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About This Document

This guide provides the following information about VMware HealthAnalyzer:

- Installation and configuration instructions.
- Instructions on creating new folders and projects, collecting data, working with a project, and defining and generating a Health Check Report.

The contents of this document are also available from the Help link in the VMware HealthAnalyzer user interface.

Intended Audience

This information is intended for use only by VMware Professional Services consultants and VMware partners who have a current Services Software Solutions subscription.

Support, Feedback and Questions

Contact services-software-support@vmware.com if you have questions, require support, or have suggestions for improving the VMware HealthAnalyzer documentation.
1. **Introducing VMware HealthAnalyzer**

VMware HealthAnalyzer automates the collection and analysis of VMware Horizon® and VMware vSphere® inventory, including configuration and utilization data.

### 1.1 Overview

VMware HealthAnalyzer analyzes View, vSphere, and VMware NSX® for vSphere inventory data, creates findings and observations, recommends grades, and allows you to edit grades and observations according to data categorized by Health Check best practices. Use the VMware HealthAnalyzer web user interface to review collected data and generate a Health Check Report for your customer.

The data collected by VMware HealthAnalyzer is categorized by best practices and presented in a project.

**Figure 1. VMware HealthAnalyzer Processing**

VMware HealthAnalyzer provides consistent, scalable data collection:

- **vSphere** – Data can be collected from a specified VMware vCenter Server® and other systems within the vSphere infrastructure.
- **Horizon** – Data for analysis of desktop systems can be captured from a View Connection Server and all of the systems with related data within the vSphere infrastructure.
- **NSX for vSphere** – Data can be collected from VMware NSX Manager™ (standalone or Cross-vCenter setup) and VMware NSX Controller™ instances.

A project with data can be exported to a file, or a previously captured project with data can be imported. A report in Microsoft Word format can be created for review and delivery to a customer.

### 1.2 Security

To collect VMware vCenter® data, VMware HealthAnalyzer connects to vCenter Server over port 443 using the VMware API. To collect data from View, VMware HealthAnalyzer uses a proprietary protocol over port 443. To collect data from VMware NSX, VMware HealthAnalyzer uses REST API to collect data from NSX Manager and SSH protocol to collect data from NSX Controller instances.
During data collection, the communication between VMware HealthAnalyzer and the target servers is secured with HTTPS (HTTP over SSL, default port 443). For the VMware HealthAnalyzer virtual appliance, data is stored in a local database protected by VMDK file system security. For the VMware HealthAnalyzer application, the file is protected by default Windows or Mac security. VMware HealthAnalyzer collects only general inventory, configuration, and some utilization information.

VMware HealthAnalyzer requires only read-only permission for vCenter, read-only administrator for the View Connection Server, and read-only administrator permission for NSX Manager and NSX Controller for data collection, so consultants or administrators can use the inherent security and authorization feature to create an account without compromising the security of the customer’s vSphere, View, and NSX environments. VMware HealthAnalyzer does not store the password of the read-only account or any customer account.

VMware HealthAnalyzer uses the following ports.

**Table 1. VMware HealthAnalyzer Network Ports**

<table>
<thead>
<tr>
<th>Port</th>
<th>Protocol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>SSH</td>
<td>Inbound TCP port that is used by an administrator to log in to the VMware HealthAnalyzer virtual appliance to perform maintenance tasks. This port is not used by the VMware HealthAnalyzer application.</td>
</tr>
<tr>
<td>443</td>
<td>HTTPS</td>
<td>Outbound TCP port that is used by VMware HealthAnalyzer to retrieve data from the customer’s vCenter Server. This port is specified when configuring VMware HealthAnalyzer to retrieve data and might be different depending on the customer’s environment.</td>
</tr>
<tr>
<td>8080</td>
<td>HTTP</td>
<td>Inbound TCP port that is used by the VMware HealthAnalyzer user interface.</td>
</tr>
<tr>
<td>80 and 8080</td>
<td>HTTP</td>
<td>Both inbound TCP ports are used by the VMware HealthAnalyzer virtual appliance user interface.</td>
</tr>
<tr>
<td>41984</td>
<td></td>
<td>Port used for the VMware HealthAnalyzer database.</td>
</tr>
<tr>
<td>41985</td>
<td></td>
<td>Port used for VMware HealthAnalyzer database event service.</td>
</tr>
<tr>
<td>5480</td>
<td>HTTPS</td>
<td>Inbound TCP port used to access the VMware HealthAnalyzer virtual appliance management web interface from a web browser.</td>
</tr>
</tbody>
</table>
2. Installing and Configuring VMware HealthAnalyzer

The following sections describe how to install and configure VMware HealthAnalyzer.

2.1 System Requirements

VMware HealthAnalyzer is available as a Java application or as a virtual appliance. The VMware HealthAnalyzer user interface uses HTML and JavaScript, and is accessed through a web browser. Before installing VMware HealthAnalyzer, confirm that the following system requirements are satisfied.

- Platform options:
  - Use Microsoft Windows Server (2008 or later), Windows (7 or later) or Apple Mac (Lion, Mountain Lion, Mavericks, Yosemite, El Capitan, or Sierra).
  - Directly import and power on the OVA file containing the VMware HealthAnalyzer virtual appliance using the VMware vSphere Client™ (4.0 or later), VMware Workstation™ (9 or later), or VMware Fusion® (5 or later).

- At least 3 GB RAM.
- JRE 1.7 (JRE 1.8 64-bit is recommended)

Note: Do not run HealthAnalyzer on the same machine that runs vCenter.

