VMware vRealize Operations for Horizon Installation

VMware vRealize Operations for Horizon 6.5

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VMware vRealize Operations for Horizon Installation

VMware vRealize Operations for Horizon Installation provides information about installing, configuring, and troubleshooting VMware vRealize™ Operations for Horizon[®].

Intended Audience

This information is intended for anyone who wants to install and configure vRealize Operations for Horizon.

Introducing vRealize Operations for Horizon

<div style="text-align: right; font-size: 3em; color: #888;">1</div>

vRealize Operations for Horizon collects performance data from monitored software and hardware objects in your Horizon environment and provides predictive analysis and real-time information about problems in your Horizon infrastructure.

vRealize Operations for Horizon presents data through alerts, on configurable dashboards, and on predefined pages in vRealize Operations Manager.

IT administrators can use vRealize Operations for Horizon to quickly obtain an overview of how the Horizon environment is behaving and view important metrics associated with that environment. Help desk specialists can view objects related to end user sessions, perform basic troubleshooting, and resolve user problems.

This chapter includes the following topics:

- vRealize Operations for Horizon Architecture

- Horizon Adapter

- vRealize Operations for Horizon Desktop Agent

- vRealize Operations for Horizon Broker Agent

vRealize Operations for Horizon Architecture

The vRealize Operations for Horizon components include the Horizon adapter, broker agent, and desktop agents.

Figure 1‑1. vRealize Operations for Horizon Architecture
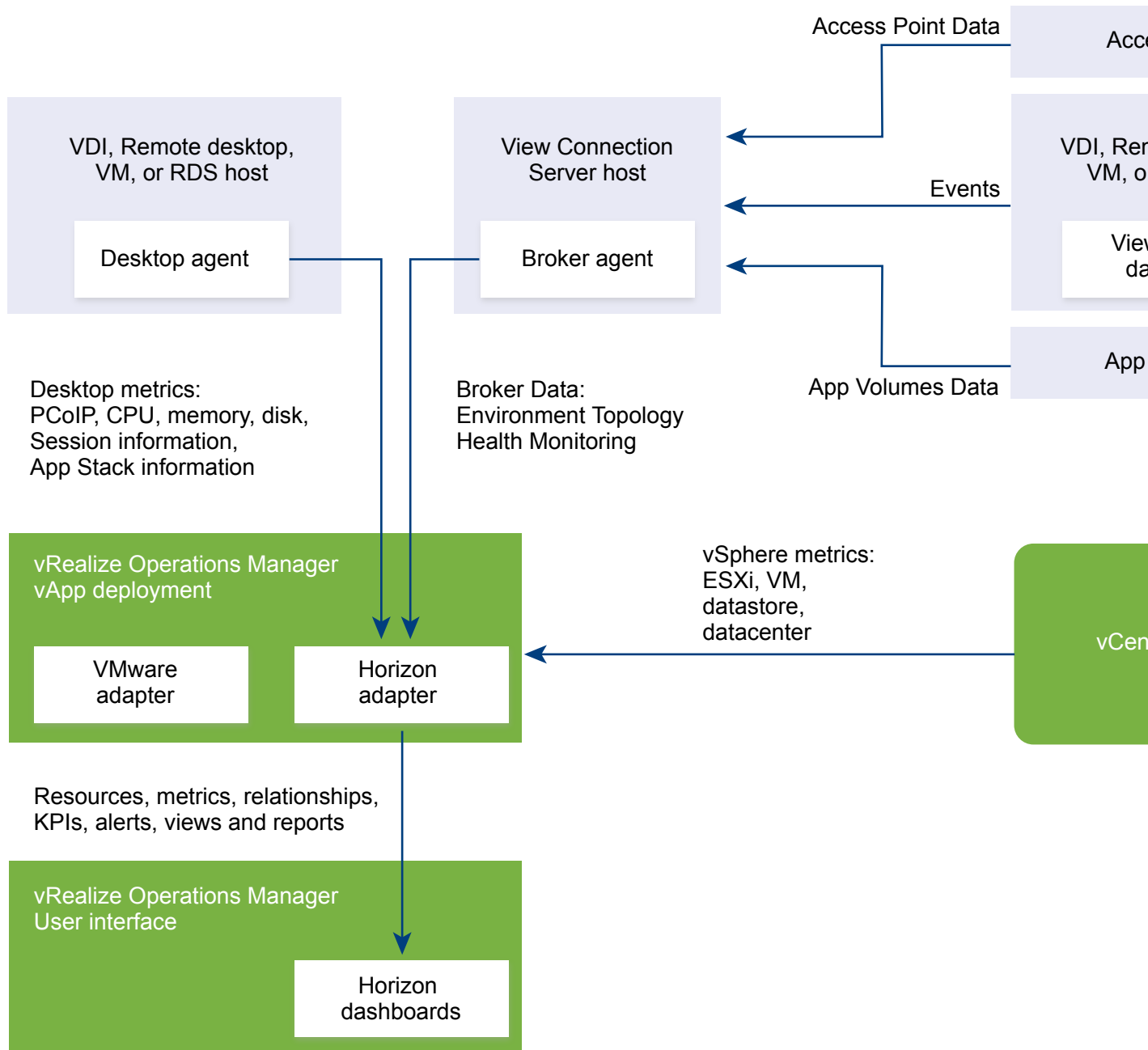
Horizon Adapter

The Horizon adapter runs on a cluster node or remote collector node in vRealize Operations Manager. You can create a single Horizon adapter instance to monitor multiple Horizon pods. During broker agent configuration, you pair the broker agent with a Horizon adapter instance.

If you are monitoring multiple Horizon pods, you can pair the broker agent installed in each pod with the same Horizon adapter instance as long as the total number of desktops that the Horizon adapter instance handles does not exceed 10,000 desktops. If you need to create multiple Horizon adapter instances, you must create each adapter instance on a unique cluster node or remote collector.

Important   Creating more than one Horizon adapter instance per cluster node or remote collector is not supported.

