VMware vRealize Operations for Horizon Administration

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Contents

VMware vRealize Operations for Horizon Administration

VMware vRealize Operations for Horizon Administration describes how to monitor VMware Horizon® environments through VMware vRealize® Operations Manager™.

Intended Audience

This information is intended for users who monitor the performance of objects in Horizon environments in vRealize Operations Manager and administrators who are responsible for maintaining and troubleshooting a vRealize Operations for Horizon deployment.

Monitoring Your Horizon Environment

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The vRealize Operations for Horizon solution includes Horizon-specific dashboards and report templates that appear in the vRealize Operations Manager user interface. You can use these dashboards and reports along with the standard vRealize Operations Manager object monitoring features to monitor your Horizon environment.

This chapter includes the following topics:

- Using the Horizon Dashboards
- Using the Horizon Reports

Using the Horizon Dashboards

You can use preconfigured Horizon dashboards to view metrics and information about your environment and the objects in it.

The preconfigured Horizon dashboards are listed in the following table.

Table 1-1. Horizon Dashboards

Dashboard	What It Shows	When to Use It
Horizon Overview Dashboard	Status of your Horizon environment, including the top Horizon-related alerts.	■ Assess Horizon pod usage, client performance, and overall user experience. ■ View the top alerts.
Horizon Help Desk Dashboard	Detailed information about all connected sessions in your environment.	■ View detailed information about connected sessions. ■ View all alerts for the environment.
Horizon Infrastructure Dashboard	Information about the health, workload, and connectivity of infrastructure hosts, remote desktops, datastores, and RDS hosts in your environment.	■ Understand the relationships between objects in your Horizon infrastructure. ■ Assess the underlying vSphere and Horizon infrastructure.
Horizon User Sessions Dashboard	Metrics and performance information for all types of sessions, including VDI desktop sessions, RDS desktop sessions, and application sessions.	■ Identify and troubleshoot poorly performing user sessions.

Table 1-1. Horizon Dashboards (continued)

Dashboard	What It Shows	When to Use It
Horizon VDI Pools Dashboard	Metrics and performance information for VDI pools.	■ Troubleshoot poorly performing desktop virtual machines and sessions.
Horizon RDS Pools Dashboard	Metrics and performance information for RDS pools.	■ Identify the RDS hosts that are using the most resources. ■ Troubleshoot poorly performing RDS desktop and application sessions.
Horizon Applications Dashboard	Status and performance information for application pools and their associated farms, RDS hosts, application sessions, applications, and Horizon clients.	■ Understand the relationships between objects in your application infrastructure. ■ Troubleshoot remote applications.
Horizon Desktop Usage Dashboard	Usage data for all desktop pools in your environment.	■ View connected and disconnected sessions for all desktop pools. ■ View top alerts and resource trends for selected desktop pools. ■ Collect in-guest process data from desktop sessions.
Horizon User Session Details Dashboard	Detailed information about all types of sessions running in your environment, including VDI desktop sessions, RDS desktop sessions, and application sessions.	■ Troubleshoot poorly performing sessions. ■ Identify when session problems occurred. ■ Collect in-guest process data from desktop sessions.
Horizon RDS Host Details Dashboard	Detailed information about the RDS hosts in your Horizon environment.	■ View desktop and application sessions currently running on selected RDS hosts. ■ Identify when RDS host problems occurred. ■ Collect and view in-guest process data from RDS hosts.
Horizon Adapter Self Health Dashboard	License compliance information and health information for your Horizon Adapter instances and broker agents.	■ Troubleshoot Horizon Adapter problems. ■ Monitor license usage.
Horizon End User Experience Dashboard	Health information for your resources.	■ Troubleshoot problems related to end-user experience.
Horizon Root Cause Analysis Dashboard	Detailed information on specific metrics, including performance over time.	■ Troubleshoot problems related to specific object-related metrics.

The colored rectangles in certain widgets are representations of specific objects. You can point to any of these rectangles to view basic information about the object it represents. In the **Configurations** drop-down menu in the widget toolbar, you can select how the system arranges these objects by size and color.

The Horizon dashboards are created from standard vRealize Operations Manager widgets. If your user account has the necessary permissions, you can create or modify dashboards and widgets that use Horizon objects.

For more information about configuring dashboards and widgets, see "Configuring Data Display" in the *vRealize Operations Manager Configuration Guide*.

Horizon Overview Dashboard

Use the **Horizon Overview** dashboard to visualize your end-to-end Horizon environment, its underlying environment, and alerts.

Table 1-2. Horizon Overview Widgets

Widget	What It Shows
Top Horizon Alerts	Alerts of the greatest significance to Horizon objects. You can click an alert to see
Horizon Pods	All Horizon pods in your environment. Select a pod to see related information in th
Pod Session Metrics	Session-related statistics and metrics, including logon time, latency, and bandwidt
vCenter Server Instances	CPU, memory, and disk usage for each vCenter Server instance.
Capacity Remaining	Percentage of total vCenter Server instance resources that can still be used.
Unified Access Gateways	Information about Unified Access Gateway appliances configured for the selected

Horizon Help Desk Dashboard

Use the **Horizon Help Desk** dashboard to view detailed information about all connected sessions running in your Horizon environment.

