

VMware vCenter AppSpeed Installation and Upgrade Guide

AppSpeed Server 1.5

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About This Book

VMware vCenter™ AppSpeed provides performance management and service-level reporting for services running within virtual appliances. This book describes the procedures for installing the VMware vCenter AppSpeed virtual appliance, including how to configure AppSpeed Server and deploy the AppSpeed probes on the VMware® host machines within the datacenter network.

AppSpeed analyzes the traffic that flows between users, Web applications, and back-end servers. This analysis provides visibility into multitier services and enables you to identify performance problems that originate from inadequate resource allocation and service problems.

Intended Audience

This guide is intended for anyone who wants to install the AppSpeed virtual appliance on a VMware vSphere™ Server.

The information is written for experienced Windows or Linux system administrators who are familiar with virtual appliance technology and datacenter operations.

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VMware vCenter AppSpeed Installation

1

You install AppSpeed on a VMware host machine that resides within the datacenter network and integrates with the VMware vSphere Client. You install one or more AppSpeed probes on each host to be monitored.

This chapter includes the following topics:

- [“Installation Prerequisites,”](#) on page 7
- [“Installation Workflow,”](#) on page 9

Installation Prerequisites

Before installing AppSpeed, review the system and deployment requirements.

A variety of VMware ESX™ versions support AppSpeed.

- Server: ESX 3.5.x or 4.0.x Probes: ESX 3.0x, 3.5.x, or 4.0.x
- vSphere 4.x

System Requirements

Before you install AppSpeed, make sure that you have the necessary administrator privileges and system requirements.

Review these system requirements before you install AppSpeed.

- You must have admin-level access to vCenter Server for the automated installation process.
- You must define routable IP addresses for servers and probes.

VMware recommends that you do not use DHCP because the IP address of AppSpeed Server might change after setup is complete. However, if you do use DHCP, you do not need routable IP addresses.

- If HTTPS sites are to be monitored, you require the SSL private keys.
- You must have **Administrator** privileges on the client machine to install Adobe Flash Player 10.
- Adobe Flash Player 10 must be installed as an ActiveX Control; therefore, it must be downloaded using Internet Explorer.
- VMware recommends that you synchronize the time on the hosts on which AppSpeed Server and the AppSpeed probes will be installed. If the time is not synchronized, AppSpeed might lose data and experience delays in the mapping process. To synchronize the time, set an NTP server in the **Configuring Time** option for each ESX host in vCenter.

Deployment Considerations

You must have sufficient system resources to deploy AppSpeed.

When planning your AppSpeed deployment, make sure that you have these system resource requirements.

- Server

- 40GB hard disk drive
- 4GB RAM
- 2 vCPUs

Virtual CPUs are created as part of the AppSpeed deployment. In addition, AppSpeed reserves 3000MHz.

- Probes

- 5GB hard disk drive
- 0.5GB RAM
- 2 vCPUs

Virtual CPUs are created as part of the AppSpeed deployment. Two vCPUs require no more than the equivalent resources of a single physical CPU.

Port Requirements

AppSpeed requires that specific ports be open on your firewall.

Table 1-1. Open Port Requirements

Server Connection	Required Open Ports
AppSpeed Server to vCenter Server	
TCP port 443	Connects to vCenter Server for the vCenter interface. Port 443 is the vCenter default Web service port, but you can configure a different TCP port in vCenter.
TCP port 80	Connects to vCenter Server for the vCenter proxy interface. This port is used only during setup to verify that the vCenter proxy is configured correctly. Port 80 is the vCenter default proxy service port, but you can configure a different TCP port in vCenter.
vCenter Client to AppSpeed Server	
TCP ports 80 and 443	Connects to AppSpeed Server (Web interface). You can configure a different TCP port during AppSpeed setup.
AppSpeed Server and probe communication	
TCP port 1194	Connects to AppSpeed Server (OpenVPN over a TCP connection).
UDP port 123	Connects to AppSpeed Server (NTP).
TCP port 22	Connects to the probes if you want to access the probes from outside the VPN.
vSphere to vCenter Server	
TCP port 80	Connects to vCenter Server (vCenter proxy interface). Port 80 is the vCenter default proxy service port, but you can configure a different TCP port in vCenter.

Installation Workflow

AppSpeed is a virtual appliance in Open Virtualization Appliance (OVA) format. The AppSpeed plug-in is installed in the vSphere Client.

You perform the installation and setup process in various stages.