The Horizon adapter obtains Horizon inventory information from the broker agent and collects metrics and performance data from desktop agents. The Horizon adapter passes this data to vRealize Operations Manager for analysis and visualization where it appears preconfigured Horizon dashboards in the vRealize Operations Manager user interface.

If your Horizon environment resembles one of the following configurations, VMware recommends that you create the Horizon adapter instance on a remote collector node.

Large-scale Horizon installation with more than 5,000 desktops	To improve scalability, create the Horizon adapter instance on a remote collector node to offload processing from the vRealize Operations Manager cluster data nodes.
Remote datacenters	To minimize network traffic across WAN or other slow connections, install a remote collector node with a separate Horizon adapter instance in remote datacenters. Pair each Horizon adapter instance with the broker agent that is located in the same remote datacenter.

vRealize Operations for Horizon Desktop Agent

The vRealize Operations for Horizon desktop agent runs on each remote desktop virtual machine, or RDS host in your Horizon environment. It collect metrics and performance data and send that data to the Horizon adapter.

In Horizon with View 6.0.x, or Horizon 6.1/6.2/7.0.1/7.0.*x* environments, the desktop agent is installed as part of the View Agent installation. The vRealize Operations for Horizon desktop agent 6.5 agent is bundled with Horizon agent 7.3.

vRealize Operations for Horizon Broker Agent

The vRealize Operations for Horizon broker agent is a Windows service that runs on a Horizon Connection Server host, collects Horizon inventory information, and sends that information to the Horizon adapter.

If your Horizon environment includes an events database, you must configure the broker agent to collect events from the database and send them to the Horizon adapter. You can optionally configure the broker agent to monitor only specific desktop pools in your Horizon environment.

You install the broker agent on one Horizon Connection Server host in each Horizon pod in your environment. You must install only one broker agent in each Horizon pod.

System Requirements for vRealize Operations for Horizon

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vRealize Operations for Horizon has specific system requirements. Verify that your environment meets these system requirements before you install vRealize Operations for Horizon.

This chapter includes the following topics:

- Product Compatibility for vRealize Operations for Horizon
- Software Requirements for vRealize Operations for Horizon
- Supported Guest Operating Systems
- Support for Oracle Databases that Provide Horizon Events

Product Compatibility for vRealize Operations for Horizon

vRealize Operations for Horizon is compatible with Horizon and VMware vRealize Operations Manager versions.

For the most current information about supported versions, see the VMware Product Interoperability Matrixes.

Software Requirements for vRealize Operations for Horizon

Each component of vRealize Operations for Horizon has requirements for the software on the system where it is installed.

Adapter Software Requirements

You can install the Horizon adapter on a cluster node or remote collector node in vRealize Operations Manager.

The Horizon adapter has the following software requirements.

- vRealize Operations Manager 6.4, 6.5, 6.6, and 6.6.1
- Licenses that enable vRealize Operations for Horizon 6.5 and vRealize Operations Manager 6.4, vRealize Operations Manager 6.5, vRealize Operations Manager 6.6, or vRealize Operations Manager 6.6.1.

Broker Agent Software Requirements

You install the vRealize Operations for Horizon broker agent on a Horizon Connection Server host in your Horizon environment. You install the broker agent on one Connection Server host in each Horizon pod.

The broker agent has the following software requirements:

- Connection Server 6.2.4. or later

- Microsoft .NET Framework version 4.5 or later

Desktop Agent Software Requirements

In VMware Horizon 7 version 7.3 environments, the vRealize Operations for Horizon Desktop Agent version 6.5 is installed as part of the Horizon Agent installation.

Note The desktop agent version that is installed depends on the version of Horizon Agent that you install. To install the latest version of the desktop agent, download the desktop agent from the product download page and install it over the desktop agent that is included in Horizon Agent.

Supported Guest Operating Systems

The following table lists the supported Windows operating system versions for vRealize Operations for Horizon.

Table 2-1. Operating Systems for Linked-Clone and Full-Clone Remote Desktops

Guest Operating System	Version	Edition	Service Pack
Windows 10	64-bit and 32-bit	Enterprise	None
Windows 8.1	64-bit and 32-bit	Enterprise and Professional	Latest Update
Windows 8	64-bit and 32-bit	Enterprise and Professional	None
Windows 7	64-bit and 32-bit	Enterprise and Professional	SP1
Windows Server 2012 R2	64-bit	Datacenter	Latest Update
Windows Server 2008 R2	64-bit	Datacenter	SP1
Windows Server 2016	64-bit	Standard and Datacenter	None

Table 2-2. Operating Systems for Instant-Clone Remote Desktops

Guest Operating System	Version	Edition	Service pack
Windows 10	64-bit and 32-bit	Enterprise	None
Windows 7	64-bit and 32-bit	Enterprise and Professional	SP1

Table 2-3. Operating Systems for RDS Hosts, Providing Remote Desktops or Applications

Guest Operating System	Edition	Service Pack
Windows Server 2008 R2	Standard, Enterprise, and Datacenter	SP1
Windows Server 2012	Standard and Enterprise	None
Windows Server 2012 R2	Standard and Enterprise	Latest update
Windows Server 2016	Standard and Datacenter	None

Support for Oracle Databases that Provide Horizon Events

You can store Horizon events on an SQL database or an Oracle database. For the Oracle and SQL database versions that View supports, see the installation document for your Horizon version.

For Horizon environments that use an Oracle events database, you might need to update the ODAC client libraries on the server where the vRealize Operations for Horizon broker agent is installed.

To update a 64-bit system, go to http://www.oracle.com/technetwork/database/windows/downloads/index-090165.html and download the ZIP file from the 64-bit ODAC 11.2 Release 4 (11.2.0.3.0) Xcopy for Windows x64 link and follow the instructions in the `readme.html` file included in the ZIP file.

Note The broker agent does not support 32-bit systems.