The objects displayed on this dashboard can be used for root cause analysis. Click an object and select **Dashboard Navigation > Navigate > Horizon Root Cause Analysis** in the widget toolbar to view information about the object in the **Horizon Root Cause Analysis** dashboard.

Note vGPU widgets are not installed by default. To obtain them, see "Import vGPU Dashboards" in *vRealize Operations for Horizon Installation*.

Table 1-3. Horizon Help Desk Widgets

Widget	What It Shows
Horizon Connected Sessions	All connected VDI desktop sessions, RDS desktop sessions, and application sessi in the other widgets.
Session Related Metrics	Health, alerts, workload, and other metrics related to the object selected in the **Se**
	Note **TX Bandwidth** is not displayed for Horizon 7.3 Blast sessions.
VM Metrics	Health, workload, and other metrics for the virtual machine associated with the se
Session Processes	Information about in-guest desktop processes and their resource usage. To displa toolbar and click **Go**.
Session Logon Breakdown	AppStack attachment time, profile and shell loading time, and session interaction t
User Desktop Application Launch History	Desktop applications launched by users.
Host Metrics	Health, workload, and other metrics for the ESXi host of the virtual machine assoc
All Environment Alerts	All alerts on the system. You can click an alert to see details.
Selected User Session Alerts	Alerts for the selected session. You can click an alert to see details.
Selected Session Related Objects	Objects related to the selected session. Select an object to see related informatio
Horizon Client Details	IP addresses and the name and type of machine for the selected session.
Virtual Desktop	Adapter type, object type, policy, collection state, and collection status of the virt
vGPU	vGPUs for the selected session.
Selected vGPU Related Objects	Objects related to the selected vGPU.
User	Adapter type, object type, policy, collection state, and collection status of the user
VM Host	Adapter type, object type, policy, collection state, and collection status of the ESX

Horizon Infrastructure Dashboard

Use the **Horizon Infrastructure** dashboard to quickly assess the health, workload, and connectivity
of the infrastructure that supports your Horizon environment.

Table 1-4. Horizon Infrastructure Widgets

Widget	What It Shows
Horizon Infrastructure Hosts	Hosts in your Horizon environment.
Horizon Datastores	Datastores in your Horizon environment.
Horizon VDI Desktop VMs	VDI desktop virtual machines in your Horizon environment.
Horizon RDS Hosts	RDS hosts in your Horizon environment.

Horizon User Sessions Dashboard

Use the **Horizon User Sessions** dashboard to obtain an overview of all sessions running in your Horizon environment.

Table 1-5. Horizon User Sessions Widgets

Widget	What It Shows
VDI Desktop Sessions	All VDI desktop sessions in your environment. Point to any session for details.
Top VDI Desktop Session PCoIP Latency	VDI desktop sessions with the highest PCoIP latency.
Top VDI Desktop Session PCoIP TX Bandwidth	VDI desktop sessions with the highest PCoIP transfer bandwidth.
Top VDI Desktop Session PCoIP Packet Loss	VDI desktop sessions with the highest PCoIP packet loss rate.
Top VDI Desktop Session Logon Time	VDI desktop sessions with the longest logon time.
RDS Desktop Sessions	All RDS desktop sessions in your environment. Point to any session for details.
Top RDS Desktop Session PCoIP Latency	RDS desktop sessions with the highest PCoIP latency.
Top RDS Desktop Session PCoIP TX Bandwidth	RDS desktop sessions with the highest PCoIP transfer bandwidth.
Top RDS Desktop Session PCoIP Packet Loss	RDS desktop sessions with the highest PCoIP packet loss rate.
Top RDS Desktop Session Logon Time	RDS desktop sessions with the longest logon time.
Application Sessions	All application sessions in your environment. Point to any session for details.
Top Application Session PCoIP Latency	Application sessions with the highest PCoIP latency.
Top Application Session PCoIP TX Bandwidth	Application sessions with the highest PCoIP transfer bandwidth.
Top Application Session PCoIP Packet Loss	Application sessions with the highest PCoIP packet loss rate.
Top Application Session Logon Time	Application sessions with the longest logon time.

Horizon VDI Pools Dashboard

Use the **Horizon VDI Pools** dashboard to view the performance of VDI desktop pools and sessions in your Horizon environment. VDI desktop pools include linked-clone, instant-clone, automated, and manual desktop pools.

Table 1-6. Horizon VDI Pools Widgets

Widget	What It Shows
VDI Desktop Pools	All VDI desktop pools in the environment and their type, health, capacity used, an information in the other widgets.
Desktop Applications	All configured applications hosted by a VDI desktop. **Note** You must manually configure applications that you want to appear in the **De** Desktop Applications.
VDI Desktop Pool VMs	All virtual machines in the selected desktop pool. Point to any virtual machine for

Table 1-6. Horizon VDI Pools Widgets (continued)

Widget	What It Shows
Top VDI Desktop VM CPU Workload	VDI desktop virtual machines with the highest CPU workload.
Top VDI Desktop VM Memory Workload	VDI desktop virtual machines with the highest memory workload.
Top VDI Desktop VM Datastore IO Workload	VDI desktop virtual machines with the highest datastore I/O workload.
Top VDI Desktop VM Network IO Workload	VDI desktop virtual machines with the highest network I/O workload.
VDI Desktop Pool Indicator Metrics	Metrics for the selected desktop pool and a graph of how they have changed over
Desktop Application Users	History of user logon information for the selected application.
VDI Desktop Sessions	All desktop sessions in the selected desktop pool. Point to any session for details.
Top VDI Desktop Session PCoIP Latency	VDI desktop sessions with the highest PCoIP latency.
Top VDI Desktop Session PCoIP TX Bandwidth	VDI desktop sessions with the highest PCoIP transfer bandwidth.
Top VDI Desktop Session TX Packet Loss	VDI desktop sessions with the highest transfer packet loss rate.
Top VDI Desktop Session Logon Time	VDI desktop sessions with the longest logon time.

