Configuring Horizon for use with HP Anyware PCoIP Ultra

Installation Guide

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Contents

About

This guide is for integrating HP Anyware PCoIP Ultra into a Horizon environment. It covers installation of the HP Anyware components and necessary settings within Horizon.

This integration enables Horizon to manage and broker HP Anyware connections, allowing Horizon users to leverage world-class performance with HP Anyware PCoIP Ultra.

It will simplify provisioning and image management by leveraging the Horizon Console as a single management plane for both productivity and high-performance users.

PCoIP Ultra provides high frame rates, 4k resolution, lossless image quality, bit-exact color, and GPU-acceleration to users running high-performance workloads.

Requirements

Prerequisites

- VMware vSphere 8
- Horizon 8 (release 2406 or newer)
  - Horizon Agent
  - Horizon Connection Server
    - OS: Windows Server
- VMware vCenter Server
  - Managed desktop pools
- Active Directory

Software Requirements

- HP Anyware Graphics or Standard Agent (latest production version recommended)
- HP Anyware Software Client (latest production version recommended)
- HP Anyware Licenses
- HP Anyware CM/SG
  - OS: Rocky Linux 8.9
- Optional: Local Licensing Server
  - OS: Rocky Linux 8; RHEL 7, 8; CentOS 7

Other Requirements

vCenter Managed Desktop Pools

PCoIP Ultra protocol support is intended for vCenter Managed VDI pools. Horizon uses desktop pools as its basis of centralized management. To be entitled to use a pool, a user must be added to the desktop pool. Depending on the settings used in the desktop pool, it may also be necessary to assign a user to an individual VM. Assignment is required for any desktop pool where User Assignment is set to 'Dedicated Assignment.' The user must exist in Users and Groups on the Domain Controller.

Note: PCoIP Ultra is currently not supported for unmanaged desktop pools or RDSH-based desktop pools.

Using HP Anyware Client *and* Horizon Client with Graphics Agent

If you wish to use the Horizon client and Anyware client to connect to the same Anyware Graphics Agent machine, ensure that you disconnect from one before attempting to connect with the other.

Using HP Anyware Client *and* Horizon Client with Standard Agent

If you wish to use the Horizon client and Anyware client to connect, and you are using a machine without a GPU along with the HP Anyware Standard Agent, ensure that you reboot the machine between connections.

Connecting from the Horizon client may interfere with subsequent Anyware connections if the computer is not restarted between sessions. In that case, you may get the error: "Your session was interrupted. Please wait while we attempt to reconnect..." when trying to connect with Anyware. Rebooting the machine will fix it.

If using the Anyware Standard Agent, it is recommended to choose either Horizon or Anyware for connecting to that machine. This is not an issue with the Anyware Professional Graphics Agent.

Architecture Diagram
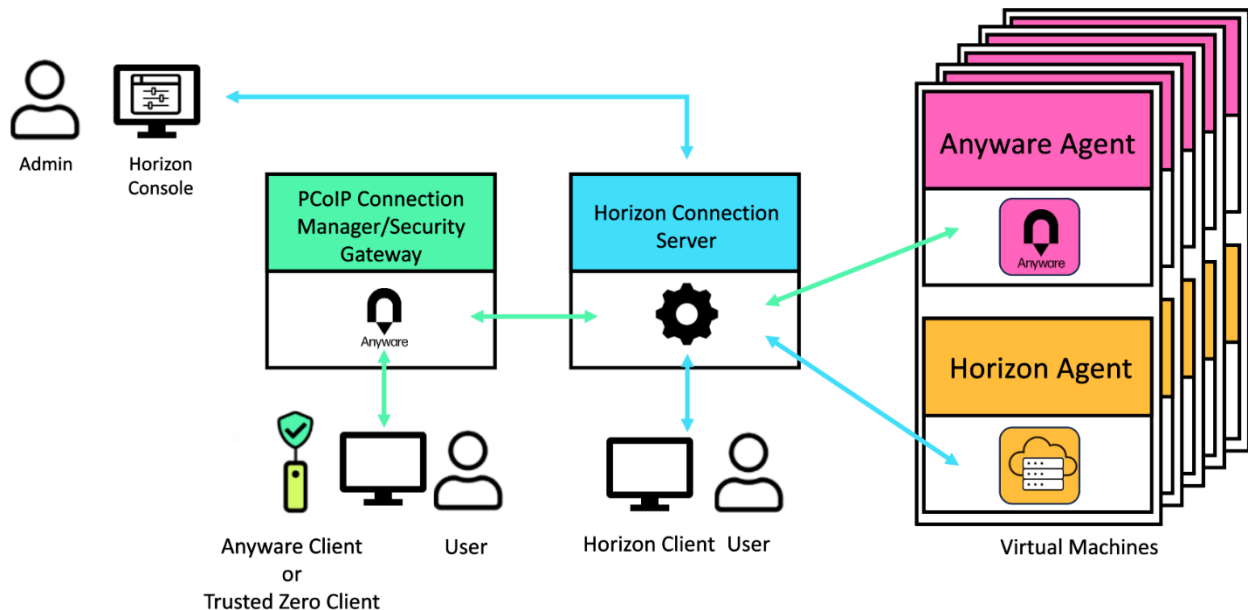
Adding HP Anyware to an existing Horizon environment

This guide assumes an existing Horizon environment.