- 1 Import the OVA file and configure AppSpeed Server (see [Chapter 2, “Installing and Configuring AppSpeed Server,”](#) on page 11).
- 2 Add a valid AppSpeed license key (see [“Add a License,”](#) on page 13).
- 3 Install the AppSpeed probes (see [Chapter 3, “Deploying AppSpeed Probes,”](#) on page 15).
- 4 Verify the successful deployment of the probes (see [“Verifying Probe Installation,”](#) on page 17).

Installing and Configuring AppSpeed Server

2

You can install AppSpeed Server on any ESX 3.5 host, or later, that is managed by vCenter Server for the environment you want to monitor. AppSpeed is provided as an OVA file.

This chapter includes the following topics:

- [“Install AppSpeed Server on the vSphere Client,”](#) on page 11
- [“Configure AppSpeed Server,”](#) on page 12
- [“Define AppSpeed Users,”](#) on page 13
- [“Add a License,”](#) on page 13
- [“View Unmapped Traffic,”](#) on page 13

Install AppSpeed Server on the vSphere Client

The first step in the installation process is to import the OVA file in the installation package to the vSphere Client.

Prerequisites

You must have administrator privileges to import the OVA file.

Procedure

- 1 Save the OVA file in the same location as the other files in the installation package, which must be a location that you can access from the vSphere Client.
- 2 In the vSphere Client, select **File > Deploy OVF Template**.
- 3 Select **Deploy from File** and click **Browse** to locate the OVA file.
- 4 Click **Next** and click **Next** again.
- 5 Read and accept the End User License Agreement, and click **Next**.
- 6 Type a name for the virtual appliance server in the **Name** text box.
The name must be unique in the vSphere Client.
- 7 Select the location for the deployed template and click **Next**.
- 8 From the Host/Cluster tree in the upper-right pane, select the ESX host on which to install the virtual appliance, and click **Next**.

The host must be managed by vCenter Server for the environment that you want to monitor.

If you select a cluster, you might be required to select a specific host in that cluster.

- 9 (Optional) Select the datastore on which to store the files for the virtual appliance, and click **Next**.
- 10 From the **Management Network** menu, select a network that has access to the other machines and to vCenter Server to use to manage the probes.
AppSpeed Server uses this network to deploy and communicate with probes deployed on other hosts.
- 11 Click **Next**.
- 12 Review the installation summary and click **Finish** to begin installation.
When the installation is complete, the virtual appliance is added in the vSphere Client.

What to do next

In the vSphere Client, select **Home > Inventory > Hosts and Clusters**, and on the **Getting Started** tab click **Power on the virtual machine** to start the virtual appliance.

Configure AppSpeed Server

You configure AppSpeed Server from the vSphere Client.

Procedure

- 1 Power on the AppSpeed virtual machine.
- 2 Ensure that the virtual machine is selected in the vSphere inventory tree, and click the **Console** tab.
- 3 At the login prompt, type **setup**.
To accept the default value of a parameter, press Enter, or specify an alternative value.
The current value for each parameter appears in brackets.
If you need to exit the console after you begin the setup, press Ctrl+Alt. Click in the console again to reinitiate the setup.
- 4 (Optional) Select a setting for the network management card.
 - a Type **Y** to use DHCP settings.
 - b Type **N** to set a fixed IP address.
You are prompted to set the IP address, netmask, and gateway for the management card.
 - c (Optional) If you do not want to specify the gateway, type **0.0.0.0**.
- 5 Set the AppSpeed time zone.
If the time zone list does not fit in the console window, press question mark (?) to view all locations.
- 6 Configure the vCenter IP address, user name, and password.
- 7 (Optional) Specify the port number.
Type the port number immediately after the IP address, preceded by a colon (:). For example, 10.23.89.89:8080 indicates port 8080 on IP address 10.23.89.89.
- 8 Set a unique namespace for this AppSpeed Server.
The namespace can consist of up to 26 lowercase letters, digits, and dashes.
- 9 Confirm whether AppSpeed must be installed in such a way that vSphere cannot connect to it directly.
- 10 Confirm that you want to use the default vCenter port settings, or specify different port settings.
- 11 Press Enter to confirm that you want to complete the setup process.

- 12 (Optional) Press Ctrl+C to reinitiate the setup process and change any parameter values.
If you reinitiate the setup process, the previous values are retained. You can change the values as needed.
- 13 When prompted, review the setup summary and press Enter to accept the settings and complete the setup process.

What to do next

Install AppSpeed probes. See [“Install an AppSpeed Probe,”](#) on page 16.