Horizon RDS Pools Dashboard

Use the **Horizon RDS Pools** dashboard to view the performance of the RDS farms, hosts, desktop pools, and application pools in your Horizon environment.

Table 1-7. Horizon RDS Pools Widgets

Widget	What It Shows
Farms	RDS farms, their health and type, and the number of sessions, desktops, and appl widgets.
RDS Hosts	All RDS hosts. Point to a host for details.
Top RDS Host CPU Workload	RDS hosts with the highest CPU workload.
Top RDS Host Committed Bytes In Use	RDS hosts with the most committed bytes in use.
Top RDS Host Disk Transfers Per Second	RDS hosts with the most disk transfers per second.
Top RDS Host Bytes Sent Per Second	RDS hosts that send the most bytes per second.
RDS Desktop Pools	RDS desktop pools and their health and session information.
RDS Desktop Sessions	All RDS desktop sessions. Point to a session for details.
Top RDS Desktop Session PCoIP Latency	RDS desktop sessions with the highest PCoIP latency.
Top RDS Desktop Session PCoIP TX Bandwidth	RDS desktop sessions with the highest PCoIP transfer bandwidth.
Top RDS Desktop Session PCoIP Packet Loss	RDS desktop sessions with the highest PCoIP packet loss rate.

Table 1-7. Horizon RDS Pools Widgets (continued)

Widget	What It Shows
Top RDS Desktop Session Logon Time	RDS desktop sessions with the longest logon time.
Application Pools	Application pools and their health and number of instances.
Application Sessions	All application sessions in your environment. Point to any session for details.
Top Application Session PCoIP Latency	Application sessions with the highest PCoIP latency.
Top Application Session PCoIP TX Bandwidth	Application sessions with the highest PCoIP transfer bandwidth.
Top Application Session PCoIP Packet Loss	Application sessions with the highest PCoIP packet loss rate.
Top Application Session Logon Time	Application sessions with the longest logon time.

Horizon Applications Dashboard

Use the **Horizon Applications** dashboard to view the status and performance of application pools
and their associated farms, hosts, instances, and users.

Table 1-8. Horizon Applications Widgets

Widget	What It Shows
Application Pools	All application pools in the environment. Select an application pool to see related i
Application Instances	Running instances of the selected application pool, including the user name, sessi each instance.
Application Users	Users that launched the selected application during the specified time period. You three time periods. The default setting is the past hour.
Application Pool Relationship	Parent and children objects of the selected application pool.
Application Instance Resource Trend	Usage of application instance resources over time. You can click the **Time Range** i see trends. The default setting is the past hour.

Horizon Desktop Usage Dashboard

Use the **Horizon Desktop Usage** dashboard to view usage data for the VDI desktop pools in your
Horizon environment.

Table 1-9. Horizon Desktop Usage Widgets

Widget	What It Shows
All Desktop Pools	All VDI desktop pools in the environment along with session and connection inform to see related information in the other widgets.
Pool Desktop Sessions	All sessions for the selected desktop pool and logon information.
Running Application/Process	Information about in-guest desktop processes and their resource usage. To displa toolbar and click **Go**.
Pool Events	Timeline of events and alerts for the selected pool. You can set filtering criteria on

Table 1-9. Horizon Desktop Usage Widgets (continued)

Widget	What It Shows
Top Pool Alerts	The most significant active alerts for the selected pool.
Desktop Resource Trend	Resource workload and metrics for the selected pool over time. You can click the ? you want to see trends. The default setting is the past hour.
User VDI Desktop Resource Consumption	Pool resources consumed by each VDI desktop user.

Horizon User Session Details Dashboard

Use the **Horizon User Session Details** dashboard to view detailed information about all types of sessions running in your Horizon environment.

Table 1-10. Horizon User Session Details Widgets

Widget	What It Shows
Horizon Remote Sessions	All VDI desktop sessions, RDS desktop sessions, and application sessions in your ?
Session Indicator Metrics	Session health, workload, logon time, latency, frame rate, and PCoIP and Blast me
Session Logon Breakdown	Time metrics for AppStack attachment, profile and shell loading, and session inter
Session Processes	Session processes.
Session Health & Events	Timeline of health and alerts for the selected session. You can set filtering criteria ?
Users	All active users in the current environment.
Applications Launched By User	Users that opened the selected application in the specified time period.
Session Related Objects	Objects related to the selected session.
Desktop Application Launched By User	Users that opened the selected desktop application in the specified time period.

Horizon RDS Host Details Dashboard

Use the **Horizon RDS Host Details** dashboard to view detailed information about RDS hosts in your Horizon environment, including host health, PCoIP-related data, detailed session data, and user resource consumption.