Troubleshooting

When connecting the vRealize Operations for Horizon broker agent to the Oracle events database, you might encounter this error:

```
Event DB username and password cannot be validated. System.Data.OracleClient
requires Oracle client software version 8.1.7 or greater. An Error has Occurred.
Operation Validate DB Credentials has Failed.
```

To solve this issue, install Oracle Instant Client to the broker agent environment:

1   Download the appropriate Instant Client packages for your platform.
    http://www.oracle.com/technetwork/topics/winx64soft-089540.html?ssSourceSiteId=otncn. All
    installations require the Basic or Basic Light package.

2   Unzip the packages into a single directory such as `C:\oracle\instantclient_12_2`.

3   Add this directory to the PATH environment variable. If you have multiple versions of Oracle libraries
    installed, make sure the new directory occurs first in the path.

4   Start your application.

Installing and Configuring vRealize Operations for Horizon

3

Installing or upgrading vRealize Operations for Horizon involves downloading the installation files from the VMware product download page and installing and configuring software components on machines in your vRealize Operations Manager and View environments.

This chapter includes the following topics:

- Downloading the vRealize Operations for Horizon Installation Files
- Install and Configure vRealize Operations for Horizon
- Upgrade vRealize Operations for Horizon
- Remove Adapter Instance
- Uninstall the Broker Agent and Desktop Agent

Downloading the vRealize Operations for Horizon Installation Files

Registered VMware users can download the vRealize Operations for Horizon installation files from the product download page.

Table 3-1. vRealize Operations for Horizon Installation Files

File Name	Component	Where to Install
`VMware-vrops-viewadapter-6.5-buildnumber.pak`	Adapter	Cluster node or remote collector node in vRealize Operations Manager
`Vmware-v4vbrokeragent-x86_64-6.5-buildnumber.exe`	Broker agent	Horizon Connection Server host
`VMware-v4vdesktopagent-6.5-buildnumber.exe` `VMware-v4vdesktopagent-x86_64-6.5-buildnumber.exe`	Desktop agent	**Note** VMware Horizon 7.0.3 environments, vRealize Operations Manager for Horizon View desktop agent version 6.4 is installed as part of the Horizon Agent installation.

Install and Configure vRealize Operations for Horizon

You install and configure vRealize Operations for Horizon software components on machines in your Horizon and vRealize Operations Manager environments.

The amount of time required to install and configure vRealize Operations for Horizon depends on the number of desktop pools in your View environment. If your hardware and software environment is set up properly, the installation and configuration process typically takes about an hour, excluding download times.

Prerequisites

- Verify that your environment meets product compatibility, hardware, and software requirements. See Chapter 2 System Requirements for vRealize Operations for Horizon.

- Verify that View is installed and running. See the installation document for your Horizon version.

- Verify that vRealize Operations Manager is deployed and running. If you need to upgrade vRealize Operations Manager, perform the upgrade before you upgrade vRealize Operations for Horizon.

- Verify that a vCenter adapter instance is configured for each vCenter Server instance in your Horizon infrastructure. The vCenter adapter is provided with vRealize Operations Manager.

- Download the vRealize Operations for Horizon installation files from the product download page. See Downloading the vRealize Operations for Horizon Installation Files.

- Verify that you have a license key for the vRealize Operations for Horizon solution.

- The time on all the servers must be synchronised with a NTP server.

Procedure

1 Install the vRealize Operations for Horizon Solution

You install vRealize Operations for Horizon solution from a PAK file in vRealize Operations Manager.

2 Adding a vRealize Operations for Horizon License Key

After you install the vRealize Operations for Horizon solution, you must add a vRealize Operations for Horizon license key in the vRealize Operations Manager user interface. vRealize Operations for Horizon is not functional until it is licensed.

3 Associate Horizon Objects with Your vRealize Operations for Horizon License Key

You must associate Horizon objects with your vRealize Operations for Horizon license key by editing license groups in vRealize Operations Manager.

4 Create an Instance of the Horizon Adapter

After you install the vRealize Operations for Horizon solution, you must create an instance of the Horizon adapter in vRealize Operations Manager.

5 Install the vRealize Operations for Horizon Broker Agent

You install the vRealize Operations for Horizon broker agent on one Horizon Connection Server host in each Horizon pod in your Horizon environment.

6 Configure the vRealize Operations for Horizon Broker Agent

After you install the broker agent, you use the Broker Agent Configuration wizard to configure the broker agent on the Horizon Connection Server host where the broker agent is installed. You can also use the Broker Agent Configuration wizard to make changes to your broker agent configuration.

7 Verify Your vRealize Operations for Horizon Installation

You can verify your vRealize Operations for Horizon installation using the Horizon Adapter Self Health dashboard. The Horizon Adapter Self Health dashboard shows health information for the Horizon adapters and broker agents in your installation.

8 Install the vRealize Operations for Horizon Desktop Agent

For linked-clone and instant clone desktops, you install the desktop agent on the parent virtual machine that Horizon Composer users to generate the linked-clone and instant clone virtual machines. For desktops in automated and manual desktop pools, you install the desktop agent on each virtual machine desktop source in the desktop pool. For RDSH Services pools, you install the desktop agent on the RDSH server.

Install the vRealize Operations for Horizon Solution

You install vRealize Operations for Horizon solution from a PAK file in vRealize Operations Manager.

Note The installation process restarts vRealize Operations Manager. Data is not collected while vRealize Operations Manager is restarting.

Procedure

1 Copy the `VMware-vrops-viewadapter-6.5-buildnumber.pak` file to a temporary folder.

2 Log in to the vRealize Operations Manager user interface with admin privileges.

3 In the left pane of vRealize Operations Manager, click the **Administration** tab and click **Solutions**.

4 On the **Solutions** tab, click the plus sign.

   a   Browse to locate the temporary folder and select the PAK file.

   b   Click **Upload.**

   The upload might take several minutes.

   c   Read and accept the EULA and click **Next**.

   Installation details appear in the window during the upload process.

   d   When the installation is complete, click **Finish**.

After the installation is finished, vRealize Operations for Horizon is listed as a solution.

What to do next

Provide licensing information for the vRealize Operations for Horizon solution. See Adding a vRealize Operations for Horizon License Key.