If you want to install more than one AppSpeed Server, see [Chapter 5, “Using Multiple AppSpeed Servers,”](#) on page 21.

Define AppSpeed Users

Only users who are assigned the AppSpeed User role on the AppSpeed Server virtual machine or have AppSpeed user privileges incorporated in another role can access, view, or manage AppSpeed. AppSpeed privileges are automatically added to the Administrator role during AppSpeed Server setup. You can also add AppSpeed privileges to other existing roles.

Procedure

- 1 In the vSphere Client, right-click the appropriate AppSpeed Server in the Inventory tree.
- 2 Select **Add Permission**.
- 3 In the Assign Permissions window, click **Add** to add a user or group of users.
- 4 In the list in the Assigned Role pane, select **AppSpeed User**.
- 5 Click **OK**.

Add a License

You must have an AppSpeed license to monitor servers. You can deploy up to eight probes if you are using an evaluation license.

Procedure

- 1 In the AppSpeed menu bar, click **Administration**.
- 2 In the page selection bar, click **License**.
- 3 Click **Add License**.
- 4 Type the license key provided by VMware in the text box and click **OK**.

The license key is validated, and its details are added on the License page.

View Unmapped Traffic

You can view the unmapped servers and transactions detected on the network. Unmapped objects are not yet mapped to specific services. The number of unmapped objects typically decreases over time, as AppSpeed maps the environment.

Prerequisites

To view unmapped traffic on HTTP sites that incorporate SSL protection, you must first configure the SSL keys for each endpoint where AppSpeed detects SSL traffic. See [Chapter 4, “Managing SSL Keys,”](#) on page 19.

Procedure

- 1 In the AppSpeed menu bar, click **Mapping**.
- 2 In the page selection bar, click **Unmapped**.
- 3 View the status information for the unmapped traffic.
 - **Server:** Name of the server. Available on the **Servers** tab only.
 - **Name:** Name of transaction. Available on the **Transactions** tab only.
 - **Endpoint:** IP address and ports used by the server. Available on the **Servers** tab only.
 - **Latency:** Average and standard deviation (STDEV) latency rates for the server or transaction.
 - **Hits:** Total number of hits in the specified time frame for the server or transaction, and rate of hits per second.
 - **Throughput:** Total throughput in the specified time frame for the server or transaction, and the average throughput.
 - **Errors:** Average rate of errors, as a percentage, for the server or transaction.

Deploying AppSpeed Probes

To monitor traffic, you install at least one AppSpeed probe on one or more hosts. Each probe can monitor up to three vSwitches.

You can install more than one probe on the same host to monitor additional vSwitches. The probe settings, including the management network, storage device, and monitored vSwitches, are configured as part of the probe installation process.

You can configure probes to monitor Cisco Nexus 1000V switches. See [“Monitor Cisco Nexus 1000V Switches,”](#) on page 18.

You can add and remove probes. See [“Install an AppSpeed Probe,”](#) on page 16 and [“Delete Probes,”](#) on page 18.

To modify the probe configuration, see the *VMware vCenter AppSpeed User's Guide*.

The AppSpeed probe deployment process automatically makes these changes in the vCenter.

- Creates a snapshot of the AppSpeed Server virtual machine if one does not already exist. To save disk space, you can remove the AppSpeed Server virtual machine snapshots after the probe installation is complete.
- Creates the AppSpeed Probes folder.
- Creates promiscuous port groups for the selected vSwitches.
- Creates a probe by creating a linked clone of AppSpeed Server. AppSpeed Server is cloned as the probe, then the linked clone is deleted. If an error occurs, AppSpeed will try up to three times to create the probe. The virtual machine of the probe has the appropriate hardware settings, including CPU and memory reservation.
- Reconfigures the probe's cluster so that the probe is not subject to VMware Distributed Resource Scheduler (DRS) and VMware High Availability (HA), ensuring that the probes remain on the host on which they were deployed.
- Powers on the probe.
- Edits and reconfigures the probe's settings.

This chapter includes the following topics:

- [“Install an AppSpeed Probe,”](#) on page 16
- [“Configure the Probe for Each Host Entry,”](#) on page 16
- [“Power Probes On or Off,”](#) on page 17
- [“Verifying Probe Installation,”](#) on page 17

- [“Delete Probes,”](#) on page 18
- [“Monitor Cisco Nexus 1000V Switches,”](#) on page 18

Install an AppSpeed Probe

You can install a probe on one host at a time or multiple hosts at the same time. You can also install more than one probe on the same host.

If you want to install a probe to monitor a Nexus 1000V switch, see [“Monitor Cisco Nexus 1000V Switches,”](#) on page 18.