Table 1-11. Horizon RDS Host Details Widgets

Widget	What It Shows
RDS Hosts	All RDS hosts in the environment with their collection status, health, and other me ?
RDS Host Indicator Metrics	Key host metrics, including health, workload, sessions, and PCoIP latency, bandwi ?
RDS Host Processes & Users	Information about in-guest host processes and their resource usage. To display in ? toolbar and click **Go**.
RDS Host Sessions	Desktop and application sessions running on the selected host. The collection stat ? latency are displayed in sortable columns.

Table 1-11. Horizon RDS Host Details Widgets (continued)

Widget	What It Shows
User Resource Consumption	Host resources consumed by each user, including CPU and storage metrics.
RDS Host Health and Events	Timeline of host health and alerts. You can set filtering criteria on the widget toolb

Horizon Adapter Self Health Dashboard

Use the **Horizon Adapter Self Health** dashboard to view health and licensing information for vRealize Operations for Horizon adapter instances and the broker agents that are connected to them.

Table 1-12. Horizon Adapter Self Health Widgets

Widget	What It Shows
Horizon Adapter	All Horizon Adapter instances and their collection status and number of desktops the **Horizon Adapter Status** and **Horizon Adapter Statistics** widgets.
Horizon Adapter Status	Length of the last collection period, number of desktops that sent data samples du instance received during that period.
Horizon Adapter Statistics	Key adapter instance metrics over time. You can click the **Time Range** icon in the The default setting is the past hour.
License Usage History	License usage over time. You can click the **Date Controls** icon in the toolbar to co hour. You can also click the **Options** icon in the upper right corner to save a snaps position of the chart in the widget.
Active License Alerts	License-related alerts for the selected adapter instance. You can click an alert to s
Horizon Broker Agent	All broker agents and their collection status and time. Select a broker agent to see
Horizon Broker Agent Status	Collection time, number of user sessions, and number of events for the selected b
Horizon Broker Agent Topology Collection Statistics	Key metrics for topology collection on the selected broker agent.
Horizon Broker Agent Metric Collection Statistics	Key metrics for metric collection on the selected broker agent.
Horizon Broker Agent Event DB Collection Statistics	Key metrics for event collection on the selected broker agent.

Broker Agent Metrics

Metric collection metrics are sent every five minutes, topology collection metrics are sent every hour, and event database collection metrics are sent when there are relevant events. For this reason, broker agent metrics might be outdated when compared with the metrics on other dashboards. In addition, if no events have been received during the past six hours, event-related metrics might display **No Data** even though data has been collected.

Horizon End User Experience Dashboard

Use the **Horizon End User Experience** dashboard to monitor infrastructure performance that might negatively impact user session experience.

The objects displayed on this dashboard can be used for root cause analysis. Click an object and select **Dashboard Navigation > Navigate > Horizon Root Cause Analysis** in the widget toolbar to view information about the object in the **Horizon Root Cause Analysis** dashboard.

Note vGPU widgets are not installed by default. To obtain them, see "Import vGPU Dashboards" in *vRealize Operations for Horizon Installation*.

Table 1-13. Horizon End User Experience Widgets

Widget	What It Shows
vCPU Experience	Virtual machines and hosts in order of specified CPU metric. You can specify a me Select an object to display related information in the **vCPU Relationship** and **vCPU
vCPU Relationship	Parent and child objects of the selected virtual machine or host.
vCPU Ready% Chart	Changes over time for a metric associated with the selected virtual machine or hos the **vCPU Experience** widget is used to create this chart.
Session Experience	User sessions in order of specified metric. You can specify a metric in the **Configur display related information in the **Session Relationship** and **Session Chart** widgets
Session Relationship	Parent and child objects of the selected session.
Session Chart	Changes over time for a metric associated with the selected session. The metric se **Experience** widget is used to create this chart.
vGPU 3D Utilization Experience	vGPUs in order of percentage of computing resources used. You can specify a me Select an object to display related information in the **vGPU 3D Utilization Relation
vGPU 3D Utilization Relationship	Parent and child objects of the selected vGPU.
vGPU 3D Utilization Chart	Changes over time for a metric associated with the selected object. The metric sel **Utilization Experience** widget is used to create this chart.
vGPU Memory Utilization Experience	vGPUs in order of percentage of memory used. You can specify a metric in the **Co session to display related information in the **vGPU Memory Utilization Relationshi
vGPU Memory Utilization Relationship	Parent and child objects of the selected object.
vGPU Memory Utilization Chart	Changes over time for a metric associated with the selected object. The metric sel **Utilization Experience** widget is used to create this chart.
vDisk Experience	Virtual machines and datastores in order of specified latency metric. You can spec toolbar. Select an object to display related information in the **vDisk Relationship** a
vDisk Relationship	Parent and child objects of the selected virtual machine or datastore.
vDisk Latency Chart	Changes over time for a metric associated with the selected virtual machine or dat in the **vDisk Experience** widget is used to create this chart.
vRAM Experience	Virtual machines in order of specified RAM metric. You can specify a metric in the object to display related information in the **vRAM Relationship** and **vRAM Chart** w
vRAM Relationship	Parent and child objects of the selected virtual machine.
vRAM Chart	Changes over time for a metric associated with the selected virtual machine. The n **vRAM Experience** widget is used to create this chart.

Table 1-13. Horizon End User Experience Widgets (continued)

Widget	What It Shows
Active Session Alerts	All alerts for active Horizon sessions.
Pool Critical Alerts	Number of critical alerts for VDI desktop pools.