2.2 Installing and Configuring VMware HealthAnalyzer

Before installing VMware HealthAnalyzer, verify that you have satisfied all of the system requirements and review the VMware HealthAnalyzer Release Notes for information that might affect your installation.

2.2.1 Downloading the VMware HealthAnalyzer Installation Package

VMware consultants can download VMware HealthAnalyzer and associated materials from VM Vault. Search for VMware HealthAnalyzer and follow the on-screen instructions to download.

VMware partners who have a current Services Software Solutions subscription can download VMware HealthAnalyzer and associated materials from Partner Central.

To download VMware HealthAnalyzer software and documentation from Partner Central

1. Log in to Partner Central.
2. Click the Sales tab.
3. Scroll down to Grow Your Consulting Practice.
4. Click Services Software Solutions.
5. Scroll to the VMware HealthAnalyzer section.
6. In the Software Download section, click the link to the software package that you want to install and follow the on-screen instructions.

2.2.2 Installing the VMware HealthAnalyzer Application

The high-level steps required to install the VMware HealthAnalyzer application and display the VMware HealthAnalyzer user interface are shown in the following figure.

Note: If you have any trouble completing the installation steps, examine the files in the logs folder within the installation folder. If you still have trouble, contact Support.
Figure 2. VMware HealthAnalyzer Application Installation Workflow

To install and open the VMware HealthAnalyzer application

1. Download the VMware HealthAnalyzer application installation file.
2. Unzip the installation package, and open the folder containing the unzipped files. Avoid placing the unzipped package in a folder with a long path name or with special characters.
3. Double-click HealthAnalyzer.jar.
4. The VMware HealthAnalyzer launcher application opens. After both the App Server and the Database Server are running, click Connect to start the VMware HealthAnalyzer user interface in a web browser. Review and accept the end user license agreement, if prompted.
2.2.3 Installing the VMware HealthAnalyzer Virtual Appliance

The high-level steps required to install the VMware HealthAnalyzer virtual appliance and display the user interface are shown in the following figure.

Figure 3. VMware HealthAnalyzer Virtual Appliance Installation Workflow

2.2.3.1. Installing the Virtual Appliance OVA File

To install the virtual appliance OVA File
1. Download the VMware HealthAnalyzer virtual appliance installation file.
2. Unzip the installation directory file.
3. Import the OVA file using the vSphere Client (4.0 or later), Workstation (9 or later), or VMware Fusion (5 or later).
4. Power on the virtual appliance.

The virtual appliance must continue to run until you are finished using the VMware HealthAnalyzer user interface. You can minimize its window or run the process in the background.

2.2.3.2. Using the Virtual Appliance Web Console

The VMware HealthAnalyzer virtual appliance provides a web console management user interface. This is the standard Web console for virtual appliances and vApps generated using VMware Studio. Instead of using the command line, you can use the web console to perform tasks such as reboot, shutdown, setting the system time zone, finding or changing the appliance IP address, and changing network or proxy settings.

2.2.3.3. Logging in to the Virtual Appliance

To log in to the virtual appliance web console
1. Open your browser and go to https://<virtual appliance IP address>:5480.
2. User name is root and Password is vmware.

If you cannot access the appliance web console, check proxy settings between the appliance and the browser. See Section 2.2.5, Changing Browser Proxy Settings.

To log in to the virtual appliance command-line interface
1. At the login prompt, type root and press Enter.
2. For password, type vmware and press Enter.

To maintain security, change the password immediately after logging in for the first time.

2.2.3.4. Finding the Virtual Appliance IP Address

You need to know the virtual appliance IP address to display the VMware HealthAnalyzer user interface or the virtual appliance web console.
To display the virtual appliance IP address from the vSphere Client
1. Power on the virtual appliance.
2. Open the vSphere Client.
3. Click the Summary or Console tab to display the IP address.

To display the virtual appliance IP address from Workstation
1. Power on the virtual appliance.
2. The IP address is displayed as the virtual appliance starts.

To display the virtual appliance IP address from the command-line
Type `ifconfig` at an appliance command-line prompt. Use the eth0 inet address.

### 2.2.3.5. Configuring the Virtual Appliance to use a Static IP Address
By default, the virtual appliance is configured to use DHCP, but you can configure it to use a static IP address.

**To configure a static IP address from the web console**
1. Open the VMware HealthAnalyzer virtual appliance web console.
2. Click the Network tab, and click Address.
3. Select Use the following IP settings.
4. Enter the IP address and other network parameters (Netmask, Gateway, Preferred DNS Server, Alternate DNS Server, Hostname) and click Save Settings.

### 2.2.3.6. Changing Virtual Appliance Proxy Settings
If there is a proxy server set up between the virtual appliance and the internet or vCenter, configure the virtual appliance to use the proxy server.

**To configure the proxy**
1. Open the VMware HealthAnalyzer virtual appliance web console.
2. Click the Network tab.
3. Click Proxy.
4. Select Use a Proxy Server.
5. Enter the information about the proxy server:
   - **Proxy Server** – Enter the IP address or fully qualified domain name of the proxy server.
   - **Proxy Port** – Enter the port used by the proxy server.
6. Click Save Settings.

### 2.2.4 Changing the Tomcat Process Memory
You can change the amount of memory allocated to the Tomcat process for VMware HealthAnalyzer. You might need to increase the amount of memory allocated if you are using VMware HealthAnalyzer in a large environment. The procedure differs depending on whether you are using the VMware HealthAnalyzer virtual appliance or the Java application.