Adding a vRealize Operations for Horizon License Key

After you install the vRealize Operations for Horizon solution, you must add a vRealize Operations for Horizon license key in the vRealize Operations Manager user interface. vRealize Operations for Horizon is not functional until it is licensed.

Note You must also add a license key for vRealize Operations Manager.

You can have an evaluation license key or a product license key for vRealize Operations for Horizon. The evaluation license key (`eval`) provides 60 days of unlimited product use. A product license key is encoded with an expiration date and a license count.

The vRealize Operations for Horizon license is required to use the vRealize Operations for Horizon. To retrieve the vRealize Operations for Horizon license key, go to http://my.vmware.com.In addition to the vRealize Operations for Horizon license, you also require the vRealize Operations Manager license key.

Note The descriptions of the two licenses are very similar.

- The vRealize Operations for Horizon license type is Concurrent User (CCU). The vRealize Operations Manager license type is Virtual Machine (VM).

- The Horizon View Enterprise license key also serves as the vRealize Operations for Horizon license key .

To add your vRealize Operations for Horizon license key, select **Administration > Licensing** in the vRealize Operations Manager user interface and add your license key to **VMware Horizon Solution** on the **License Keys** tab.

For detailed information about adding license keys, see Add a vRealize Operations Manager License Key.

If your vRealize Operations for Horizon license key expires, the vRealize Operations for Horizon adapter stops populating vRealize Operations Manager with data. If you have a valid license key but you exceed the license count, vRealize Operations Manager generates alerts and a watermark appears on certain dashboards. The Horizon adapter does not restrict data when the license count is exceeded.

Associate Horizon Objects with Your vRealize Operations for Horizon License Key

You must associate Horizon objects with your vRealize Operations for Horizon license key by editing license groups in vRealize Operations Manager.

A license group is a way to gather certain objects, called license group members, under a particular license key. By default, the objects are categorized as follows:

Horizon License Group

- Include view pods, desktop VMs, all hosts, clusters, datastores, and data centers (if any) used by Horizon.

- Exclude all objects except above. For example, vSphere VMs, hosts, clusters, datastores, and data centers.

Product License Group

- Include all vSphere VMs, hosts, clusters, datastores, and data centers.

- Exclude all objects that are included in the Horizon License group.

Each license group includes membership criteria that you can use to filter the objects that are members of the license group. By editing the membership criteria for the vRealize Operations Manager and vRealize Operations for Horizon license groups, you can specify that certain objects are covered only under your vRealize Operations for Horizon license key.

Note The license usage is always 0 when the horizon key is for the Named User license type.

Prerequisites

Add your vRealize Operations for Horizon license key. See Adding a vRealize Operations for Horizon License Key.

Procedure

1 Log in to the vRealize Operations Manager user interface.

2 In the left pane, select **Administration > Licensing**.

3 Click the **License Groups** tab.

  License groups appear in the top pane. The license group for vRealize Operations for Horizon is called **VMware Horizon Solution Licensing**. The license group for vRealize Operations Manager is called **Product Licensing**.

4 Edit the membership criteria for the **VMware Horizon Solution Licensing** group.

  a Select **VMware Horizon Solution Licensing** and click **Edit** on the toolbar.

  b Select the vRealize Operations for Horizon license key under **VMware Realize Operations for Horizon** and click **Next**.

  c In the first **Select the Object Type that matches all of the following criteria** drop-down menu, select **View Pod**, define the criteria **Relationship**, **Descendant of**, **is not**, and type `All Hosts` in the **Object name** text box .

  d In the second **Select the Object Type that matches all of the following criteria** drop-down menu, select **Host System**, define the criteria **Relationship**, **Descendant of**, **is**, and type `All Hosts` in the **Object name** text box.

e   In the third **Select the Object Type that matches all of the following criteria** drop-down menu, select **Virtual Machine**, define the criteria **Relationship**, **Descendant of**, **is**, and type `All Desktop VMs` in the **Object name** text box.

f   In the fourth **Select the Object Type that matches all of the following criteria** drop-down menu, select **Datastore**, define the criteria **Relationship**, **Descendant of**, **is**, and type `All Storage` in the **Object name** text box.

g   Click **Next** and then click **Finish** to save your configuration.

5   Edit the membership criteria for the **Product Licensing** group.

You must edit the membership criteria for the **Product Licensing** group to exclude the objects that you included in the **VMware Horizon Solution Licensing** group.

a   Select **Product Licensing** and click **Edit** on the toolbar.

b   Select the vRealize Operations Manager license key under **vRealize Operations Manager** and click **Next**.

c   In the first **Select the Object Type that matches all of the following criteria** drop-down menu, select **Host System**, define the criteria **Relationship**, **Descendant of**, **is not**, and type `All Hosts` in the **Object name** text box.

d   In the second **Select the Object Type that matches all of the following criteria** drop-down menu, select **Virtual Machine**, define the criteria **Relationship**, **Descendant of**, **is not**, and type `All Desktop VMs` in the **Object name** text box.

e   In the third **Select the Object Type that matches all of the following criteria** drop-down menu, select **Datastore**, define the criteria **Relationship**, **Descendant of**, **is not**, and type `All Storage` in the **Object name** text box.

f   Click **Next** and then click **Finish** to save your configuration.

Create an Instance of the Horizon Adapter

After you install the vRealize Operations for Horizon solution, you must create an instance of the Horizon adapter in vRealize Operations Manager.

You can create a single Horizon adapter instance to monitor multiple Horizon pods. If you need to create multiple Horizon adapter instances, you must create each adapter instance on a unique cluster node or remote collector.

Important   Creating more than one Horizon adapter instance per cluster node or remote collector is not supported.

Note   To run the adapter instance on a remote collector, select the remote collector. If you do not have a remote collector, select the master node collector.

Prerequisites

Install the vRealize Operations for Horizon solution and add your license key.

