter AppHA Plug-in not being configured.

You can edit the policy again and reassign it, or assign a new policy to the services.

Prerequisites

- When the policy that you are editing is assigned to services, you must have **vSphere App HA.Modify** privileges for each virtual machine on which the services are running.
- When the policy that you are editing is assigned to services, those services must be in maintenance mode before you edit the policy.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials at root level.
- 2 Navigate to **Administration > vSphere App HA**.
- 3 On the **Policies** tab, select the policy to edit and click the **Edit Policy** icon .
- 4 Change the values of the policy as required, and click **Next**.
- 5 In the Ready to Complete screen, verify the settings and click **Finish**.

Duplicate a Policy

You can use an existing policy as a template for a new policy, using the **Duplicate Policy** function.

When you duplicate a policy, the default name is *Copy of original policy name*. All other details are the details of the original policy.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials at root level.
- 2 Navigate to **Administration > vSphere App HA**.
- 3 On the **Policies** tab, click the **Duplicate Policy** icon .
- 4 (Optional) If required, change any of the values provided in the wizard.
- 5 In the Ready to Complete screen, verify the settings and click **Finish**.

The policy is created and is listed in the policy definition table. You can assign this policy to services of the same type.

Delete a Policy

You can delete a policy and remove it from the policy definition table.

Prerequisites

If a policy is assigned to a service, you must unassign the policy before you can delete it.

Procedure

- 1 Log in to the vSphere Web Client using **vSphere App HA.Modify** credentials at root level.
- 2 Navigate to **Administration > vSphere App HA**.
- 3 On the **Policies** tab, select the policy to be deleted in the policy definition table.
- 4 Click the **Delete Policy** icon .
- 5 Click **Yes** on the confirmation message.

The policy is deleted from the policy definition table.

Managing Services

You can use view the services in your virtual environment and perform management tasks, such as assigning policies and putting services into maintenance mode.

This chapter includes the following topics:

- [“Service Availability Summary,”](#) on page 17
- [“Services Availability Status,”](#) on page 18
- [“Assign a Policy to Application Services,”](#) on page 18
- [“Unassign a Policy,”](#) on page 19
- [“Apply Maintenance Mode to Application Services,”](#) on page 19
- [“Exit Maintenance Mode,”](#) on page 20
- [“Add Custom Services,”](#) on page 20
- [“Remove Custom Services,”](#) on page 20

Service Availability Summary

The summary status of the services is displayed on the **Monitor > Applications Availability** tab.

Services can be designated as available, unavailable, of unknown status, unsynchronized, or in maintenance mode.

The Availability Status Summary icon above the table indicates the most critical status of the all the services in the table. A summary of all services that are not categorized as Available are listed below the icon.

Table 5-1. Availability Status Summary

Icon	Description
	Indicates that all the services are available or have an unknown status.
	Indicates that one or more services are unavailable.
	Indicates that one or more services are unsynchronized.
	Indicates that one or more services are in maintenance mode.

Services Availability Status

The Services Availability Status table provides details of all the application services that are running in your environment, including essential information such as the virtual machine name and install path of each service, its availability status and any remediation policy that is assigned to the service. You can also manage services such as assigning or changing a policy for a service, putting a service into maintenance mode, and so on. manage services.

You can filter and sort the table.

Table 5-2. Services Availability Table

Field	Description
Application Service	The name of the application service running in your environment.
Virtual Machine	The name of the virtual machine on which the application service is running.
Install Path	The location of the installed service.
Availability Status	<p>The status of an application service's availability. The availability status can be one of the following.</p> <ul style="list-style-type: none">  Indicates that the service is available.  Indicates that the service is unavailable.  Indicates that the availability of the service is unknown.  indicates that the agent clock is not synchronized with the server clock.  indicates that the service is in maintenance mode.
Reset VM Remediation Limitation	<p>Information about any factors that might impact a reset virtual machine remediation action.</p> <p>The reason that the reset virtual machine remediation action cannot be performed on the service, if applicable.</p> <p>When there is no limitation, the cell is empty.</p>
Policy	<p>The name of the policy assigned to an application service. The cell is empty when a policy has not been assigned.</p> <p>If a policy was assigned that conflicts with the requirements of the service, the policy is detached from that service and an error appears in the Policy column.</p>

Assign a Policy to Application Services

You can assign a policy to one or more application services that are of the same service type.