**To change the amount of Tomcat memory with a virtual appliance**
1. Log in to the virtual appliance using the user `root` and password `vmware`.

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2. Open the configuration file using `vi` or another text editor:
   ```
   vi /usr/share/vha/tomcat/conf/vha-tomcat-memory
   ```
3. Locate the default value of 2048 and change it to your desired value. This is the amount of memory allocated to Tomcat in megabytes.
4. Restart the appliance with the following command:
   ```
   shutdown -r now
   ```
5. You can confirm that the memory value changed by issuing the following command and reviewing the argument `–Xmx`.
   ```
   ps -ef | grep catalina
   ```

**To change the amount of Tomcat memory using the Java application**

1. Quit the VMware HealthAnalyzer Java application.
2. Go to the directory where the VMware HealthAnalyzer Java application was unzipped.
3. Open the configuration file using a text or XML editor:
   ```
   <unzipped location>/resources/applicationContext.xml
   ```
4. Locate the `util:map` XML section that contains memory settings by searching for `vha-start`.
   Change the `–Xmx` value to the desired value. For example, to change the Tomcat memory to 1024 MB, change the XML as follows:
   ```
   <util:map id="vha-start" map-class="java.util.LinkedHashMap">
     <entry key="java" value="" />
     <entry key="-Xmx1024m" value="" />
   </util:map>
   ```
5. Save the file, and start the VMware HealthAnalyzer Java application.

### 2.2.5 Changing Browser Proxy Settings

Your customer might use proxies as part of their corporate firewall. A proxy server acts as an intermediary between a client computer and the internet by intercepting requests and contacting the target server to make the request on behalf of the client. Proxies offer fast access to cached content, filter content, and hide computers from the Internet to improve security.

However, a proxy server will also prevent the VMware HealthAnalyzer user interface from accessing the appliance because it does not recognize that the appliance is running locally. If you are running the VMware HealthAnalyzer on a LAN that runs behind a proxy server, you probably need to change the proxy settings before you can display the VMware HealthAnalyzer user interface. VMware recommends that you bypass the proxy by configuring your browser proxy settings to add the VMware HealthAnalyzer virtual appliance to the list of addresses that do not use a proxy.

If there is no proxy server, ignore these procedures.

**To change proxy settings for Firefox**

1. Start your Firefox browser.
2. Click **Tools > Options**.
3. Click the **Network** tab.
4. Click **Settings**.
5. Select **Manual proxy configuration** if it is not already selected.
6. In the **No proxy for** text box, type a comma delimiter followed by the appliance IP address.
7. Click **OK** in each dialog box until you have exited.

**To change proxy settings for Internet Explorer**

1. Start your Internet Explorer browser.
2. Click **Tools > Internet Options**.
3. Click the **Connections** tab.
4. Click **LAN Settings**.
5. Click **Advanced**.
6. In the text box labeled **Do not use proxy server for addresses beginning with**, type a semicolon delimiter after any existing entries, followed by the appliance IP address.
7. Click **OK** in each dialog box until you have exited.

### 2.2.6 Displaying the VMware HealthAnalyzer User Interface

All project setup, data review, analysis, and reporting is performed using the VMware HealthAnalyzer user interface. The first time you display the user interface you might be asked to agree to the EULA.

**To display the VMware HealthAnalyzer user interface using the VMware HealthAnalyzer application**

1. Start your browser.
2. Enter the URL as `http://localhost:8080`.

If you cannot access the user interface, check the browser proxy settings and verify that there is no port conflict with another application. Verify that both the application server and database server start. If you have any trouble accessing the user interface, examine the files in the `logs` folder within the installation folder to see if there are any port conflicts with another application.

**To display the VMware HealthAnalyzer user interface using the VMware HealthAnalyzer virtual appliance**

1. Start your browser.
2. Enter the URL as `http://<virtual appliance IP address>`.

### 2.2.6.1 Port Settings

The VMware HealthAnalyzer virtual appliance uses port 80 and 8080. It is not necessary to specify the port number with the URL. Port conflicts are unlikely because all processes that run are known in advance, but if you do not want to use default ports 80 or 8080, change the port numbers using one of the procedures given in the following sections.

For the user interface, it is not necessary to specify the port number with the URL. Port conflicts are unlikely because all processes that run are known in advance. Follow this procedure if you need to change the port used by the VMware HealthAnalyzer application.
To change the port used by the VMware HealthAnalyzer application
1. Start the VMware HealthAnalyzer Java application.
2. Click the disclosure triangle to the left of App Server or Database Server to reveal the port number.

3. Click Stop.
4. Enter the desired port values.
5. Click Save.
6. Click Start.

To change the port used by the VMware HealthAnalyzer virtual appliance
1. Log in to the virtual appliance.
2. From the virtual appliance command line interface, run the following command as root using your own password:
   ```
   sudo -s
   ```
3. **Edit** `/usr/share/vha/tomcat/conf/Server.xml` and change
   ```
   Connector port="8080"
   ```
   to
   ```
   Connector port="x"
   ```
   where x is the new port number.
4. Save and close the file.
5. Reboot the virtual appliance.
2.2.7 Shutting Down VMware HealthAnalyzer

When you are finished working with VMware HealthAnalyzer, close the browser and perform a graceful shutdown. The procedure for shutting down depends on whether you are using the VMware HealthAnalyzer application or the virtual appliance.

2.2.7.1. Shutting Down the VMware HealthAnalyzer Application

To shut down VMware HealthAnalyzer, click Quit.

