

# vSphere App HA Installation and Configuration Guide

VMware vSphere App HA 1.1

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# About VMware vSphere App HA Installation and Configuration Guide

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# 1

VMware® vSphere App HA is a plug-in for the vSphere Web Client. The guide describes the installation and configuration information about vSphere App HA.

vSphere HA enables you to define high availability at the infrastructure level. In case of a problem with the ESX/ESXi host, the virtual machines move to another ESX/ESXi host to ensure their availability. In case of a problem with the operating system, the virtual machines attempt a restart. vSphere App HA ensures that applications running on the virtual machines also have high availability.

## Intended Audience

This information is intended for anyone who wants to deploy and configure vSphere App HA virtual appliance in their virtual environment. It is assumed that users are familiar with using vCenter Server, the vSphere Web Client, and vCenter Hyperic.



# vSphere App HA Overview

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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:

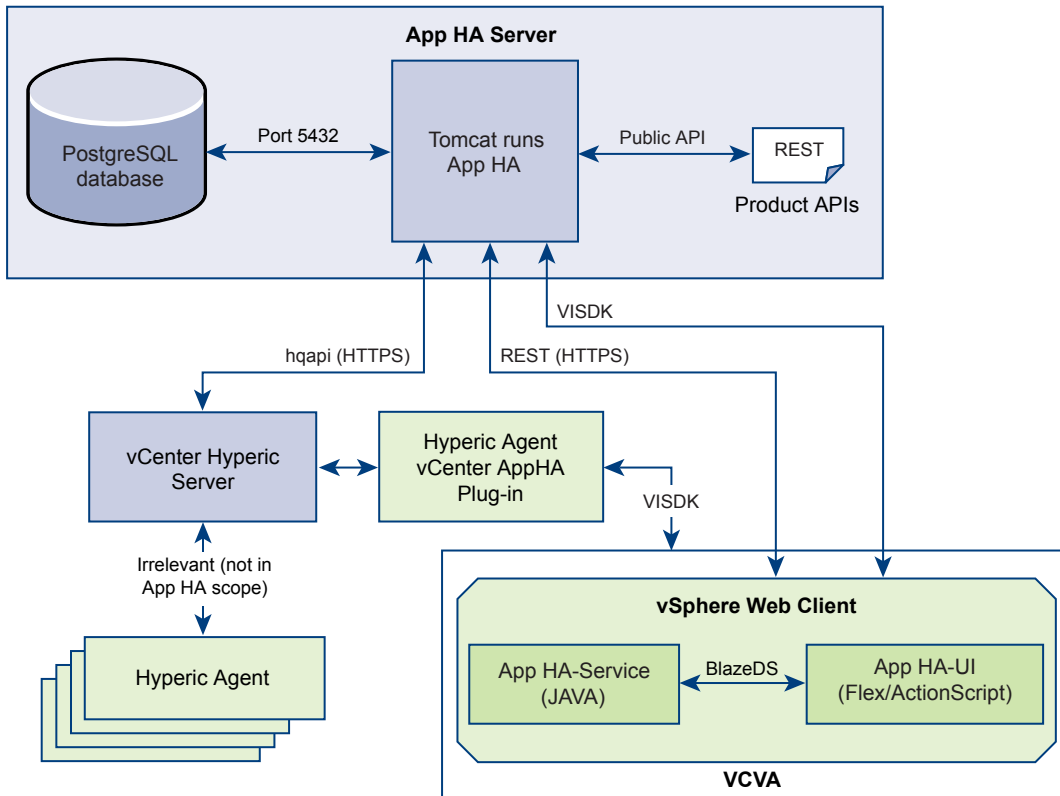
- Ensures that your most critical applications remain available.
- Enables you to receive alerts and notifications in the event that one or more applications become unavailable.
- Provides visibility into your applications and their availability.
- Helps to minimize unplanned application downtime.
-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

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



# Installing and Setting Up vSphere App HA

# 3

vSphere App HA is a virtual appliance that can run in the VMware virtual infrastructure. You must ensure that your environment meets requirements so that you can deploy and use the vSphere App HA virtual appliance.

This chapter includes the following topics:

- [“Virtual Machine Requirements,”](#) on page 11
- [“vSphere App HA Software Requirements,”](#) on page 11
- [“Port Requirements for vSphere App HA,”](#) on page 12
- [“Deploy a vSphere App HA Virtual Appliance,”](#) on page 12

## Virtual Machine Requirements

You must meet the following disk space, memory, and network requirements before you start deploying the vSphere App HA virtual appliance on the vSphere Web Client.