Procedure

1   Log in to the vRealize Operations Manager user interface with admin privileges.

2   Click the **Administration** tab and click **Solutions**.

3   Select **VMware Horizon** and click the **Configure** button on the toolbar.

4   Select **Horizon Adapter** in the Adapter Type pane.

5   Click the **Add** (plus sign) icon on the lower pane toolbar to add an adapter instance.

6   In **Adapter Settings**, type a name and description for the adapter instance.

7   In **Basic Settings**, configure an adapter ID and credential for the adapter instance.

    a   Type an identifier for the adapter instance in the **Adapter ID** text box.

       The identifier must be unique across all Horizon adapter instances in the cluster.

    b   Configure the credential to use when the broker agent pairs with the Horizon adapter instance.

Option	Action
Use an existing credential	Select the credential from the **Credential** drop-down menu. When you create a Horizon adapter instance for the first time, the **Credential** drop-down menu is empty.
Add a new credential	1 Click the **Add New** (plus sign) icon .
	2 Type a name for the credential in the **Credential name** text box.
	3 Type a server key for the adapter instance in the **Server Key** text box. The server key is required to enable pairing between the broker agent and the adapter. A server key is user-defined and functions like a password; remember your server key, as you must provide it when you configure the broker agent.
	4 Click **OK** to save the new credential.
	5 Select the new credential from the **Credential** drop-down menu

    c   Click **Test Connection** to test the connection with the credential that you selected.

8   In **Advanced Settings**, select a collector to manage the adapter processes from the **Collector/Groups** drop-down menu.

9   Click **Save Settings** to save the adapter instance.

   The adapter instance is added to the list.

10 Port numbers 3099, 3100, and 3101 are required to be enabled in the vRealize Operation manager in `/opt/vmware/etc/vmware-vcops-firewall.conf`.

> **Note** This step is only required if you are using vRealize Operations Manager 6.3 or earlier. If you are using vRealize Operations Manager 6.4, skip to the next step.

    a In the vmware-vcops-firewall.conf file, add the following command after TCPPORTS="$TCPPORTS 3091:3094".

```
TCPPORTS="$TCPPORTS 3099:3101"
```

    b Restart the firewall.

```
/etc/init.d/vmware-vcops-firewall restart
```

    c Check the status of the firewall.

```
/etc/init.d/vmware-vcops-firewall status
```

11 To enable ports on Windows, perform the following steps.

    a Select **Windows Firewall** > **Advanced Settings** > **Inbound Rules** > **New Rule** > **Port** and click **Next**.

    b Select **Specific local ports** and type the ports that you are using. For example, 3091 - 3094. The default ports are 3091 - 3094. If you changed the default ports, specify the ports that you are using.

> **Note** By default, TLS 1.2 is enforced in vRealize Operations for Horizon 6.2.1. This means that the vRealize Operations for Horizon 6.2.1 cannot communicate with older Desktop Agents running with TLS 1.0 (For example, vRealize Operations for Horizon Desktop Agent 6.1. VDI Pools/RDS Pools/Apps running with older desktop agents are not monitored).

> **Note** To monitor pools running with older Desktop agents, administrators must log in to the vRealize Operations Manager collector node and explicitly add `enforcesslprotocols =false` in the msgserver.properties file located in the `/usr/lib/vmware-vcops/user/plugins/inbound/V4V_adapter3/work` folder. The Horizon Adapter instance must be restarted. The Broker Agent and Horizon Adapter instances pairing may be required.

What to do next

Install the vRealize Operations for Horizon broker agent. See Install the vRealize Operations for Horizon Broker Agent.

Install the vRealize Operations for Horizon Broker Agent

You install the vRealize Operations for Horizon broker agent on one Horizon Connection Server host in each Horizon pod in your Horizon environment.

Important You cannot install the broker agent on a Horizon security server.

Prerequisites

- Install the vRealize Operations for Horizon solution, add your license key, and create an instance of the Horizon adapter.

- Verify that you downloaded the broker agent installation file.

- Upgrade is not supported Broker Agent version 6.1 or earlier. Uninstall any Broker Agent version 6.1 or earlier from the target Horizon Connection Server.

Procedure

1   Log in to the Horizon Connection Server host where you plan to install the broker agent using a domain account that is part of the local administrators group.

2   Copy the `VMware-v4vbrokeragent-x86_64-6.5-`*`buildnumber`*`.exe` file to a temporary folder on the Horizon Connection Server host.

3   In the temporary folder, run the EXE file to start the broker agent setup wizard.

4   Accept the EULA and click **Next**.

5   (Optional) Select the **Launch the VMware vRealize Operations Horizon Broker Agent configuration utility** check box to cause the Broker Agent Configuration wizard to open immediately after the broker agent is installed.

    The check box is selected by default.

6   Click **Install** to begin the installation.

7 When the installation finishes, click **Finish** to exit the broker agent setup wizard.

The broker agent is installed in the same folder as Horizon Connection Server.

Note If vRealize Operations for Horizon broker agent 6.2, 6.2.1, 6.3, or 6.4 is installed, you can upgrade it to vRealize Operations for Horizon broker agent 6.5 by running `VMware-v4vbrokeragent-x86_64-6.5-`*`buildnumber`*`.exe` and by following the procedure mentioned above. During the Broker Agent upgrade process, vRealize Operations for Horizon broker agent 6.2 or earlier service is stopped, configuration is preserved, Broker agent is uninstalled, and the new version of Broker Agent is installed. When the configuration utility opens, enter the vRealize Operations IP and the pairing credentials on the first screen of the wizard. In case of upgrade, the Broker Agent service is not started automatically. Start the broker agent service on the **Configure The Broker Agent Service** screen of the wizard. Click **Next** and in the last page of the wizard click **Finish**. Subsequent screen contains the data populated from the previous installation. This includes details such as, Horizon Credentials and Events database configurations.

What to do next

Use the Broker Agent Configuration wizard to configure the broker agent. See Configure the vRealize Operations for Horizon Broker Agent.

Configure the vRealize Operations for Horizon Broker Agent

After you install the broker agent, you use the Broker Agent Configuration wizard to configure the broker agent on the Horizon Connection Server host where the broker agent is installed. You can also use the Broker Agent Configuration wizard to make changes to your broker agent configuration.