2.2.7.2. Shutting Down the VMware HealthAnalyzer Virtual Appliance

To shut down the VMware HealthAnalyzer virtual appliance from the web console
1. Open the VMware HealthAnalyzer virtual appliance web console.
2. Click the System tab (this is default).
3. Click Information (this is default).
4. Click Shutdown.

To shut down the VMware HealthAnalyzer virtual appliance from the command line
1. Log in to the virtual appliance.
2. From the virtual appliance command-line interface, if you are not already running as the root user, run the following command as root using your own password:
   ```
   sudo -s
   ```
3. Type shutdown -h now and press Enter.

2.2.8 Uninstalling VMware HealthAnalyzer

If VMware HealthAnalyzer is installed on a customer machine, remove the installation folder and all associated files at the end of the engagement. Do not leave it behind at the customer site.
3. Working with VMware HealthAnalyzer

VMware HealthAnalyzer provides consistent, scalable data collection from vSphere, View, or NSX environments.

3.1 Setting Up Access to vCenter Server, View Connection Server, NSX Manager and NSX Controller

Although you could use the customer’s administrator account to access the target systems and collect data, it is a best practice to restrict use of the administrator account. The preferred approach is to ask the customer’s administrator to set up user accounts on the target vCenter Server and View Connection Server with limited permissions sufficient to collect data.

Set up an account on vCenter Server

1. Set up an account with read-only privileges for all objects.
2. To collect iSCSI manager data, add Host > Configuration > Storage partition configuration privileges.
3. To collect storage policy data, add **Profile-driven storage > Profile-driven storage view** privileges.

4. If you are not able to change the **Profile-driven storage view** or **Storage** partition configuration privileges, iSCSI and VM storage profile collection can be turned off by updating the following file in VMware HealthAnalyzer:

   `<VHA_Instance>/tomcat/tomcat/webapps/vha/WEB-INF/classes/vha.properties`

   Set the following properties to **false** and then restart the HealthAnalyzer instance:

   collection.iscsiport.enabled
   collection.storagepolicies.enabled
Set up an account on the target View Connection Server

1. Log in to the View Connection Server administration user interface.
2. Select View Configuration > Administrators > Add User or Group to start the wizard.
3. Click Add.
4. In the Find User or Group dialog box, select a user to change and click OK.
5. In the **Add Administrator Or Permission** wizard, select the administrator and click **Next**.

6. Verify that the **Administrators (Read only)** role is marked **Yes** and click **Next**.
7. Select **Root** and click **Finish**.

8. Select the user or group added in earlier step and click **Add Permission**.

9. In the **Add Permission** dialog box, select **Global Configuration and Policy Administrators (Read only)** role and click **Finish**.
The selected user is shown with **Administrators (Read only)** and **Global Configuration and Policy Administrators (Read only)** roles.

### Set up an account on the target NSX Manager

1. Log in to the VMware vSphere Web Client user interface.
2. Select **Networking & Security > NSX Managers > <NSX Manager>**.
3. Select **Manager > Users**.
4. Click **+** to add a new user.
5. Select **Specify a vCenter user** and type in the vCenter user in the **User** field.

6. Click on **Next**.

7. Select **NSX Administrator** under **Select Roles** and click on **Finish**.
Setup an account on the target NSX Controller

Use the default administrative account of the NSX Controller and make sure SSH port (22) is open on NSX Controller VM for data collection from VMware HealthAnalyzer.

3.2 Using the Project Explorer

Use the Project Explorer to create and manage folders and projects.

The Project Explorer opens when you start VMware HealthAnalyzer. Initially, the list of folders is empty. From other VMware HealthAnalyzer screens, click **Project Explorer** to return to the Project Explorer. In the following figure, an existing folder (Company A) is selected, and associated information is displayed in the right pane.

**Figure 4. Project Explorer**

3.2.1 Managing Folders

Folders are used to contain and organize projects. Each project must be created in a folder, and each folder can contain one or more projects.

**Note** You must create a folder before you can create a new project.

**To create a new folder**

1. Click **New Folder**.
2. Enter a folder name and optionally a description.

3. Click **OK**.

**To edit the information for a folder**

1. Click the name of a folder to select it.

2. Click **Edit** to open the **Edit Folder** dialog box.

3. Change the folder name or description, and click **OK**.
To delete a folder
Deleting a folder also deletes all projects within that folder, and all data and reports associated with those projects.
1. Click the name of a folder to select it.
2. Click Delete.
3. Click Yes to confirm the action.

3.2.2 Creating a New Project and Starting to Collect Data
Create a project to begin the process of collecting data. After data is collected, you can review best practices, assign grades, and create a report. These activities take place within a project.

The procedure differs according to whether you are collecting data from vSphere, View, or NSX:
- vSphere – The initial discovery phase identifies the data centers and clusters that are available for data collection. You are given the option of filtering out any data centers or clusters that you do not want to include. The collection phase then collects data for the selected items.
- View – You first identify and collect information from a View Connection Server, and then identify one or more vCenter Server instances from which to collect detailed data.

To create a new project for vSphere data collection and start collecting data
1. Click the VMware HealthAnalyzer folder where you want to create a new project.
2. Click New Project to create a new project within the folder. The Create Project dialog box appears.
3. Select **vSphere (5.x)** or **vSphere (6.x)** as the project type. This selection determines the best practices catalog that will be used.
   - For vSphere 5.x, Service Kit R1.2 is used.
   - For vSphere 6.x, Service Kit 2.0.1 is used.