Horizon Root Cause Analysis Dashboard

Use the **Horizon Root Cause Analysis** dashboard to obtain a detailed view of an object's metrics for use in further analysis.

To use this dashboard, first locate an object on the **Horizon Help Desk** or **Horizon End User Experience** dashboard that you want to analyze. Click the object and select **Dashboard Navigation > Navigate > Horizon Root Cause Analysis** in the widget toolbar. The object is displayed in the **Selected Object Relationship** widget, and metrics and alerts for the object are displayed in the other widgets. You can also select another object in the **Selected Object Relationship** to view its metrics.

In the **Selected Object Analysis Snapshot** widget, you can select one or more metrics to display charts showing their changes over time in the **Selected Metric Chart** widget. The widget can contain metrics from more than one object.

In the **Selected Metric Chart** widget toolbar, you can click the **Time Range** icon in the toolbar to set the period of time in which you want to see trends. You can also click the **Options** icon in the upper right corner to save a snapshot of the chart, download its data as a CSV file, or change the position of the chart in the widget.

Using the Horizon Reports

You can use predefined templates to generate reports about your Horizon objects. These reports provide information about remote desktop and application usage, desktop and application pool configuration details, and license compliance.

You can see a list of all report templates and generated reports by clicking **Dashboards** in the main menu and then **Reports** in the left pane. Enter `Horizon` in the **Quick filter** text box to display only Horizon reports. You can also double-click a Horizon object and select the **Reports** tab to view all report templates available for the object and all generated reports associated with it.

Table 1-14. Horizon Reports

Template Name	Objects	Report Content
Horizon Application Instance Usage	■ Hosted application	CPU and memory usage.
Horizon Application Pool Details	■ Application pool ■ Pod pools tier ■ Horizon pod	Application pool configuration and application pool, RDS farm, and RDS host usage information.

Table 1-14. Horizon Reports (continued)

Template Name	Objects	Report Content
Horizon Application Pool Usage	■ Application pool ■ Pod pools tier ■ Horizon pod	Application instances running, session durations, and last logon timestamps.
Horizon Application Usage Report	■ Horizon pod ■ Application pool	Pool name, farm name, times launched, peak concurrent instances, and total usage time over the past seven days.
Horizon Desktop Application Instance Usage	■ Desktop application instance	CPU and memory usage.
Horizon Desktop Application Usage	■ Desktop application ■ Horizon pod ■ Desktop applications tier	Times a desktop application was launched, peak concurrent instances, and total usage time.
Horizon Desktop Pool Usage	■ VDI desktop pool ■ RDS desktop pool ■ Pod pools tier ■ Horizon pod	Number of connected and disconnected sessions, session durations, and last logon timestamps.
Horizon Pod License Compliance	■ Horizon pod	Current license usage, highest daily usage, and trends over the past 30 days.
Horizon Pool Usage Overview	■ Pod pools tier ■ Horizon pod	Desktop and application pool session usage.
Horizon RDS Desktop Pool Details	■ RDS desktop pool ■ Pod pools tier ■ Horizon pod	Session and instance information for RDS pools.
Horizon User Session Statistics	■ User	Session and instance duration over the past seven days.
Horizon VDI Desktop Pool Details	■ VDI desktop pool ■ Pod pool tier	Usage, configuration, source, sessions, desktops, users, connection time, PCoIP latency, errors, and desktop status.
Horizon VDI Desktop Session Statistics	■ VDI desktop pool ■ Pod pool tier	Connection, logon, PCoIP, and workload statistics.

Maintaining vRealize Operations for Horizon

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You can modify your vRealize Operations for Horizon configuration at any time to respond to changes in your Horizon environment.

This chapter includes the following topics:

- Modify Broker Agent Settings
- Stop or Restart the Broker Agent Service
- Configure Desktop Applications
- Clean Up Objects
- Uninstall vRealize Operations for Horizon

Modify Broker Agent Settings

If your Horizon environment changes after the initial configuration of the broker agent, you can modify the broker agent settings on the Horizon Connection Server host where the broker agent is installed.

Procedure

1 Log in to the Horizon Connection Server host using a domain account that is part of the local administrators group.

2 Select **Start > VMware > vRealize Operations for Horizon Broker Agent Settings**.

3 Click through each page of the wizard and make any necessary changes.

- Pair the broker agent to a different adapter instance or use a different credential.
- Update Horizon Connection Server or event database credentials.
- Add or remove desktop pools from the scope of monitored objects.
- Add or remove App Volumes Manager installations and Unified Access Gateway appliances from the scope of monitored objects.
- Modify collection interval, timeout, and logging settings.

4   On the **Ready To Complete** page, review your settings and click **Finish**.

The **Broker Agent Config Utility for Horizon** wizard closes, and the broker agent service is restarted.

Stop or Restart the Broker Agent Service

You can stop, start, and restart the broker agent service on the Horizon Connection Server host where the broker agent is installed.

Procedure

1   Log in to the Horizon Connection Server host using a domain account that is part of the local administrators group.

2   Select **Start > VMware > vRealize Operations for Horizon Broker Agent Settings**.

3   Click **Next** until the **Broker Agent Service** page is displayed.

4   Click the **Start**, **Stop**, or **Restart** button to make the necessary change.

The status of the broker agent service is shown next to **Current Status**.