A check box in the Broker Agent Setup wizard controls whether the Broker Agent Configuration wizard opens immediately after you install the broker agent. This check box is selected by default.

During broker agent configuration, you pair the broker agent with a Horizon adapter instance. Pairing the broker agent with a Horizon adapter instance is a necessary authentication step that enables the broker agent and desktop agents to communicate with the Horizon adapter. The broker agent and desktop agents cannot communicate with the Horizon adapter until the pairing process is complete.

If you are monitoring multiple Horizon pods, you can pair the broker agent installed in each pod with the same Horizon adapter instance as long as the total number of desktops that the Horizon adapter instance handles does not exceed 10,000 desktops.

If your Horizon environment includes an events database, you must configure the broker agent to connect to the database. You can optionally configure the broker agent to monitor application pools and specific desktop pools.

Prerequisites

- Install the vRealize Operations for Horizon broker agent. See Install the vRealize Operations for Horizon Broker Agent.

- Verify that you have the server key for the Horizon adapter. You specified the server key when you created a credential for the adapter instance.

- Verify that you have the IP address of the machine where you installed the Horizon adapter.

- If your Horizon environment includes an events database, verify that the database format is supported. See Support for Oracle Databases that Provide Horizon Events.

- To monitor specific desktop pools in Horizon, obtain the IDs for the pools. You can find pool IDs in Horizon Administrator. For more information, see the administration document for your Horizon version.

- Verify that you are logged in to the Horizon Connection Server host with a domain user account. Local accounts do not have the necessary privileges to configure all settings.

Procedure

1   If the Broker Agent Configuration wizard is not already open, start it by selecting **Start > VMware > vRealize Operations View Broker Agent Settings**.

2   In the **Address** text box, type the IP address of the vRealize Operations Manager node or remote collector where the Horizon adapter instance is running.

3   In the **Port** text box, type the port to use to connect to the Horizon adapter.

    By default, the broker agent uses port 3091 to communicate with the Horizon adapter. You can modify the default port number, depending on your network configuration.

4   After entering the pairing key, click **Pair** to pair the broker agent with the Horizon adapter.

    The status of the pairing process appears in the Status area.

5   After the pairing process succeeds, click **Next**.

6   For Horizon 6.1 with Horizon or later, type and validate the user name, domain, and password of a Horizon Administrator account by clicking **Test**.

    A Horizon Administrator account is typically part of the local administrators group on the Windows server computer on which Horizon Connection Server is installed.

7   If your Horizon environment includes an events database, type the credentials for that database.

8   In the Horizon Pool Filter section, perform these steps to monitor specific desktop pools in vRealize Operations Manager, or click **Next** to proceed to the next dialog box.

    If you do not specify specific desktop pools, vRealize Operations Manager monitors all desktop pools.

    a   Select the **Specify desktop pools** check box and type the IDs of the desktop pools to monitor in the text box.

        Use a comma to separate each desktop pool ID.

    b   Select whether to include or exclude the listed desktop pools.

    c   Click **Test** to verify the list of desktop pools.

    d   To monitor application pools in Horizon 6.0 with Horizon or later, select the **Monitor application pools and hosted applications** check box.

        You cannot select specific application pools to monitor.

9   (Optional) Select the **Configure App Volumes** check box.

    a   Enter the FQDN and/or IP address of the App Volumes Manager to monitor.

    b   Enter the port for App Volumes.

    c   Enter the administrator username for the App Volumes Manager.

    d   Enter the password for the App Volumes Manager.

    e   Click **Test** to test the connection.

    f   Repeat for any other App Volumes Managers you want to monitor.

10 (Optional) Select the **Configure Access Point** check box.

    a   Enter the Access Point's name, IP address, and port number.

    b   Enter the username and password.

    c   Click **Test** to test the connection.

    d   Repeat for any other Access Points you want to monitor.

11 Click **Next**. In the next dialog, if the default Intervals and Timeouts needs to be changed, select the **Edit the Intervals and Timeouts** checkbox and make the change.

12 Click **Next** in the **Configure the Logging parameters** window and change the default logging parameters if required.

13 Click **Next**.

14 In the "Configure The Broker Agent Service" wizard, the Broker Agent service can be started here or it will be started in the last wizard.

15 Select the broker agent settings that you configured appear in the **Review Changes Wizard**. Review the changes and click **Finish**. The configuration utility closes.

16 Manually start the broker agent service.

Verify Your vRealize Operations for Horizon Installation

You can verify your vRealize Operations for Horizon installation using the Horizon Adapter Self Health dashboard. The Horizon Adapter Self Health dashboard shows health information for the Horizon adapters and broker agents in your installation.

Prerequisites

- Install and configure vRealize Operations for Horizon.

- Become familiar with broker agent metrics. See "Understanding Broker Agent Metrics" in the *VMware vRealize Operations for Horizon Administration* document.

Procedure

1   Log in to the vRealize Operations Manager user interface, select **Dashboard List > Horizon**, and click the **Horizon Adapter Self Health** tab.

2   Select a Horizon adapter in the Select Horizon Adapter widget to view the status of the adapter.

3   Use the Horizon Adapter Statistics widget to view metrics for the selected adapter.

The Horizon Adapter Statistics widget shows the length of the last collection period, the number of desktops that sent data samples during the last collection period, and the total number of objects that the adapter received during the last collection period.

4   Select a broker agent in the Select Horizon Broker Agent widget to show the status of the broker agent.

5   Use the Horizon Broker Agent Status widget to view metrics for the selected broker agent.

The Horizon Broker Agent Status widget shows the topology, metric, and database collection times and the user session, desktop virtual machine, and database event record counts.

6   View collection statistics for the selected broker agent in the Horizon Broker Agent Topology Collection Statistics, Horizon Broker Agent Metric Collection Statistics, and Horizon Broker Agent Event DB Collection Statistics widget.

These widgets show simple graphs that contain the values of their associated collection metrics over time.

What to do next

After vRealize Operations Manager is populated with data from your Horizon environment, associate objects with your vRealize Operations for Horizon license key. See Associate Horizon Objects with Your vRealize Operations for Horizon License Key.