![Create Project Window]

4. Type a project name for the new project, and optionally a description and customer name. Click **OK**.

   The **VMware vCenter Info** tab of the project panel appears. This is where you supply information for the vCenter Server that will be the source for data collection. For vSphere 4.x, specify the vCenter Server host name or IP address, the user name of the read-only user account you created earlier, and the password. For more information, see Section, 3.1, Setting Up Access to vCenter Server, View Connection Server.

   ![VMware vCenter Info Tab]
For vSphere 5.x, also specify the single sign-on (SSO) server.

5. Type the host name or IP address of the vCenter Server.

**Note** If you use a host name, first confirm that it can be pinged from the network. If you cannot access the server using a DNS name, use an IP address. If the target server is configured to use HTTP, you must explicitly add an HTTP prefix (for example, http://10.12.20.143).

6. Type the login credentials for the vCenter Server in the **User** and **Password** fields. You can include a domain name in the **User** field by using the domain\user format.

7. Click **Next**.

VMware HealthAnalyzer now collects data from the specified vCenter Server. During data collection, VMware HealthAnalyzer reports its progress with messages such as the following:

- Initiating connection
- Collecting VM inventory
- Collecting vCenter references
- Collecting connection server references
- Collecting datastore inventory
- Collecting pool inventory
- Collecting desktop inventory
8. If the data collection process takes a long time without updating the progress information, and you believe there is a problem, try to cancel the collection from the UI. Look for any collection-related errors in the logs/vha.log file in the unzipped installation folder.

9. When data collection is complete, the **VMware vCenter Discovery** tab appears. The tab lists the vCenter Server with the data centers and clusters that were discovered during data collection. Click the arrow to expand the list. If there are any data centers or clusters that you do not want to include in your analysis, deselect them.

![Image of VMware vCenter Discovery tab]

A note on the page indicates that VMware HealthAnalyzer might require additional memory when collecting from a large environment. Click the i icon to display additional information about memory configuration.

![Image of additional memory note]

10. Click **Next** to start collecting data from all of the specified systems. During data collection, VMware HealthAnalyzer reports its progress with messages such as the following:
- Initiating connection
- Collecting inventory for Datacenter[…]
- Collecting HostSystem[…]
- Collecting VirtualMachine[…]
- Collecting Folder[…]
- Collecting ResourcePool[…]
- Collecting Datastore[…]
- Collecting DistributedVirtualPortGroup[…]
- Processing collected data
- Dataset processed successfully

11. If the data collection process takes a long time without updating the progress information, and you believe there is a problem, try to cancel the collection from the UI. Look for any collection related errors in the `logs/vha.log` file in the unzipped installation folder.

When the data collection is complete, the Workbench opens with information about the collected data and associated best practices. You can open the Workbench from the Project Explorer at any time by selecting the project and clicking **Open** or double-clicking the project name.
To create a new project for View data collection and start collecting data

1. Click the VMware HealthAnalyzer folder where you want to create a new project.
2. Click **New Project** to create a new project within the folder. The **Create Project** dialog box appears.

3. Select **View (5.x/6.x/7.x) - Service Kit R3.0** as the project type.
4. Type a project name for the new project, and optionally a description and customer name.
5. Click **OK**.

The **VMware View Info** tab of the project panel appears. This is where you supply the information for the View Connection Server.

6. Type the host name or IP address of the **View Connection Server**.
Note If you use a host name, first confirm that it can be pinged from the network. If you cannot access the server using a DNS name, use an IP address. If the target server is configured to use HTTP, you must explicitly prefix target server with the HTTP (for example, http://10.12.20.143).

7. Type the login credentials for the View Connection Server in the User and Password fields. You can include a domain name in the User field by using the domain\user format.

8. Click Next.

VMware HealthAnalyzer now collects data from the specified View Connection Server. During data collection, VMware HealthAnalyzer reports its progress with messages such as the following:

- Initiating connection
- Collecting VM inventory
- Collecting vCenter references
- Collecting connection server references
- Collecting datastore inventory
- Collecting pool inventory
- Collecting desktop inventory

9. The VMware vCenter Info tab appears. Supply information about one or more vCenter Server instances and specify the SSO server.

10. Type the host name or IP address of a vCenter Server.

If the target server is not configured to use the default HTTPS port 443, you must also specify the port (for example, 10.12.30.143:8089 or https://10.12.20.143:8089/sdk). If you use a host name, first confirm that it can be pinged from the network. If you cannot access the server using a DNS name, use an IP address.

11. (Optional) To add an additional vCenter Server, click Add vCenter.
If View infrastructure machines such as View Connection Servers, View security servers, View transfer servers, View Composer servers, and vCenter Server instances hosting View desktops are virtual machines, enter all vCenter Server systems that host these virtual machines. If all vCenter Server systems are not included, manual analysis must be performed for several best practices that rely on this data.

12. After supplying information for all vCenter Server instances, click Next to start collecting data from all of the specified systems. During data collection, VMware HealthAnalyzer reports its progress with messages such as the following:
   - Initiating connection
   - Collecting inventory for Datacenter[…]
   - Collecting HostSystem[…]
   - Collecting VirtualMachine[…]
   - Collecting Folder[…]
   - Collecting ResourcePool[…]
   - Collecting Datastore[…]
   - Collecting DistributedVirtualPortGroup[…]
   - Processing collected data
   - Dataset processed successfully

13. If the data collection process takes a long time without updating the progress information, and you believe there is a problem, try to cancel the collection from the UI. Look for any collection-related errors in the logs/vha.log file in the unzipped installation folder.