See the [Horizon documentation](#) and [vSphere documentation](#) for installation.

Installation Overview

1) Install HP Anyware Connection Manager/Security Gateway (CM/SG)
    a) Set broker URL to IP of Horizon Connection Server
    b) Enable "horizon=true" flag
2) Configure Anyware agent host system
    a) Install Horizon agent
    b) Install HP Anyware agent
3) Configure Horizon Settings for PCoIP Ultra
4) Configure Horizon Console to Mange Desktop Pools, Machines, and Users

HP Anyware Licensing

HP Anyware offers concurrent user licensing, which requires the agents to access a license server. Most deployments use HP Anyware's automatic cloud licensing service, and do not need a local license server. If you wish to use the cloud licensing service, this section is not necessary.

However, if your site is not connected to the public internet, then the local license server is required. Additionally, if you want to manage a large fleet of cloned machines, the local license server may be preferable.

Here are 2 options for licensing cloned machines:

1) Cloud License Server
    a. Image the machine unregistered, then register via PowerShell during scripted installation or after installation.
       See: Licensing the Agent
2) Local License Server
    a. This will require first removing the license(s) from the cloud license server pool.
       See: HP Anyware Licensing Portal
    b. Information on setting up a local license server can be found here: Installing - Teradici License Server

If you have already configured the Connection Manager without a local license server but want to add a local license server later, you can set the license server URL in the Connection Manager at any time.

To set the License Server URL in the Connection Manager:

1. On the Connection Manager machine, use a text editor to open /etc/ConnectionManager.conf
2. Set the LicenseServerAddress parameter with the address of your local license server: http://{license-server-address}:{port}/request
3. Save and close the configuration file
4. Restart the Connection Manager

Install HP Anyware Connection Manager (CM/SG)

The PCoIP Connection Manager enables connections between PCoIP clients and PCoIP agents installed on remote desktops. It uses a required third-party connection broker to authenticate users, query available desktops and applications, and then establish a PCoIP connection between the client and the selected desktop.

In this case, the PCoIP Connection Manager will use Horizon as the broker.

Installing the PCoIP Connection Manager follows the standard procedure, plus the addition of a specific Horizon flag.

See the full CM/SG Documentation here.

Create a new VM with Rocky Linux 8.9 OS

Recommend system requirements:

- CPU: 2
- Memory: 8 GB
- Hard Disk: 40 GB

Configure Rocky Linux 8.9 Machine: Ethernet Adapter and Name

After installing the Rocky Linux 8.9 OS, connect to the machine

1. Type `nmtui` and press Enter
2. Select 'Edit a connection' and press Enter
3. Select the desired Ethernet adapter and press Enter
4. Use arrow keys to select 'Automatically Connect' and press Spacebar to toggle On
5. Use arrow keys to select 'OK' and press Enter
6. Use arrow keys to select 'Back' and press Enter
7. Select 'Activate a Connection' and Enter
8. Verify Ethernet adapter is marked active (or press Enter to Activate)
9. Use arrow keys to select 'Back' and press Enter
10. Select 'Set system hostname' and press Enter
11. Define the hostname (e.g. AnywareCMSG.yourdomain.tld)
12. Use arrow keys to select 'OK' and press Enter
13. Select Quit and press Enter
14. Type `dnf install open-vm-tools` (answer 'y' when prompted)
15. Type `dnf update` (answer 'y' when prompted)
16. Type `reboot`

Take note of the IP address of this machine.

Install HP PCoIP Connection Manager

Follow the instructions to [install for online environments](#) or [install for offline environments](#).

Follow the above linked installation instructions as written, except when you get to the last step to run the `pcoip-cmsg-setup install` command, include the `--enable-horizon=true` flag.

Flags specific to this installation are:

`--self-signed`

`--debug`

`--accept-policies`

`--broker-url https://<IP of Horizon Connection Server>`

`--enable-horizon=true`

If you are utilizing the [local license server](#), add the `--license-server-URL=` command as well.

Example snippet for online environment:

```
sudo pcoip-cmsg-setup install --self-signed --debug --accept-policies
--broker-url https://<IP>:443 --enable-horizon=true
```

The command will take some time to run and when it completes, you should see a message confirming "PCoIP Connection Manager installation complete."