If a Horizon adapter or broker agent is not operating as expected, see "Troubleshooting a vRealize Operations for Horizon Installation" in the *VMware vRealize Operations for Horizon Administration* document for troubleshooting tips.

Install the vRealize Operations for Horizon Desktop Agent

For linked-clone and instant clone desktops, you install the desktop agent on the parent virtual machine that Horizon Composer users to generate the linked-clone and instant clone virtual machines. For desktops in automated and manual desktop pools, you install the desktop agent on each virtual machine desktop source in the desktop pool. For RDSH Services pools, you install the desktop agent on the RDSH server.

Guest Operating System	Version	Edition	Service Pack
Windows 10	64-bit and 32-bit	Enterprise	Windows 10 Anniversary
Windows 8.1	64-bit and 32-bit	Enterprise and Professional	Latest update
Windows 8	64-bit and 32-bit	Enterprise and Professional	None
Windows 7	64-bit and 32-bit	Enterprise and Professional	SP1
Windows Server 2016	64-bit	Datacenter	None
Windows Server 2012 R2	64-bit	Datacenter	None

Guest Operating System	Version	Edition	Service Pack
Windows Server 2008 R2	64-bit	Datacenter	SP1
Windows Server 2016	64-bit	Standard and Datacenter	None

Prerequisites

- Install and configure vRealize Operations for Horizon.

- If you are installing the desktop agent in linked-clone and instant clone desktops, become familiar with the recompose operation. For information about recomposing linked-clone and instant clone desktops, see the Horizon administration document for your Horizon version.

- Verify that you downloaded the desktop agent installation files.

Procedure

- To install the desktop agent for linked-clone desktops, perform these steps on the parent virtual machine in the linked-clone desktop pool.

    a   In vSphere Client, open the console for the parent virtual machine and log in to the guest operating system as an administrator.

    b   Copy the desktop agent installation file that corresponds to the guest operating system in the parent virtual machine.

Option	Description
64-bit guest operating system	VMware-v4vdesktopagent-x86_64-6.5-*buildnumber*.exe
32-bit guest operating system	VMware-v4vdesktopagent-6.5-*buildnumber*.exe

    c   Run the EXE file, accept the EULA, and click **Install**.

    d   When the installation finishes, click **Finish**.

    The desktop agent is installed in the same folder as View Agent.

    e   Shut down the parent virtual machine.

    f   In vSphere Client, take a snapshot of the parent virtual machine in its powered-down state.

    g   In Horizon Administrator, recompose the linked-clone desktops.

    The recompose operation updates all of the linked-clone desktops anchored to the parent virtual machine, causing the desktop agent to be installed on each linked-clone desktop.

■ To install the desktop agent for desktops in an automated or manual desktop pool, perform these steps on each virtual machine in the pool.

Important For an automated desktop pool, you must also modify the virtual machine template so that the desktop agent is installed in newly created desktops in the pool.

a Copy the desktop agent installation file that corresponds to the guest operating system to the virtual machine.

Option	Description
64-bit guest operating system	VMware–v4vdesktopagent–x86_64–6.5–*buildnumber*.exe
32-bit guest operating system	VMware–v4vdesktopagent–6.5–*buildnumber*.exe

b Run the EXE file, accept the EULA, and click **Install**.

c When the installation finishes, click **Finish**.

The desktop agent is installed in the same folder as View Agent.

■ To install the desktop agent on a RDSH server or physical machine desktop source, perform these steps.

a Copy the desktop agent installation file that corresponds to the operating system of the terminal server or physical machine.

Option	Description
64-bit guest operating system	VMware–v4vdesktopagent–x86_64–6.5–*buildnumber*.exe
32-bit guest operating system	VMware–v4vdesktopagent–6.5–*buildnumber*.exe

b Run the EXE file, accept the EULA, and click **Install**.

c When the installation finishes, click **Finish**.

The desktop agent is installed in the same folder as View Agent.

Note While uninstalling the desktop agent, you are prompted to close vmwAgent even if nothing related is opened. Ignore the message and proceed with the uninstallation.

Note You can upgrade Desktop agents from version 6.2, 6.2.1, 6.3, and 6.4 to version 6.5.

Upgrade vRealize Operations for Horizon

You can directly upgrade from vRealize Operations for Horizon 6.2/6.2.1/6.3 to vRealize Operations for Horizon 6.4. If you have vRealize Operations for Horizon 1.6 or 1.7 installed in your environment, you must first migrate to vRealize Operations for Horizon 6.1 and then upgrade to vRealize Operations for Horizon 6.4.

Upgrade vRealize Operations for Horizon Adapter

Note Upgrading from vRealize Operations for Horizon 6.0 to vRealize Operations for Horizon 6.4 is not supported. If you have upgraded vRealize Operations Manager, you must reopen the ports.

Prerequisites

- Verify that your environment meets product compatibility, hardware, and software requirements. See Chapter 2 System Requirements for vRealize Operations for Horizon.

- Verify that Horizon is installed and running. See the installation document for your Horizon version.

- Verify that vRealize Operations Manager is deployed and running.

- If you have not yet upgraded to vRealize Operations Manager 6.2.1 or vRealize Operations Manager 6.3 or 6.4, upgrade vRealize Operations Manager before you upgrade vRealize Operations for Horizon.

- Verify that a vCenter adapter is configured for each vCenter Server instance in your Horizon infrastructure. The vCenter adapter is provided with vRealize Operations Manager.

- Download the vRealize Operations for Horizon installation files from the product download page. See Downloading the vRealize Operations for Horizon Installation Files.

- Verify that you have a license key for the vRealize Operations for Horizon solution.

Procedure

1 On the Horizon Connection Server host where the previous broker agent is installed, select **VMware > vRealize Operations Horizon Broker Agent Settings** and stop the Broker Agent service.

   Stopping the broker agent service prevents errors or unhandled messages from occurring while the vRealize Operations for Horizon solution is being upgraded.