When the data collection is complete, the Workbench appears with information about the best practices associated with View, and the project’s data collected from the View Connection Server instances and related vCenter Server installations. You can open the Workbench from the Project Explorer at any time by selecting the project and clicking Open or double-clicking the project name.
To create a new project for NSX data collection and start collecting data

1. Click the VMware HealthAnalyzer folder where you want to create a new project.
2. Click **New Project** to create a new project within the folder. The **Create Project** dialog box appears.

3. Select **NSX (6.x) - Service Kit R1.0 – Tech Preview** as the project type.
4. Type a project name for the new project, and optionally a description and customer name.
5. Click **OK**. Accept the Tech Preview disclaimer to continue by clicking on **OK**.
The **NSX Manager Info** tab of the project panel appears. This is where you supply the information for the NSX Manager. For Cross-vCenter setup, additional NSX Manager instances could be added by clicking on **Add NSX Manager**.

6. Type the host name or IP address of the **NSX Manager**.

   **Note** If you use a host name, first confirm that it can be pinged from the network. If you cannot access the server using a DNS name, use an IP address.

7. Type the login credentials for the NSX Manager in the **User** and **Password** fields. You can include a domain name in the **User** field by using the domain\user format.

8. Click **Next**.

   VMware HealthAnalyzer now collects data from the specified NSX Manager. During data collection, VMware HealthAnalyzer reports its progress with messages such as the following:

   - Initiating connection
   - Collecting NSX Manager vCenter Info
   - Collecting NSX Edge list info
   - Collecting NSX Cluster List info
   - Collecting High Availability configuration for Edge […]
   - Collecting NSX Host List for cluster […]
   - Collecting Storage information for NSX Edge VM […]
   - Collecting NSX Manager Communication Channel Health
   - Collecting Health Status for ESX Host […]
   - Collecting NSX VM list for ESX Host […]

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9. The NSX Controller Info tab appears. Supply password information about one or more NSX Controller instances as set up with NSX Manager.

10. After supplying information for all NSX Controller instances, click **Next** to start collecting data from all of the specified systems. During data collection, VMware HealthAnalyzer reports its progress with messages such as the following:

- Initiating connection
- Collecting VTEP Table information for VNI […]
- Collecting Control Cluster configuration information for VNI Id […]
- Collecting Host Connection Table information for VNI […]
- Dataset processed successfully

11. If the data collection process takes a long time without updating the progress information, and you believe there is a problem, try to cancel the collection from the UI. Look for any collection-related errors in the **logs/vha.log** file in the unzipped installation folder.
When the data collection is complete, the Workbench appears with information about the best practices associated with NSX, and the project’s data collected from the NSX Manager and NSX Controller instances. You can open the Workbench from the Project Explorer at any time by selecting the project and clicking **Open** or double-clicking the project name.
3.2.3 Managing Projects

This section describes the project actions that are available in the Project Explorer.

To open a project to view best practice data, assign grades, or create a report

Open a project in either of these ways:

- Click the name of the project and click **Open**. The project summary and inventory details are displayed.

- Double-click the project name, or select the project and click **Open**. The Workbench opens to show the best practice information and data collected from the systems specified during project setup.
To edit the information for a project
1. Click the name of a project to select it.
2. Click **Edit** to open the **Edit Project** dialog box.

3. Make the needed changes and click **OK**.

To display vSphere project filters applied when the project was set up
1. Click the name of a project to select it.
2. Click **Show Filter** to open the **Collection Filter** dialog box.
3. Click OK.

To upgrade the vSphere catalog to the latest best practices

If you import a project file that was created using an earlier version of VMware HealthAnalyzer, the project might not be using the latest best practices. If that is the case, you can upgrade the catalog. When you upgrade to a newer catalog, the existing analysis, observations, and findings are all lost.

1. Click the name of the project to select it.
2. Move your cursor over the Upgrade Catalog link.
   
   If the catalog is not the latest, the tooltip indicates that you can upgrade to a new version (see the figure). If the catalog is the latest, the project indicates that the catalog is up to date, and the link is disabled.

3. Click Upgrade Catalog to open the Upgrade Catalog Version dialog box.

4. Select the new project type from the drop-down menu, and click OK.
To rerun an analysis

If you have changed any best practice settings, such as assigning a grade or adding observations, you can rerun the analysis to return to the original settings.

1. Click the name of a project to select it.
2. Click Rerun Analysis.

A warning indicates that the existing changes will be lost.

3. Click OK to continue.

An additional warning message is displayed.

4. Click Yes to rerun the analysis.

To delete a project

Deleting a project deletes all data and the report associated with that project.

1. Click the name of a project to select it.
2. Click Delete.
3. Click Yes to confirm the action.
3.3 Using the Workbench

Use the Workbench in VMware HealthAnalyzer to view best practices, assign grades, and create the Health Check Report.

**Note**  Data for some Health Check best practices must be collected manually or through customer interviews. Examples include data from desktops with guest operating systems, and data from applications running inside desktops that can be collected only using third party tools. VMware HealthAnalyzer might present an analysis message for some best practices informing you that the best practice was not fully analyzed. This can occur, for example, if there is not enough data for analysis. If there is an analysis message, VMware HealthAnalyzer displays a yellow attention icon. Place your mouse pointer over the icon to display the analysis message.

**Figure 5. Workbench Workflow**

Select a project and click **Open** in the Project Explorer to open the Workbench. The Workbench includes the following panels:

- **Best Practices List** (left panel) – Lists the best practices and allows you to sort by various criteria.
- **Analysis Steps** (middle panel) – Allows you to add your own observations, assign grades, and choose which best practices to include in the Health Check Report.
- **Data Table** (lower panel) – Displays information to help with your analysis.
- **Project Guide** (right panel) – Displays progress as you design your Health Check Report.