5   Click **Next** and click **Finish** to exit the wizard.

Configure Desktop Applications

You manually configure desktop applications that you want to appear on dashboards and reports.

Procedure

1   Open the `/usr/lib/vmware-vcops/user/plugins/inbound/V4V_adapter3/conf/v4v-desktop-app-config.properties` file on the vRealize Operations Manager master node.

2   Add entries for the desktop applications that you want to monitor.

Use the *name*,*full-path*,*pod-name* format for application entries. If you do not specify a pod name, the application is monitored on all pods.

For example, the following entry monitors Microsoft Notepad on a pod named Cluster-SERVER621:

```
myapp,c:\windows\notepad.exe,Cluster-SERVER621
```

3   (Optional) Enable application instance monitoring. If you do not enable this feature, the system displays only the desktop applications tier and desktop applications objects.

a   Open the `/usr/lib/vmware-vcops/user/plugins/inbound/V4V_adapter3/conf/v4v.properties` file on the vRealize Operations Manager master node.

b   Change the value of `enableDesktopApplicationInstance` to `true`.

4 Restart all nodes that collect data from the affected pods.

```
service vmware-vcops --full-restart
```

These nodes might be remote collector nodes or the master node. You can also choose to restart the entire cluster.

Results

The configured desktop applications are displayed on vRealize Operations for Horizon dashboards and reports.

Clean Up Objects

Some objects might continue to appear on the dashboards even after agents have stopped collecting data about them. You can set a time after which such objects will be cleaned up.

Procedure

1 Open the `/usr/lib/vmware-vcops/user/plugins/inbound/V4V_adapter3/conf/` `v4v.properties` file on the vRealize Operations Manager master node.

2 Modify the value of parameters whose cleanup time you want to change.

The value is given in days. Enter a floating-point number for a period of time less than one day. For example, 0.5 is twelve hours and 0.0417 is one hour. An empty value indicates that the object is never cleaned up.

Parameter	Default Value	Description
timeToExpire.VirtualMachine	30	Virtual machines
timeToExpire.UserDesktop	30	VDI sessions
timeToExpire.RDSSession	30	RDS sessions
timeToExpire.AppSession	30	Application sessions
timeToExpire.RDSApplication	30	Hosted applications
timeToExpire.ViewNetwork	30	View network objects
timeToExpire.DesktopApplicationInstance	30	Desktop application instances
timeToExpire.User		Users
timeToExpire.ViewPool		VDI pools
timeToExpire.AppPool		Application pools
timeToExpire.RDSPool		RDS pools

Parameter	Default Value	Description
timeToExpire.RDSFarm		RDS farms
timeToExpire.RDSServer		RDS servers

3 Log in to the vRealize Operations Manager user interface as an administrator.

4 In the menu, click the **Administration** tab and in the left pane click **Solutions**.

5 Select **VMware Horizon** in the upper pane and restart collection on each adapter displayed in the lower pane.

Results

Objects will be cleaned up from the dashboards after one hour and from vRealize Operations Manager after two hours.

Uninstall vRealize Operations for Horizon

If you no longer want to use vRealize Operations for Horizon, you can uninstall the solution and broker agents.

Desktop agents that are installed as part of Horizon Agent cannot be independently uninstalled.

Procedure

1 Uninstall broker agents.

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

    b Select **Control Panel > Programs > Programs and Features**.

    c Select **VMware vRealize Operations for Horizon Broker Agent** and click **Uninstall**.

2 Uninstall the vRealize Operations for Horizon solution.

    a Log in to the vRealize Operations Manager user interface as an administrator.

    b In the menu, click the **Administration** tab and in the left pane click **Solutions**.

    c Select **VMware Horizon** and click the **Uninstall solution** icon.

Troubleshooting vRealize Operations for Horizon

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You can follow troubleshooting procedures to view log files and resolve some problems that might occur after you install and configure vRealize Operations for Horizon.

This chapter includes the following topics:

- Create a Support Bundle
- Download vRealize Operations for Horizon Broker Agent Log Files
- Download vRealize Operations for Horizon Desktop Agent Log Files
- View the Collection State and Status of a Horizon Adapter Object
- Viewing Horizon Adapter Log Files
- Modify the Logging Level for the Horizon Adapter
- Remove Adapter Instance
- Clean Up Objects
- Firewall Rules
- Licensing
- Communication Issues Between Horizon Adapter and Agents
- Post Upgrade Configurations
- Agents-Related Issues
- Missing Metrics
- Logon Duration Missing

Create a Support Bundle

If the Horizon Adapter does not operate as expected, you can create a vRealize Operations Manager support bundle that includes log and configuration files for analysis.

Procedure

1   Log in to the vRealize Operations Manager user interface as an administrator.

2   In the menu, click the **Administration** tab and in the left pane select **Support > Support Bundles**.

3   Click the **Create Support Bundle** icon.

4   Select the type of support bundle and the nodes to include and click **OK**.

5   After the status of the support bundle changes to **Succeeded**, select the support bundle and click the **Download Support Bundle** icon.

6   (Optional) View the files in the support bundle or send the support bundle to VMware for support.

Download vRealize Operations for Horizon Broker Agent Log Files

If the vRealize Operations for Horizon broker agent does not operate as expected, you can download the broker agent log files and send the log files to VMware for support.

By default, broker agent log files are purged after one week.