Procedure

- 1 In the vSphere Client, select **Home > Solutions and Applications** and click the `<AppSpeed_namespace>` icon.
A new **Services** tab appears in the vSphere Client interface.
- 2 (Optional) If the `<AppSpeed_namespace>` icon does not appear, verify that the AppSpeed plug-in is enabled in the **Plug-ins** menu.
- 3 In the AppSpeed menu bar, click **Administration**.
- 4 In the page selection bar, click **Deployment**.
- 5 Select the hosts or clusters on which to install a probe and click the **Install Probes** button.
A probe is installed on each selected host, even if another probe is already installed on the host. When you select a cluster, each host that it contains is selected.
The Probe Installation window displays a separate entry for each host that you select. Each entry appears in a separate pane.
- 6 (Optional) You can configure the probe for each probe entry, as described in [“Configure the Probe for Each Host Entry,”](#) on page 16.
- 7 (Optional) To add an additional probe to a host, click **Install another probe on this host** at the bottom of the host entry and configure the probe.
- 8 When you finish adding host-probe combinations, click the **Install Probes** button.
- 9 Review the installation information, and click **OK**.

To change the settings, click **Back**.

The Probe Status column in the Probes Management window shows the installation progress.

The probe is added to the `<namespace>` Probes folder in the vSphere Client and powered on.

What to do next

Delete the AppSpeed Server virtual machine snapshots after the probe installation is complete.

Configure the Probe for Each Host Entry

You can configure the probe for each host entry.

The probe also connects to the management network you specified, but it does not monitor the network.

To configure probes to monitor Cisco Nexus 1000V switches, see [“Monitor Cisco Nexus 1000V Switches,”](#) on page 18.

Procedure

- 1 Type the name of the probe in the **Probe Name** text box.
If you do not specify a name, a name based on the AppSpeed Server name is used.
- 2 From the **Storage** menu, select the storage device on which you want the probe to reside.
Local storage enables faster probe deployment.
- 3 From the **Management Network** menu, select the network to use to manage the probes.
 - a Select up to three monitoring vSwitches.
The vSwitches sniff traffic on the configured management network. By default, the first three available vSwitches are selected.
 - b Select either **DHCP** or **Static IP**.
If you select Static IP, you must type values for the **IP** and **Network** fields, and (optionally) the **Gateway** field.
- 4 Click **Install Probes**.
- 5 Review the summary and click **OK**.
The probe is installed. Installation might take some time.

Power Probes On or Off

You can power probes on or off from the Probes Management window.

Procedure

- 1 In the AppSpeed menu bar, click **Administration**.
- 2 In the page selection bar, click **Deployment**.
- 3 Select the check boxes for one or more probes and click **Power On** or **Power Off**.

Verifying Probe Installation

After you have installed and deployed a probe, you can check whether it has been successfully installed.

You can check the probe status in any of these locations.

- Recent Tasks pane of the vSphere Client
- Probes Management window of the AppSpeed user interface
- **Servers** tab or **Transactions** tab of the Unmapped Traffic page

If the probe is successfully installed and deployed, the status is **Running**. If there is active traffic on the part of the network that the probe is monitoring, the traffic throughput is shown.

The traffic throughput can be zero if there is no traffic on the monitored vSwitches or if a problem occurs with the installation. If the problem persists and you know that traffic is present, see [Chapter 9, “Troubleshooting AppSpeed Installation and Deployment,”](#) on page 31.

Delete Probes

If you do not want to monitor the traffic on a specific host, you can remove the probes. If you do not want to monitor specific vSwitches on a host, you can delete the probe that is monitoring those switches.

Procedure

- 1 In the AppSpeed menu bar, click **Administration**.
- 2 In the page selection bar, click **Deployment**.
- 3 Select the check boxes for one or more probes on one or multiple hosts, and click **Delete Probe**.
- 4 Click **OK** to confirm.

The probe is removed from the selected hosts only.

Monitor Cisco Nexus 1000V Switches

You can use AppSpeed to monitor Cisco Nexus 1000V switches.

Refer to the Nexus documentation for creating a port group and configuring port mirroring.

Prerequisites

You must create a port group for each Nexus 1000V switch that you want AppSpeed to monitor. The port group name must be in the format *<name_of_Nexus_switch>_AppSpeed*, for example, **switch13_AppSpeed**.