Component	Minimum Requirements
CPU	2 vCPUs
Memory	4GB
Disk size	20GB
Network	1GBps

## vSphere App HA Software Requirements

Your environment must meet certain software requirements before you can deploy the vSphere App HA virtual appliance.

**Table 3-1.** Software Requirements

Component	Supported Versions
vSphere Web Client	vSphere Web Client 5.5 U1, 5.5, and 5.1 U2
ESX/ESXi	,5.5 U1, 5.5.0, and 5.1 U2
vCenter Hyperic	vCenter Hyperic 5.8.1
Web browser	All browsers that support vSphere Web Client 5.5 U1 and 5.1 U2

## Port Requirements for vSphere App HA

You must have certain ports open for vSphere App HA virtual appliance access and for the REST API.

**Table 3-2.** Port Requirements

Port Number	Description
22	Port for enabling SSH access to the vSphere App HA virtual appliance.
8443	Secure port for the REST API.

## Deploy a vSphere App HA Virtual Appliance

You can deploy the vSphere App HA virtual appliance by using vSphere Web Client. VMware provides the vSphere App HA appliance in an OVA format.

### Prerequisites

- vSphere Web Client administrator privileges.
- The virtual environment in which you deploy vSphere App HA must be monitored by vCenter Hyperic.
- If you had previously installed vSphere App HA, verify that the vSphere Web Client was restarted after that instance of vSphere App HA was uninstalled.

### Procedure

- 1 In the vSphere Web Client, click **Host and Clusters**.
- 2 Right-click the vCenter Server on which you want to deploy the vSphere App HA virtual appliance and select **Deploy OVF template**.
- 3 Browse to the OVA file and select it, or type the URL from where you want to deploy the OVA template, and click **Next**.
- 4 In the Review details screen, click **Next**.
- 5 (Optional) If a warning is displayed about the OVF package containing extra configuration options, select the **Accept extra configuration options** checkbox to proceed.
- 6 Accept the end user license agreement.
- 7 Type a unique name of the virtual appliance, select the folder or datacenter where you want to deploy the OVF, and click **Next**.

If more than one data center is present, you must select the datacenter on which you want to deploy the virtual appliance.

- 8 On the Select a resource screen, select the location to run the deployed OVF template, and click **Next**.  
The Select storage screen appears where you can select the location to store the files of the deployed OVF template.
- 9 From the **Select virtual disk format** drop-down menu, select **Thin Provision** as the disk format, and click **Next**.
- 10 Configure the networks the deployed template should use, enter the SSH password for the vSphere App HA virtual machine, and click **Next**.
- 11 On the vCenter extension installation screen, click **Next**.

The Ready to Complete screen displays a summary of the deployment settings.

- 12 Select **Power on after deployment**, and then click **Finish**.

The process of deploying the vSphere App HA virtual appliance starts.

This process might take several minutes.

The vSphere App HA OVA is deployed on your vSphere Web Client.

Log out of the vSphere Web Client and log in again to view the vSphere App HA virtual appliance deployed on the vSphere Web Client. You can also see the vSphere App HA plug-in in the list of vCenter Server extensions in the vSphere Web Client.



# Configuring the vSphere App HA Environment

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Following deployment of the vSphere App HA virtual appliance, there are a number of tasks that are required to enable the remediation and reset virtual machine functions that it provides.

- [Setting Up vSphere App HA](#) on page 15  
After you deploy vSphere App HA, you must set up vSphere App HA and connect to the vCenter Hyperic server.
- [Configure vSphere HA to Reset Virtual Machines](#) on page 16  
You can configure vSphere App HA to reset an unavailable or unstable virtual machine. This function requires that vSphere HA is enabled for the virtual machines.
- [Configure vSphere App HA Properties in the vCenter Hyperic Agent Properties File](#) on page 17  
To trigger vSphere App HA alarms on vCenter, you must configure certain properties in the relevant vCenter Hyperic `agent.properties` file.
- [Create a VMware vCenter AppHA Plug-in](#) on page 17  
To enable alarms to be sent from the vCenter Server in the event of a remediation action being triggered, you must create a new service in vCenter Hyperic.
- [Configure Mail Sender Settings](#) on page 18  
You must configure the email address of the sender account in order to enable vCenter Server operations, such as sending email notifications as alarm actions.