**Figure 6. Workbench Panels**
When the Workbench opens, the Project Guide is hidden. To display the Project Guide, click the double-arrow icon in the right margin of the Workbench. Click again to hide it.

**Figure 7. Click the Arrow to Display the Project Guide**

To return to the Project Explorer from the Workbench, click **Project Explorer**. After you have completed your analysis of the best practices and how they apply to your customer’s environment, click **Generate Report** to build the Health Check Report.
3.3.1 Best Practices List

The Best Practices list displays all of the best practices for the project. You can assign a grade to each based on your own analysis of the customer’s environment. The Health Check Report displays these grades in priority-oriented sections to highlight the customer’s most important issues.

Figure 8. Best Practices List
3.3.1.1. Searching for Best Practice Data

The **Find** box in the Best Practices list filters the display of best practices according to keywords that you type.

You can sort by the following using the **Sort By** drop-down menu:

- **ID** – The identifier of the best practice.
- **Grade** – The assigned grade as it applies to the customer’s environment.
- **In Report** – The best practices that you have included in the report
- **Component** – The component grouping of best practices, such as View Client and View Composer for View or Compute and Datacenter for vSphere.

**Note** Changes to the Best Practices list that you make with the **Find** box and the **Sort By** drop-down menu affect only the display in the Best Practices List, not the format of the Health Check Report.

Buttons entitled **Best Practices** and **Find Table** are located below the Best Practices list.

Click **Find Table** to find all best practices with a table name or column header that matches a search string. For example, the following figure shows that several tables match the criteria for the search string **PNIC**, including the highlighted DVS Uplinks table.

To return to the Best Practices list, click the **Best Practices** button.

3.3.1.2. Exporting Best Practices

You can export the best practices data from VMware HealthAnalyzer to a ZIP file that contains all of the individual XLS files plus an index.html file.

Note the following:

- Exporting best practices is not the same as exporting a project. See Section 3.4.1, Exporting and Importing Projects, for information on exporting projects.
- You cannot import best practices back into VMware HealthAnalyzer.
To export all best practice data to a zip file

1. Click the **Export All Data** button above the best practices list.

2. Follow the browser prompts to save the file.

3. Unzip the downloaded file.

4. Open the **index.html** file.

A browser page opens to show the list of best practices.

**VMware HealthAnalyzer Best Practices Data**

(Click on the best practices hyperlinks to open data tables in Excel)

1. Compute

   1.1 **CO-001**: Deploy VMware ESX/ESXi in compliance with all configuration maximums as documented in the most current VMware vSphere Configuration Maximums document.
   
   1.2 **CO-002**: Verify that all hardware in the system is on the compatibility list for ESXi.
   
   1.3 **CO-003**: Verify that hardware meets the optimal configuration supported by ESXi.
   
   1.4 **CO-004**: Check CPU compatibility for VMware vMotion and VMware vSphere Fault Tolerance (FT).
   
   1.5 **CO-005**: Avoid unnecessary changes to advanced parameter settings.
   
   1.6 **CO-006**: Maintain a similar version of ESXi within a cluster.
   
   1.7 **CO-007**: Avoid installing third-party agents on the ESXi host.
   
   1.8 **CO-008**: Place host devices in a consistent order and location.
5. Click a link to open the XLS file (Microsoft Excel format) for that best practice. The spreadsheet contains a worksheet for each of the tables associated with that best practice, plus a worksheet for the best practice findings.

![Spreadsheet Image]

### 3.3.2 Review Best Practices and Evaluate Findings

Use the analysis steps to review best practices, evaluate the observations, findings, and grades provided by VMware HealthAnalyzer, add your own observations, assign or change a grade for a best practice, and determine whether to include it in the Health Check Report.

**Figure 9. Analysis Steps**

VMware HealthAnalyzer analyzes the data it collects and presents this information in the **Observations** and **Findings** tabs. For many best practices, VMware HealthAnalyzer automatically assigns a grade, based on the data collected. You can change this grade based on your own evaluation. Assign the grade after analyzing the customer’s environment and its conformance to the specific best practice.

For some best practices, a yellow exclamation point icon indicates that the best practice was not analyzed (partially or completely), and that an analysis message is available to show more information.
Hover your mouse pointer over the icon or click it to display the analysis message. This icon is visible in the following situations:

- The best practice was not analyzed because associated data could not be collected completely.
- The best practice was partially analyzed because associated data could not be collected for the other non-analyzed part.

VMware HealthAnalyzer uses the following grades for each best practice.

**Table 1. Grade Priority Categories**

<table>
<thead>
<tr>
<th>Priority</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Does not have a grade assigned.</td>
</tr>
<tr>
<td>Priority 1 (P1)</td>
<td>Requires immediate attention (includes actions to address it).</td>
</tr>
<tr>
<td>Priority 2 (P2)</td>
<td>Is of potential concern (non-critical, or requires further investigation).</td>
</tr>
<tr>
<td>Priority 3 (P3)</td>
<td>Deviates from best practices, but is not high priority.</td>
</tr>
<tr>
<td>OK</td>
<td>Conforms to best practices. No concerns were noted.</td>
</tr>
<tr>
<td>No data</td>
<td>Unable to gather data to evaluate.</td>
</tr>
<tr>
<td>Not applicable</td>
<td>Is not applicable.</td>
</tr>
</tbody>
</table>

**To assign or change a grade for a best practice and include it in the report**

1. Select a best practice from the best practices list.
2. Select a grade from the **Grade** drop-down menu in the analysis steps for the best practice.
   