Procedure

- 1 Install an AppSpeed probe.
- 2 Configure port mirroring.
 - a On the Cisco Nexus 1000V switch, specify the server ports to monitor as the source ports.
 - b On the Cisco Visual Switch Manager, identify the interface on which the AppSpeed probe was added to the port group (for example, Vethernet1) and specify that interface as the destination port.

The probes are powered on and monitoring the Nexus 1000V switches begins.

Managing SSL Keys

To monitor traffic on HTTPS sites that incorporate SSL protection, you must configure the SSL keys for each endpoint and the IP address and port pair where AppSpeed detects SSL traffic.

AppSpeed supports SSL key monitoring only for HTTPS sites.

This chapter includes the following topics:

- [“View SSL Key Information,”](#) on page 19
- [“Add an SSL Key,”](#) on page 19

View SSL Key Information

You can view the existing SSL key configuration to determine for which endpoints you want to provide an SSL key.

Procedure

- 1 In the AppSpeed menu bar, click **Mapping**.
- 2 In the page selection bar, click **SSL Management**.
- 3 View the secure site endpoints for which AppSpeed cannot monitor traffic without a key.
 - The Pending SSL Endpoints table lists the endpoints for which valid SSL keys are required.
 - The Monitored SSL Endpoints table lists the endpoints for which valid keys exist and AppSpeed is monitoring.

Add an SSL Key

You can assign a key to a pending endpoint to enable AppSpeed to monitor its traffic.

Prerequisites

You must extract the SSL files from the Web server to obtain the key.

Procedure

- 1 In the AppSpeed menu bar, click **Mapping**.
- 2 In the page selection bar, click **SSL Management**.
- 3 In the SSL Pending Endpoints table, select the endpoints and click **Add/Update SSL key**.
- 4 Browse to and open the key file.

The key is assigned to the selected endpoints. The endpoint moves from the SSL Pending Endpoints table to the Monitored Endpoints table.

Using Multiple AppSpeed Servers

You can use multiple AppSpeed Servers to monitor a large environment. When multiple AppSpeed Servers are installed on a single vCenter server, you can centrally manage AppSpeed through a single user interface.

When using multiple AppSpeed Servers, keep in mind the following information regarding licensing and monitoring.

- You can apply your license key to multiple AppSpeed Servers as long as the number of monitored CPUs does not exceed the number of CPUs defined in your license.
- Because the same virtual machine might be monitored by two or more AppSpeed Servers, the licenses are counted accordingly, once for each server. However, only the actual number of CPUs that are being monitored are relevant to your AppSpeed license.
- Topology and monitoring information is not shared between the servers. The same service can be mapped in two or more servers. The monitoring data in the two servers might be different if the two servers detect different traffic. Changes in the configuration of a service in one AppSpeed Server, such as names and thresholds, are not reflected in other AppSpeed Servers.
- One AppSpeed Server can map the management traffic of a different AppSpeed Server as a service.
- When you use the vSphere Client, you cannot connect to AppSpeed Servers that are located on different vCenter Servers in a linked vCenter Server environment. You must use the vSphere Client to log in to each vCenter Server on which AppSpeed Servers are located.

Switch Between AppSpeed Servers

When you activate AppSpeed from a vSphere client on which more than one AppSpeed Server is installed, you can select which server to connect to.

Procedure

- 1 In the vSphere Client, select **Home > Solutions and Applications**.
- 2 Click the AppSpeed Server that you want to run.

The AppSpeed Server user interface opens.

Extracting SSL Files

To obtain the SSL keys, you can extract SSL files from the Web server. The extraction procedure varies according to the type of Web server.

AppSpeed supports Apache, Microsoft IIS 6.0, and Microsoft IIS 7.0 servers.

This chapter includes the following topics:

- [“Extract SSL Files from an Apache Server,”](#) on page 23
- [“Extract SSL Files from a Microsoft IIS 6.0 Server,”](#) on page 23
- [“Extract SSL Files from a Microsoft IIS 7.0 Server,”](#) on page 24

Extract SSL Files from an Apache Server

You can extract the SSL files from an Apache server.

Procedure

- 1 In the Apache `conf` directory, open the `http.conf` file.
The file name depends on the version of Apache Server that you have installed, for example, `/etc/httpd/conf/httpd.conf`.
- 2 Locate the `SSLCertificateKeyFile` command on the SSL site.
- 3 Save a copy of the file that appears under `SSLCertificateKeyFile` as `[cluster].key` and transfer it to the vSphere Client machine.

What to do next

Upload the key file to the AppSpeed Server.

Extract SSL Files from a Microsoft IIS 6.0 Server

You can extract the SSL files from a Microsoft IIS 6.0 server. Files are extracted by exporting the IIS key file.