Prerequisites

- Define a policy. For more information about policy creation, see [“Create a Policy,”](#) on page 13.
- Verify that you have **vSphere App HA.Modify** privileges for each virtual machine on which the services to which you will apply a policy are running.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials.
- 2 On the **Monitor** tab, click the **Application Availability** tab.

- 3 Select the services for the applications to which you want to assign a policy.

If you select one or more services that are incompatible with the service type, the **Assign Policy** icon disappears.

- 4 Click the **Assign Policy** icon .

The Assign Policy window appears, which filters and lists all the policies according to service type in a tabular form.

- 5 Select a policy.
- 6 Click **OK**.

The selected policy is assigned to the application services that you specified.

Unassign a Policy

You can unassign a policy from one or more application services. The unassigned policy is removed from the application service.

Prerequisites

Verify that you have **vSphere App HA.Modify** privileges for each virtual machine on which the services from which you are unassigning a policy are running.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials.
- 2 On the **Monitor** tab, click the **Application Availability** tab.
- 3 Select the services for the applications from which you want to unassign a policy.
Services do not have to be of the same service type.
- 4 Click the **Unassign Policy** icon .

The policy is unassigned from the selected application services.

Apply Maintenance Mode to Application Services

You might want to apply maintenance mode to one or more application services to suspend policies while you are patching or configuring servers, or performing other vSphere App HA actions. For example, you might need to upgrade a service and you do not want the policy to be applied during the time that the upgrade is in progress.

During the time that the services are in maintenance mode, remediation actions and related alarms are not triggered.

You cannot apply maintenance mode to application services with an unknown status.

Prerequisites

Verify that you have **vSphere App HA.Modify** privileges for each virtual machine on which the services that you are placing in maintenance mode are running.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials.
- 2 On the **Monitor > Applications Availability** tab, select the services you want to enter into maintenance mode.

- 3 Click the **Enter Maintenance Mode** icon .

The availability status for the selected services is Maintenance Mode.

Exit Maintenance Mode

When you have completed the tasks that required you to enter application services into maintenance mode, you can exit the mode to activate the assigned policies again.

Prerequisites

Verify that you have **vSphere App HA.Modify** privileges for each virtual machine on which the services that you are removing from maintenance mode run.

Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials.
- 2 On the **Monitor > Applications Availability** tab, select the services.
- 3 Click the **Exit Maintenance Mode** icon .

The availability status for the services no longer displays Maintenance Mode and the icon in the services summary above the table changes to indicate that the selected application services are no longer in maintenance mode.

Add Custom Services

You can define a custom service to use a plug-in that is not supported as standard by App HA.

You cannot add an already existing service.

Prerequisites

Verify that the plug-in for which you are creating a service is active in vCenter Hyperic . The service must support the restart action on the vCenter Hyperic server.

Procedure

- 1 Log in to the App HA virtual machine using the root credentials that were set during installation.
- 2 Run `/opt/vadm-engine/bin/custom_service.sh add`.
- 3 At the prompt, specify the name of the service to add.

The service name length must be between 2 and 128 ASCII characters.

After the service is added, the App HA service automatically restarts. The service restart takes 1-2 minutes.

Remove Custom Services

You can remove custom services from App HA.

You cannot remove a standard App HA service.

Prerequisites

Verify that there are no policies defined for the service that you are removing.

Procedure

- 1 Log in to the App HA virtual machine using the root credentials that were set during installation.

- 2 Run `/opt/vadm-engine/bin/custom_service.sh remove`.
- 3 At the prompt, specify the name of the service to remove.

After the service is removed, the App HA service automatically restarts. The service restart takes 1-2 minutes.

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