   To help with your assignment of grades to the best practices, review the information presented in the Data Table.

3. Select **Include in report** if you want to include the best practice in the Health Check Report. VMware recommends including only the best practices that are important for your customer’s environment. By default, only best practices with Priority 1, Priority 2, and Priority 3 grades are included in the report.
The **Justification** tab displays the rationale behind the best practice. For some best practices, it provides information that further qualifies an issue, or tells you how to verify or resolve an issue. Active links to references are given, if applicable. The justification cannot be edited.

The **Observations** tab presents observations determined by VMware HealthAnalyzer. It also allows you to add your own observations to be included in the Health Check Report. VMware HealthAnalyzer summarizes several findings (one each per affected object) into a one-line observation.

### Figure 10. Observations Tab

To add your own observations to a best practice

Click the **Observations** tab in the analysis steps.

1. In the text window, type your observations about the conformance of this best practice to the customer’s environment.
2. Use the text editing icons to format the text. You can create an active link by selecting text and clicking the URL icon.
   
   You can click the source editing mode icon to toggle between the display view and the source (XML) view of the text.
3. After you finish editing your text, click **Save**.

**Note** You cannot include any images in the Observations area.

Your observations are included in the Health Check Report.

VMware HealthAnalyzer presents findings under the **Findings** tab for many best practices, as shown in the following figure. You can evaluate these findings to help assign a grade or enter additional observations.

### Figure 11. Findings Tab

To export the displayed findings information to an XLS file (Microsoft Excel format), click the **Export** button near the top of the **Findings** tab.
3.3.3 Use the Data Table

The Data Table contains information relevant to the currently selected best practice.

**Figure 12. Data Table**

You can filter entries in the Data Table in either of the following ways:

- Type text in the **Find text** box and click **Find**. The data in the Data Table is filtered so that only entries containing the **Find text** (in any field) are displayed.

- To filter the entries in a particular column, click the arrow to the right of the column header and type the text to filter in the **Filters** text area. The table is redisplayed with the filter applied.

Click the **Export** button to export the data in the Data Table to an XLS file (Microsoft Excel format). Note the following:

- Even if the Data Table is has been filtered, the entire (unfiltered) Data Table is exported to the XLS file.
- For some best practices, there is no associated data. In these cases, the Data Table is empty.
- If you click **Export** in the Data Table area, the data in the table is exported. If you click the **Export** button near the top the **Findings** tab, the findings information is exported.
3.3.4 Use the Project Guide to View Progress

The Project Guide displays your progress in constructing the Health Check Report. To display the Project Guide, click the double-arrow icon in the right margin of the Workbench. Click again to hide the guide.

**Figure 13. Project Guide**

The **Assign Grades** section shows the progress of each group of best practices. The **Include in Report** section shows the overall structure of the report, based on which best practices are selected to appear in the report.

The **Generate Report** section alerts you to review the Health Check Report before giving it to the customer. Review each best practice listed in the report, and the grade you have assigned, to determine whether it accurately reflects the customer’s environment.

3.3.5 Generate the Health Check Report

After you have reviewed each best practice, assigned grades, entered your own observations, and determined which best practices to include in the report, generate the Health Check Report.

The Health Check Report is a Microsoft Word document. Before presenting it to your customer, review and edit it using Microsoft Word or another compatible application.
To generate the Health Check Report

1. In the Workbench, click **Generate Report**.

2. VMware HealthAnalyzer displays an open/save dialog box that differs depending on which browser you use. Save the report to your disk. Depending on which browser you use, the Health Check Report might be saved in your Downloads folder, or another dialog box might be displayed where you can type your name for the saved file.


4. Review and edit the Health Check Report as necessary before presenting it to your customer.

VMware Solution Providers delivering the report on their own paper should replace the VMware cover with a cover that has their company's branding, and replace or delete the VMware copyright and trademark statements in the report footers.

### 3.4 Importing and Exporting Projects and Log Files

#### 3.4.1 Exporting and Importing Projects

You can export a project from VMware HealthAnalyzer for later import. You can import a project to an existing project, or you can create a new project prior to import.

For example, you might export a project created at a customer site so that you can import it and continue working with it on your own machine. If you have a project from a previous engagement with the same customer, you can import and compare it with current data to see how the customer environment changed. You can also export a project to provide to Support for assistance in troubleshooting.

**To export a project**

When you export a project, the project is stored in a binary file. This file can be copied to another computer, for example, to review after you leave a customer site.

1. In the Project Explorer, click the name of the project you want to export.

2. Click **Export** and follow the prompts to save the project to your disk.

**Note** The exact procedure for saving a file differs depending on which browser you use to access VMware HealthAnalyzer.
To import previously exported project data into a folder
1. Click the name of a folder to select it.
2. Click **Import** to open the **Import Project** dialog box.

3. Click **Browse** to select a file that was previously exported from VMware HealthAnalyzer.
4. Type a project name, and optionally a description and customer name.
5. Click **OK**.

After importing a project, you can work with it to review best practices, assign grades, and create a Health Check Report.

### 3.4.2 Exporting Log Files

You can export log files to help in diagnosing any issues that arise in your use of VMware HealthAnalyzer.

**To generate the Health Check Report**

1. Click **Admin** in the upper right area of the VMware HealthAnalyzer interface.
2. Select **Log Files**.

3. Click **Save File** to save the `vha-logs.zip` file to your computer.