During the export process, a password is requested to protect the key. If a password is assigned, note this password. The password is required when you import the key into AppSpeed.

Procedure

- 1 Select **Start > Programs > Administrative Tools > Internet Information System (IIS) Manager**.
- 2 Expand the **COMPUTERNAME (local computer)** tree in the left pane, and expand the **Web Site** tree.
- 3 Right-click **Default Web Site** and select **Properties**.
- 4 Select the **Directory Security** tab and click **Server Certificate**.

- 5 Click **Next**, select **Export the current certificate to a PFX file**, and click **Next** again.
- 6 Select a file to write the exported certificate and key to and click **Next**.
- 7 Type the password with which to encrypt the key.
- 8 Re-type the password in the **Confirm Password** text box.
- 9 Click **Finish**.

What to do next

Transfer the PFX file to the vSphere Client machine and upload it to the AppSpeed Server.

Extract SSL Files from a Microsoft IIS 7.0 Server

You can extract the SSL files from a Microsoft IIS 7.0 server. Files are extracted by exporting the IIS key file.

Prerequisites

During the export process, a password is requested to protect the key. If a password is assigned, note this password. The password is required when you import the key into AppSpeed.

Procedure

- 1 Select **Start > Programs > Administrative Tools > Internet Information System (IIS) Manager**.
- 2 Expand the **COMPUTERNAME (local computer)** tree in the left pane, and double-click the **Server Certificates** icon in the middle pane.
- 3 Right-click the certificate and select **Export**.

A PFX file is created.

What to do next

Transfer the PFX file to the vSphere Client machine and upload it to the AppSpeed Server.

Upgrading AppSpeed

You can upgrade AppSpeed Server without deleting the existing installation. After you upgrade AppSpeed, increase the size of the virtual hard disk. When AppSpeed detects that the hard disk is reaching full volume, it shuts down.

Upgrading AppSpeed comprises the following tasks:

- 1 Downloading the ISO file for the upgrade.
- 2 Creating a new virtual hard disk.
- 3 Formatting the new disk.
- 4 Copying the data from the original virtual hard disk to the new disk.
- 5 Removing the original virtual hard disk from the AppSpeed virtual machine and deleting the files.

This chapter includes the following topics:

- [“Upgrade AppSpeed,”](#) on page 25
- [“Increase the Disk Size of an AppSpeed Virtual Machine,”](#) on page 26
- [“Format an AppSpeed Virtual Hard Disk,”](#) on page 26
- [“Delete a Virtual Hard Disk After Copying,”](#) on page 27

Upgrade AppSpeed

You use the ISO image that VMware provides to upgrade AppSpeed. The upgrade process reboots AppSpeed Server and recreates all AppSpeed probes. This might take some time.

You can upgrade AppSpeed without uninstalling the previous version.

NOTE Exchange is not supported after upgrading.

Procedure

- 1 Download the ISO file from the VMware Web site and save it to a location on your local disk.
- 2 In the vSphere Client, connect AppSpeed Server to the ISO file.
 - a Select the AppSpeed Server virtual machine in the vSphere Client inventory tree.
 - b Click the **Connect CD/DVD devices** icon and select **Connect to ISO image on local disk** from the menu.
 - c Browse to the location of the ISO file.
- 3 Log in to the AppSpeed Server console as the console user.

4 From the default console shell, run the command `upgrade_AppSpeed`.

5 Press Enter to run the upgrade script.

After AppSpeed Server boots from the ISO image, it continues the upgrade process, including rebooting and recreating the probes. This process can take up to one hour.

A message appears when the AppSpeed Server upgrade is complete.

6 When prompted, disconnect the ISO file from the AppSpeed Server virtual machine.

The probes are recreated in the new version. You can monitor the redeployment process from the AppSpeed Probes Deployment window.

What to do next

- Increase the disk size of the AppSpeed virtual machine. See [“Increase the Disk Size of an AppSpeed Virtual Machine,”](#) on page 26.
- Verify the deployment of the probes. See [“Verifying Probe Installation,”](#) on page 17.

Increase the Disk Size of an AppSpeed Virtual Machine

When you upgrade AppSpeed, increase the volume of your hard disk to reduce the possibility that the disk becomes full. When the disk is full, the monitoring process stops.

Prerequisites

Power off the AppSpeed virtual machine.

Procedure

1 In the vSphere Client inventory, right-click the AppSpeed virtual machine that you want to modify, and select **Edit Settings**.