Procedure

1   Log in to the Horizon Connection Server host where the broker agent is installed as an administrator.

2   Navigate to `C:\ProgramData\VMware\vRealize Operations for Horizon\Broker Agent\logs` on the Horizon Connection Server host.

    The `logs` directory contains the broker agent log files.

3   Use an archive program to create a ZIP file that contains the log files in the `logs` directory.

4   Send the ZIP file to VMware for support.

Download vRealize Operations for Horizon Desktop Agent Log Files

If the vRealize Operations for Horizon desktop agent is not operating as expected, you can download the desktop agent log files from the remote desktop and send the log files to VMware for support.

Horizon administrators can use the `vdmadmin` command to create a Data Collection Tool (DCT) bundle that contains to log files from one or more remote desktops. For information about creating DCT bundles, see the Horizon administration document for your Horizon version.

Prerequisites

Verify that you can use Horizon Client to connect to the remote desktop.

Procedure

1   Use Horizon Client to connect to the remote desktop from which to collect the desktop agent log files.

2   On the remote desktop, navigate to `C:\ProgramData\VMware\vRealize Operations for Horizon\Desktop Agent\logs` and locate the desktop agent log files.

Desktop agent log file names begin with `v4v-` and `v4-*` (For example, `v4-msgserver.log`).

3   Use an archive program to create a ZIP file that contains the desktop agent log files.

4   Send the ZIP file to VMware for support.

View the Collection State and Status of a Horizon Adapter Object

You can view collection state and status information for a adapter object in the vRealize Operations Manager user interface. This information can help you diagnose and troubleshoot adapter problems.

You can also view important metrics, statistics, and license information for Horizon adapter instances on the Horizon Adapter Self Health dashboard. See Horizon Adapter Self Health Dashboard.

Procedure

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

2   Click the **Administration** tab and click **Environment Overview**.

3   Expand **Adapter Instances** and click **Horizon Adapter Instance**.

Horizon adapter instance objects appear on the **List** tab in the right pane.

4   Point to the icon in the **Collection State** column to see whether vRealize Operations Manager should be collecting data for the adapter instance object.

The collection state indicates whether vRealize Operations Manager should be collecting data for the object.

Option	Description
Collecting	Object is set to collect data.
Not Collecting	Object is set to not collect data.
Starting	Collection is starting.
Stopping	Collection is stopping.
Updating	Object is being updated.
Failed	Object configuration problem.
In Maintenance	Object is in scheduled maintenance.

Option	Description
In Maintenance (Manual)	Object is in manual maintenance.
Removing	Object is being removed.

5   Click the icon in the **Collection State** column to view more information about the collection state.

Option	Description
Adapter Instance	Name of the adapter instance.
Collector Name	Name of the collector on which the adapter instance is running.
Last Heartbeat	Amount of time since vRealize Operations Manager received a heartbeat message from the adapter instance. A long period of time might indicate a connection problem.
Heartbeat Sleep Time	Heartbeat sleep time value, which determines the interval between heartbeat messages. The default heartbeat sleep time value is 10 seconds.
Status	Status message from the collector.
Last Collection Time	Amount of time since the end of the last collection cycle and the number of metrics that the adapter instance collected during that cycle.
Last Collection Duration	Length of time of the last collection cycle.
Metric Sparklines	Graphical representations of the last collection cycle duration and the number of metrics and objects that the adapter collected during that cycle.

6   Point to the icon in the **Collection Status** column to see whether vRealize Operations Manager is receiving data for the adapter instance object.

The collection status value indicates whether vRealize Operations Manager is receiving data for the object. An object has a status value only if its collection state is Collecting.

Option	Description
Data Receiving	vRealize Operations Manager is receiving data for the object
Old Data Receiving	Data is not current. The most recent value is at least five monitoring cycles old.
No Data Receiving	The adapter instance is collecting data, but vRealize Operations Manager has not received data for the object.
None	vRealize Operations Manager or collection was recently started and no data has been received for five monitoring cycles.
Unknown	Status of the object is not known.
No parent object monitoring	The adapter instance object is stopped.
Collection down	Collector or adapter instance is not operational.

What to do next

If you discover problems with a Horizon adapter instance, you can check the log files for error messages. See Viewing Horizon Adapter Log Files.

Viewing Horizon Adapter Log Files

You can access Horizon Adapter log files in vRealize Operations Manager to use for troubleshooting.

Procedure

1   Log in to the vRealize Operations Manager user interface as an administrator.

2   In the menu, click the **Administration** tab and in the left pane select **Support > Logs**.

3   In the **Group by** drop-down menu, select **Log Type**.

4   Double-click the **COLLECTOR** folder and then double-click the folder for the node on which the adapter instance is running.

5   Select a log file, enter desired values in the **Starting Line** and **Number of Lines** text boxes, and click **Go**.

Results

The specified section of the log file is displayed in the right pane. You can click the **>** icon to select a minimum level of logs to display or to search for text within the log file.

Modify the Logging Level for the Horizon Adapter

You can modify the level of logs recorded on the collector node that contains a Horizon Adapter instance.

Procedure

1   Log in to the vRealize Operations Manager user interface as an administrator.

2   In the menu, click the **Administration** tab and in the left pane select **Support > Logs**.

3   Double-click the node on which the Horizon Adapter instance is running.

4   Select the **COLLECTOR** folder and click the **Edit Properties** icon.

5   If you have not previously modified the logging level for the Horizon Adapter, add a log class.

   a   Click the **Add Log Class** icon.

   b   Enter `V4V_adapter3` and click **OK**.