2 Copy the `VMware-vrops-viewadapter-6.5-buildnumber.pak` file to a temporary folder.

3 Log in to the vRealize Operations Manager user interface with admin privileges.

4 In the left pane of vRealize Operations Manager, click the **Administration** tab and click **Solutions**.

5 On the **Solutions** tab, select **VMware Horizon** and click the **Add** (plus sign) icon.

6 Browse to locate the temporary folder and select the PAK file.

7 Select **Force installation** and **Reset out-of-the-box content** and click **Upload** to overwrite the previous solution.

8 Read and accept the EULA and click **Next**.

   Installation details appear in the window during the upload process.

9 When the upgrade is complete, click **Finish.**

> **Note** You must restart vRealize Operations Manager cluster after the upgrade for the process to complete. To do so, run `service vmware-vcops --full-restart` on the master node of the vRealize Operations Manager.

10 In the `/opt/vmware/etc/vmware-vcops-firewall.conf` file on the vRealize Operations Manager, add the following command after TCPPORTS="$TCPPORTS 3091:3095":

> **Note** This step is only required if you are using vRealize Operations Manager 6.3 or earlier. If you are using 6.4, skip to the next step.

```
TCPPORTS="$TCPPORTS 3099:3101"
```

11 Restart the firewall by running the following command.

```
/etc/init.d/vmware-vcops-firewall restart
```

12 Check the status of the firewall by running the following command.

```
/etc/init.d/vmware-vcops-firewall status
```

What to do next

After the upgrade is finished, you must configure licensing information for the vRealize Operations for Horizon solution. See Adding a vRealize Operations for Horizon License Key.

After the vRealize Operations for Horizon solution is licensed, you must install and configure the new version of the vRealize Operations for Horizon broker agent. See Install the vRealize Operations for Horizon Broker Agent and Configure the vRealize Operations for Horizon Broker Agent.

Upgrade Desktop Agent

vRealize Operations for Horizon Desktop Agent 6.2, 6.2.1, 6.3 or 6.4 can be upgraded to vRealize Operations for Horizon Desktop Agent 6.5 on all the required machines.

To upgrade the Desktop Agent, perform the following task:

Procedure

1 Using a domain account that is part of the local administrators group, log in to the desktop machine where you plan to upgrade the Desktop Agent.

2 Copy the `VMware-v4vdesktopagent-x86_64-6.5-`*buildnumber*`.exe`or VMware-v4vdesktopagent-6.5-*buildnumber*.exe file to a temporary folder on the required machines.

3 In the temporary folder, run the EXE file to start the Desktop Agent setup wizard.

4 Accept the EULA and click **Next**.

5 Click **Install** to begin the upgrade.

6 When the installation finishes, click **Finish** to exit the Desktop Agent setup wizard.

Note You can only upgrade Desktop Agent 6.2, 6.2.1, 6.3, and 6.4 to 6.5. If you have Desktop Agent 6.1 or 6.0 installed, you must uninstall the Desktop Agents and install Desktop Agent 6.5.

Upgrade Broker Agent

You can upgrade vRealize Operations for Horizon Broker Agent 6.2, 6.2.1, 6.3, or 6.4 to vRealize Operations for Horizon Broker Agent 6.5 on one Connection Server host in each pod in your Horizon environment.

Prerequisites

Install the vRealize Operations for Horizon solution, add your license key, and create an instance of the vRealize Operations for Horizon adapter.

Verify that you downloaded the Broker Agent installation file.

Procedure

1 Log in to the Connection Server host where you plan to upgrade the Broker Agent using a domain account that is part of the local administrators group.

2 Copy the `VMware-v4vbrokeragent-x86_64-6.5-buildnumber.exe` file to a temporary folder on the Connection Server.

3 In the temporary folder, run the EXE file to start the Broker Agent setup wizard.

4 Accept the EULA and click **Next**.

5 (Optional) Select the **Launch the** VMware vRealize Operations for Horizon **Broker Agent** configuration utility check box. The Broker Agent Configuration utility opens immediately after the Broker Agent is installed.

6 Click **Install** to begin the upgrade.

7 When the installation finishes, click **Finish** to exit the Broker Agent setup wizard.

During this process, the earlier version of Broker Agent service is stopped, configuration is preserved, Broker Agent is uninstalled, and the new version of Broker Agent is installed.

8 When the configuration utility opens, enter the vRealize Operations Manager IP address and the pairing credentials and pair them on the first screen of the wizard. Subsequent screens have data such as vRealize Operations for Horizon Credentials and Events DB Configuration populated from the previous installation.

9   Restart the Broker Agent service on the Configure The Broker Agent Service screen. Click **Next**, and click **Finish** on the last screen of the wizard.

Note   During the Broker Agent upgrade process, the vRealize Operations for Horizon Broker Agent 6.2 or earlier service is stopped, configuration is preserved, Broker agent is uninstalled, and the new version of Broker Agent is installed. When the configuration utility opens, enter the vRealize Operations IP and the pairing credentials on the first screen of the wizard. During upgrade, the Broker Agent service is not started automatically. Start the Broker Agent service on the **Configure The Broker Agent Service** screen of the wizard. The Subsequent page contains the data populated from the previous installation and details such as Horizon Credentials and Events database configurations .

Remove Adapter Instance

There is a dependency on vCenter adapter because the vCenter adapter instances are also bundles with the Horizon solution. You cannot just select the Horizon adapter and click the Remove Instance button to remove the Horizon adapter instance. Doing so leads to the deletion of both Horizon and vCenter adapter instances.

To remove the adapter instances perform the following task:

Procedure

1   Select the Horizon adapter, and click **Configure**.

2   Select the Horizon adapter in the Adapter Type list.

3   Remove the instances in the Instance Name list one-by-one.

Uninstall the Broker Agent and Desktop Agent

You can uninstall the Broker Agent and the Desktop from the Windows Control Panel.

You uninstall the Broker agent from the Control Panel on the connection server where the Broker agent is installed.

You uninstall the Desktop agent from the Control Panel on the desktop where the Desktop agent is installed.