The Virtual Machine Properties window appears.

2 In the **Hardware** tab, click **Add**.

3 Select **Hard Disk** and click **Next**.

4 Select **Create a new virtual disk** and click **Next**.

5 Under Capacity, set the disk size to **38 GB** and click **Next**.

6 Click **Next**, and in the Ready to Complete screen, click **Finish**.

A new virtual hard disk is created.

7 Click **OK**.

The virtual machine is reconfigured.

What to do next

Format the new virtual hard disk, and copy the contents of the original disk to the new disk. See [“Format an AppSpeed Virtual Hard Disk,”](#) on page 26.

Format an AppSpeed Virtual Hard Disk

After you create an AppSpeed virtual hard disk, you must format it and copy the contents of the original virtual hard disk to the new one.

Prerequisites

Create a new virtual hard disk.

Procedure

- 1 Power on the AppSpeed virtual machine.
- 2 At the login prompt in the vSphere Client console, type **console**.
- 3 Type **stop_appspeed**.
- 4 Type **copy_appspeed_data_disk**.

AppSpeed copies the data from the original virtual hard disk to the new virtual hard disk. During the process, error messages might appear. You can ignore these messages, unless the copy process stops before completion.

A success message appears when the formatting is complete.

The new virtual hard disk includes the information that was on the original disk.

What to do next

Delete the original virtual hard disk. See [“Delete a Virtual Hard Disk After Copying,”](#) on page 27.

Delete a Virtual Hard Disk After Copying

After you have copied the contents of the original virtual hard disk to the new virtual hard disk, you must remove the original disk from the AppSpeed virtual machine and delete the files.

Prerequisites

Copy the contents of the original virtual hard disk to a new virtual hard disk.

Procedure

- 1 Shut down the AppSpeed virtual machine.
- 2 Right-click the AppSpeed virtual machine in the vSphere Client inventory and select **Edit Settings**.
The Virtual Machine Properties window appears.
- 3 In the **Hardware** tab, select **Hard disk 2** and click **Remove**.
- 4 Select **Remove from virtual machine and delete files from disk**, and click **OK**.
The virtual machine is reconfigured.
- 5 After the reconfiguration process is finished, power on the virtual machine.

The new virtual hard disk has been renamed **Hard disk 2**.

The original virtual hard disk is deleted and the AppSpeed virtual machine uses the new, larger virtual hard disk.

Uninstall AppSpeed

To completely remove AppSpeed from your system, you must delete AppSpeed probes, uninstall AppSpeed, and remove AppSpeed users.

Procedure

- 1 In the AppSpeed menu bar, click **Administration**.
- 2 In the page selection bar, click **Deployment**.
- 3 Delete all probes by selecting the check boxes and clicking **Delete Probe**.
- 4 (Optional) If some probes remain, delete them from the vSphere Client.
 - a Power off the virtual machine.
 - b Right-click the machine name and select **Delete from Disk**.
- 5 Delete the promiscuous port groups created by AppSpeed.
 - a In the vSphere Client, select a host that has a probe installed, click the **Configuration** tab, and click the **Networking** link.
 - b For each vSwitch, delete any port groups called `vSwitch n AppSpeed`, where *n* is a unique number for the vSwitch name.
 - c Repeat this process for each host on which a probe is installed.
- 6 In the vSphere Client, select **Home > Inventory > VMs and Templates** and delete the `<namespace> Probes` folder from each datacenter in which it exists.
- 7 Unregister the AppSpeed Server from vCenter.
 - a In the vSphere Client, open the AppSpeed Server console.
 - b Type `stop_appspeed`.
 - c Type `unregister`.
 - d Restart the vSphere Client.
- 8 Delete the virtual machine on which AppSpeed Server was deployed from the vSphere Client.
 - a Power off the virtual machine.
 - b Right-click the machine name and select **Delete from Disk**.
- 9 Select **Home > Administration > Roles** and remove **AppSpeed User** privileges and the **AppSpeed User** role.

Troubleshooting AppSpeed Installation and Deployment

9

If you encounter problems when installing and deploying AppSpeed, use this troubleshooting information.

This chapter includes the following topics:

- [“AppSpeed Setup Errors,”](#) on page 31
- [“Navigation to Web Page Cancelled,”](#) on page 32
- [“AppSpeed View Does Not Load,”](#) on page 33
- [“Unable to Connect to AppSpeed,”](#) on page 33
- [“AppSpeed Server Namespace Is Not Recognized,”](#) on page 34

AppSpeed Setup Errors

You might have problems while setting up AppSpeed.