6   In the lower pane, locate **V4V_adapter3** in the **Log Name** column and set a logging level in the drop-down menu in the **Logging Level** column.

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.

Clean Up Objects

Some objects might continue to appear on the dashboards even after agents have stopped collecting data about them. You can set a time after which such objects will be cleaned up.

Procedure

1   Open the `/usr/lib/vmware-vcops/user/plugins/inbound/V4V_adapter3/conf/v4v.properties` file on the vRealize Operations Manager master node.

2   Modify the value of parameters whose cleanup time you want to change.

The value is given in days. Enter a floating-point number for a period of time less than one day. For example, 0.5 is twelve hours and 0.0417 is one hour. An empty value indicates that the object is never cleaned up.

Parameter	Default Value	Description
timeToExpire.VirtualMachine	30	Virtual machines
timeToExpire.UserDesktop	30	VDI sessions
timeToExpire.RDSSession	30	RDS sessions
timeToExpire.AppSession	30	Application sessions
timeToExpire.RDSApplication	30	Hosted applications
timeToExpire.ViewNetwork	30	View network objects
timeToExpire.DesktopApplicationInstance	30	Desktop application instances
timeToExpire.User		Users
timeToExpire.ViewPool		VDI pools
timeToExpire.AppPool		Application pools

Parameter	Default Value	Description
timeToExpire.RDSPool		RDS pools
timeToExpire.RDSFarm		RDS farms
timeToExpire.RDSServer		RDS servers

3   Log in to the vRealize Operations Manager user interface as an administrator.

4   In the menu, click the **Administration** tab and in the left pane click **Solutions**.

5   Select **VMware Horizon** in the upper pane and restart collection on each adapter displayed in the lower pane.

Results

Objects will be cleaned up from the dashboards after one hour and from vRealize Operations Manager after two hours.

Firewall Rules

If you update vRealize Operations Manager, you must apply the firewall rules on vRealize Operations Manager again.

Licensing

You get the **Skipping data collection as there is not V4H license** error message if your license key is not correct.

Communication Issues Between Horizon Adapter and Agents

If you are facing communication issues between the Horizon adapter and the agents, check if the firewall ports are open. If the firewall ports are not open, then open ports 3091–3094 and ports 3099–3101.

Post Upgrade Configurations

After you upgrade vRealize Operations Manager, you must restart collector, rewrite and reopen the vRealize Operations Manager firewall ports, and restart the firewall .

Note   It is only necessary to reopen the ports if you are using vRealize Operations Manager 6.3 or earlier.

Procedure

1 After you upgrade vRealize Operations Manager, restart the collector. To do so, run the following command:

```
service vmware-vcops --full-restart
```

2 After you upgrade vRealize Operations Manager, enable the port numbers 3099, 3100, and 3101. To do so, perform the following tasks:

    a Edit the /opt/vmware/etc/vmware-vcops-firewall.conf file in the vRealize Operations Manager.

    b Add `TCPPORTS="$TCPPORTS 3099:3101"` after `TCPPORTS="$TCPPORTS 3091:3095"` in the `/opt/vmware/etc/vmware-vcops-firewall.conf` file.

    c Run `/etc/init.d/vmware-vcops-firewall restart` to restart the firewall.

    d Run `/etc/init.d/vmware-vcops-firewall status` to check the status of the firewall.

    e Restart the vRealize Operations Manager cluster after you upgrade to vRealize Operations for Horizon 6.4 from an earlier version. To do so, run `service vmware-vcops --full-restart` on the master node of the vRealize Operations Manager.

Agents-Related Issues

If Broker agent and Desktop agent are 6.1 or earlier version, disable TLS on the adapter.

TLS 1.2 is enforced by default in vRealize Operations for Horizon 6.3 and above. The adapter cannot communicate with older Desktop agents 6.1 or 6.0 running with TLS 1.0 VDI Pools, RDS Pools, or Apps running with older desktop Agents. To monitor pools running with older Desktop agents, log in to vRealize Operations for Horizon collector node and add `enforcesslprotocols = false` to the `/usr/lib/vmware-vcops/user/plugins/inbound/V4V_adapter3/work/msgserver.properties` file. Restart the vRealize Operations for Horizon adapter. Broker agent and Horizon adapter instance pairing might be required.

If the Desktop agent is not sending data to the adapter, there could be a problem with disk space for that particulate desktop VM.

Broker agent version 6.1 might cause CPU performance issues. This might be related to Horizon View event db. Check the Horizon View version and upgrade to Horizon 6.2 or later.

Missing Metrics

Logon duration is not available even after you have logged in to new sessions after setting up the vRealize Operations for Horizon environment.

Please make sure that the time is synchronized on all the components in vRealize Operations for Horizon environment (For example, connection server, EventDB server, and virtual desktop). Restart the Broker agent and log in to a new session.

Logon Duration Missing

The logon duration for some sessions might be unavailable in vRealize Operations for Horizon. This problem occurs when the time on different components is not synchronized.

Procedure

1 Synchronize all broker agents, desktop agents, and event databases to an NTP server.

2 Restart the broker agent service.

Results

When users log in to new sessions, the duration is displayed correctly.