## 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
<b>vCenter Hyperic Server</b>	Type the IP address or host name of the vCenter Hyperic server.
<b>Port</b>	Type the number of the secure port for establishing a connection to the vCenter Hyperic server.
<b>Username</b>	Type the user name of the vCenter Hyperic server.
<b>Password</b>	Type the password of the vCenter Hyperic server.

- 5 Approve the vCenter Hyperic certificate.

A connection to the vCenter Hyperic server is established.

## Configure vSphere HA to Reset Virtual Machines

You can configure vSphere App HA to reset an unavailable or unstable virtual machine. This function requires that vSphere HA is enabled for the virtual machines.

All virtual machines for which you want to have the reset function must be part of a vSphere HA-enabled cluster. Use this procedure to define a vSphere HA-enabled cluster in vSphere Web Client.

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**NOTE** This procedure is not necessary for virtual machines running on EXSi 5.1 servers.

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You can make existing clusters vSphere HA-enabled. See [“Add vSphere HA Functionality to an Existing Cluster,”](#) on page 16.

### Prerequisites

Verify that you have a license for the vSphere HA feature.

### Procedure

- 1 In the vSphere Web Client navigator, right-click the object that contains the virtual machines for which you want to enable the reset machine function and select **New Cluster**.
- 2 Complete the New Cluster wizard, including making the following changes, and click **OK**.

Item	Action
vSphere App HA	Select the <b>Turn On</b> checkbox.
VM Monitoring	Select <b>VM and Application Monitoring</b> from the menu.

The vSphere HA-enabled cluster is created. All virtual machines within the cluster have the reset machine function.

You can add hosts to the cluster, or can move hosts between clusters.

## Add vSphere HA Functionality to an Existing Cluster

All virtual machines for which you want to have the reset function must be part of a vSphere HA-enabled cluster. You can enable vSphere HA functionality on clusters that already exist in your vSphere Web Client.

### Procedure

- 1 In the vSphere Web Client navigator, select the cluster that contains the virtual machines for which you want to enable the reset machine function.
- 2 Select **Manage > Settings > vSphere HA**.



- 3 Click **Edit**.
- 4 Select the **Turn ON vSphere HA** checkbox.
- 5 Under VM Monitoring, select **VM & Application Monitoring** from the menu and click **OK**.

All virtual machines within the cluster have the vSphere HA reset machine function.

You can add hosts to the cluster, or can move hosts between clusters.

## Configure vSphere App HA Properties in the vCenter Hyperic Agent Properties File

To trigger vSphere App HA alarms on vCenter, you must configure certain properties in the relevant vCenter Hyperic `agent.properties` file.

### Prerequisites

- 1 Verify that the vCenter Hyperic agent is stopped.
- 2 Delete the `HYPERIC_AGENT/data/` folder.
- 3 Delete the vCenter Hyperic agent platform from the vCenter Hyperic server inventory.

### Procedure

- 1 Open the `agent.properties` file for the vCenter Hyperic agent on the virtual machine.
- 2 Locate the following properties, uncomment them, and set the value after the `=`, as shown.

Property	Value
<code>agent.setup.camLogin=</code>	Type <code>vSphere_Hyperic_Server_user_name</code>
<code>agent.setup.camPword=</code>	Type <code>vSphere_Hyperic_Server_password</code>
<code>agent.setup.acceptUnverifiedCertificate=</code>	Type <code>yes</code>
<code>accept.unverified.certificates=</code>	Type <code>true</code>

For example, `agent.setup.camLogin=hqadmin`.

Make sure that there is only one instance of each vCenter Hyperic server property.

- 3 Save the `agent.properties` file.

### What to do next

Start the vCenter Hyperic agent.

Add the platform to the vCenter Hyperic server inventory, or wait for it to be added by vSphere App HA.

## Create a VMware vCenter AppHA Plug-in

To enable alarms to be sent from the vCenter Server in the event of a remediation action being triggered, you must create a new service in vCenter Hyperic.

The term "virtual machine" in vSphere App HA is referred to as a platform in vCenter Hyperic.

The term "service" in vSphere App HA is referred to as a server in vCenter Hyperic.

### Prerequisites

Verify that you do not have any other VMware vCenter AppHA Plug-in on the vCenter Hyperic server.

**Procedure**

- 1 In the vCenter Hyperic user interface, select **Resources > Browse**.
- 2 Under **Platforms** click the platform on which to define the VMware vCenter AppHA Plug-in.
- 3 Select **Tools Menu > New Server**.
- 4 Enter the following values and click **OK**.