- [Failed to Register AppSpeed with vCenter Server](#) on page 31
You are unable to register AppSpeed with vCenter Server.
- [vCenter Server HTTPS Web Service Port Does Not Work with Port 443](#) on page 32
You are unable to complete setup because the vCenter Server HTTPS Web service is not working.
- [vCenter Server HTTPS Web Service Port Traffic Is Blocked](#) on page 32
You are unable to complete setup because the vCenter Server HTTPS Web service is not working.

Failed to Register AppSpeed with vCenter Server

You are unable to register AppSpeed with vCenter Server.

Problem

Setup fails and an error message appears.

Failed to register AppSpeed with vCenter Server:
Unable to find AppSpeed Server on the configured vCenter Server.

Cause

You entered the IP address of a vCenter Server that is not the server on which AppSpeed was installed.

Solution

- 1 Verify the vCenter Server IP address.
- 2 Run setup again and enter the correct IP address.

vCenter Server HTTPS Web Service Port Does Not Work with Port 443

You are unable to complete setup because the vCenter Server HTTPS Web service is not working.

Problem

Setup fails and an error message appears.

Connection timed out. Verify the vCenter address and try again.

Cause

The vCenter Server HTTPS Web service port is not configured to work with the default port 443.

Solution

- 1 Check the vCenter Server Web service port.
- 2 Run setup again, and type `<vCenter_IP>: <HTTPS_Port>` in the vCenter parameters section.

vCenter Server HTTPS Web Service Port Traffic Is Blocked

You are unable to complete setup because the vCenter Server HTTPS Web service is not working.

Problem

Setup fails and an error message appears.

Connection timed out. Verify the vCenter address and try again.

Cause

The vCenter Server HTTPS Web service port is blocked to traffic between AppSpeed Server and vCenter Server.

Solution

- 1 Verify with IT that the vCenter Server HTTPS Web service port on the firewall is open between AppSpeed Server and vCenter Server.
- 2 Run setup again.
- 3 (Optional) If the problem persists, complete the following steps.
 - a As the console user, log in to the AppSpeed Server virtual machine and run `shell`.
 - b Use Telnet to access the vCenter Server IP with the vCenter Server HTTPS Web service configured to port 443 to verify that the port is open.

Navigation to Web Page Cancelled

You cannot load the AppSpeed user interface.

Problem

After you click the `<AppSpeed_namespace>` icon in the vSphere Client from **Home > Inventory > Solutions and Applications**, the following error message appears:

Navigation to the web page was cancelled.

Cause

The AppSpeed Server is not running.

Solution

- 1 In the vSphere Client, log in again to the virtual machine.
- 2 Click **Refresh** in the error message Web page.

AppSpeed View Does Not Load

You cannot load the AppSpeed view.

Problem

Clicking the AppSpeed icon in the vSphere Client does not load the AppSpeed view.

Cause

A connection to AppSpeed Server cannot be established or proxy settings are incorrect. This type of error is usually preceded by one of the following messages:

Received a connectivity error.

URL Error received.

Solution

- 1 Verify with IT that port 80 is open on the firewall.
- 2 Restart the vSphere Client.
- 3 Wait a few minutes for the AppSpeed user interface to load.
- 4 If the user interface still does not load, reinstall the user interface from the plug-in window.

NOTE You do not have to uninstall the user interface before reinstallation.

Unable to Connect to AppSpeed

The user interface is unable to communicate with AppSpeed Server.

Problem

The user interface cannot connect to AppSpeed.

Cause

Storage used by AppSpeed Server was disconnected, causing the file system to respond as a read-only file system.

To verify the cause, log in to the console on the AppSpeed virtual machine and run commands such as `start_AppSpeed` or `restart_AppSpeed`. If the file system is read-only, you receive a message similar to the following:

```
OS Error: [Error 30] Read-only file system: 'twistd.pid'
```

Solution

- 1 Validate that the storage is running.
- 2 From the vSphere Client, reboot the AppSpeed Server virtual machine to reinitialize the file system.

AppSpeed Server Namespace Is Not Recognized

When attempting to connect to the AppSpeed user interface, the namespace that you specify is not recognized.

Problem

When specifying the namespace of AppSpeed Server, an error message is returned.

Cause

You entered an incorrect namespace

Solution

- 1 In the vSphere Client, log in to AppSpeed Server as console.
- 2 Run the `show_namespace` command.

The command returns the namespace value that was specified during setup or through vCenter settings.

- 3 Use the namespace value to connect to the AppSpeed user interface.

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