The values must be exactly as written.

Parameter	Required Value
<b>Name</b>	<b>VC</b>
<b>Server Type</b>	<b>VMware vCenter AppHA</b>
<b>Install Path</b>	<b>*</b>

- 5 Click the **Configuration Properties** link.
- 6 Verify that the **Auto-Discover Services?** checkbox is not selected.
- 7 Enter the following values and click **OK**.

Parameter	Description
<b>url</b>	Replace localhost with the IP address of the vCenter Server
<b>user</b>	Type the vSphere Web Client login user name
<b>pass</b>	Type the vSphere Web Client login password
<b>process query</b>	Use the default

The VMware vCenter AppHA Plug-in is created.

## Integrating vCenter Hyperic and vSphere App HA

vSphere App HA requires vCenter Hyperic agents to be installed on each virtual machine that you want to monitor.

To enable integration between vCenter Hyperic and vSphere App HA, you must install the vCenter Hyperic server and deploy a vCenter Hyperic agent on all of the virtual machines that vSphere App HA must monitor.

To install the vCenter Hyperic server and vCenter Hyperic agents, see *Getting Started with vCenter Hyperic* at <https://www.vmware.com/support/pubs/vfabric-hyperic.html>.

## Configure Mail Sender Settings

You must configure the email address of the sender account in order to enable vCenter Server operations, such as sending email notifications as alarm actions.

Required privilege: **Global.Settings**

**Prerequisites**

To configure SMTP notifications, the vSphere Client must be connected to the vCenter Server system.

**Procedure**

- 1 If necessary, select **Administration > vCenter Server Settings** to display the vCenter Server Settings dialog box.

- 2 If the vCenter Server system is part of a connected group, select the server you want to configure from the **Current vCenter Server** drop-down menu.
- 3 In the navigation pane, select **Mail**.
- 4 Enter the SMTP server information.

The SMTP Server is the DNS name or IP address of the SMTP gateway to use for sending email messages

- 5 Enter the sender account information.

The Sender Account is the email message address of the sender.

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**NOTE** The full email address must be entered, including the domain name (the information after the @ sign).

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For example, mail\_server@datacenter.com.

- 6 Click **OK**.

### **What to do next**

To test the mail settings, create an alarm that can be triggered by a user action, such as an alarm triggered by powering off a virtual machine, and verify that you receive an email when the alarm is triggered.



# Uninstalling vSphere App HA

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Uninstalling vSphere App HA comprises two tasks, uninstalling the vSphere App HA plug-in from the vSphere Web Client, and deleting the vSphere App HA virtual appliance from vCenter Server.

- [Uninstall vSphere App HA Plug-in](#) on page 21  
You uninstall the plug-in from the vSphere Web Client.
- [Delete a vSphere App HA Virtual Machine](#) on page 22  
You can totally remove a vSphere App HA virtual machine from a vCenter Server.

## Uninstall vSphere App HA Plug-in

You uninstall the plug-in from the vSphere Web Client.

### Prerequisites

If you have already configured the vSphere App HA virtual appliance to connect to the vCenter Hyperic server, you must be connected to vCenter Hyperic server to uninstall vSphere App HA.

### Procedure

- 1 Log in to the vSphere Web Client using the **vSphere App HA.Modify** credentials.
- 2 From the **Inventory** menu, navigate to **Administration > vSphere App HA**.
- 3 On the **Settings** tab, click **Uninstall**.
- 4 On the confirmation message, click **Yes**.

The uninstall process starts and might take few minutes depending on number of applications to which policies are assigned.

A popup message indicates completion of the plug-in unistall.

You must restart the vSphere Web Client service before you install the vSphere App HA plug-in again.

### What to do next

Delete the vSphere App HA virtual machine from the vCenter Server. See [“Delete a vSphere App HA Virtual Machine,”](#) on page 22

## Delete a vSphere App HA Virtual Machine

You can totally remove a vSphere App HA virtual machine from a vCenter Server.

### Prerequisites

- Verify that you have uninstalled the vSphere App HA plug-in from the vSphere Web Client before you remove the virtual machine. See [“Uninstall vSphere App HA Plug-in,”](#) on page 21.
- If you have already configured the vSphere App HA virtual appliance to connect to the vCenter Hyperic server, you must be connected to vCenter Hyperic server to uninstall vSphere App HA.

### Procedure

- 1 Power off the vSphere App HA virtual machine.
- 2 Delete the virtual machine from the vCenter Server.

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