Configure HP Anyware PCoIP Agent Host System

Provision a new Windows VM or utilize an existing one and install the software below.

Install Horizon Agent

Download and install the Horizon 8 Agent.

During installation, ensure that 'Enable the Remote Desktop capability on the computer' is selected. (If Windows Remote Desktop is already enabled, then you will not be prompted again here.)

Install the HP Anyware Agent

Download and install the HP Anyware Graphics Agent for your host machine.

Or download the HP Anyware Standard Agent for machines without a GPU.

Activate Passthrough Mode for GPU(s) for Graphics Agents

With the Graphics Agent, the VM that you will be connecting to must have access to a GPU to take advantage of the GPU-offload and auto-offload features.

Passthrough mode for GPUs in vSphere is required to link a host (physical) GPU to a Graphics Agent system. Please follow these instructions to enable PCI passthrough:

1. Login to the vSphere ESXi Client to the host system with the root user
2. Navigate to Host > Manage > Hardware > PCI Devices
3. Locate and select your graphic card
4. Use Toggle Passthrough to mark the card 'Active' in the Passthrough column

Optional: Test the Graphics Agent with PCoIP (Direct Connect)

Validate the setup of the Graphics Agent VM before attempting to add it to a Horizon Desktop pool or connect to it through Horizon. This is a direct connection test.

Download and install the HP Anyware v24.07 software client for your local client machine (Windows, Linux, or MacOS).

Take note of the local IP address of the host machine you intend to connect to.

1. On your local (client) machine, open the HP Anyware Client Software
2. Choose 'Add Connection'
3. Input the local IP and name for the host machine
4. Activate the connection and input domain administrator credentials

You should now be connected to the host machine.

Horizon Settings to Enable PCoIP Ultra

Adjustments must be made in Horizon to establish PCoIP Ultra connections to Desktop Pool VMs. These include turning off Blast Secure Gateway and adjusting the Global Settings below.

Adjust the settings for connecting with PCoIP Ultra

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Settings > Servers > Connection Servers
3. Select the connection server and click Edit
4. Deselect 'Use Secure Tunnel connection to Machine'
5. Verify 'Use PCoIP Secure Gateway for PCoIP connections to machine' is disabled
6. Select 'Do Not Use Blast Secure Gateway'

Adjust the following settings (especially in multi-domain environments)

1. Navigate to Settings > Global Settings
2. Uncheck 'Hide Domain List in Client User Interface'
3. Check 'Send Domain List'

Configure Horizon Console to Manage Desktop Pools, Machines, and Users

Enable PCoIP for Desktop Pools

Creating Desktop pools with PCoIP Ultra Enabled

1. Log in to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Desktops > Add
3. Remote Desktop Settings> PCoIP Ultra > Select Checkbox

Editing existing Desktop pools to enable PCoIP Ultra

1. Log in to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Desktops > Select Existing Desktop Pool > Edit
3. Desktop Pool Settings tab > PCoIP Ultra > Select checkbox

Enabling PCoIP Ultra when duplicating a Pool

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Desktops > Select Existing Desktop Pool > Duplicate
3. Remote Display Settings > PCoIP Ultra > Select checkbox

Enable PCoIP for Global Entitlements

Optional. Only available if you've enabled Cloud Pod Architecture.

Enabling PCoIP Ultra when adding Global Entitlement

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Global Entitlement > Add
3. Name and Policies > Allow PCoIP Ultra > Select checkbox

Enabling PCoIP Ultra when editing an existing Global Entitlement

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Global Entitlement > Select the entitlement
3. Edit > Allow PCoIP Ultra > Select checkbox

Assign Users to a Desktop Pool

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Desktops
3. Select the Desktop Pool, then click Entitlements > Add Entitlements
4. Click Add
5. Deselect Groups, then click Find
6. Select Users to grant entitlement and click OK
7. Select all users added and click OK

Note: Alternatively, you can use Domain Groups or Access Groups in Horizon to accomplish the desired entitlements.

Add VM to Desktop Pool

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Desktops
3. Select the Desktop Pool, then click the Machines tab
4. Click Add
5. Select the checkbox next to the machine(s) to add, click OK

Assign Users to a VM

1. Login to Horizon Connection Server Administration console (e.g. https://horizoncs.domain.com/admin)
2. Navigate to Inventory > Desktops
3. Select the Desktop Pool, then click the Machines tab
4. Select the checkbox next to the machine, then go to More Commands > Assign User
5. Search for the desired user, select the radio next to the user and click OK

Enable Remote Access for Users

If your users are not granted Remote Access, they won't be able to connect.

1. Login to Horizon Connection Server Administration console (e.g. https://orizoncs.domain.com/admin)
2. Navigate to Users and Groups
3. Click the Remote Access tab
4. Click Add
5. Adjust search criteria to filter to desired user(s) and click Find
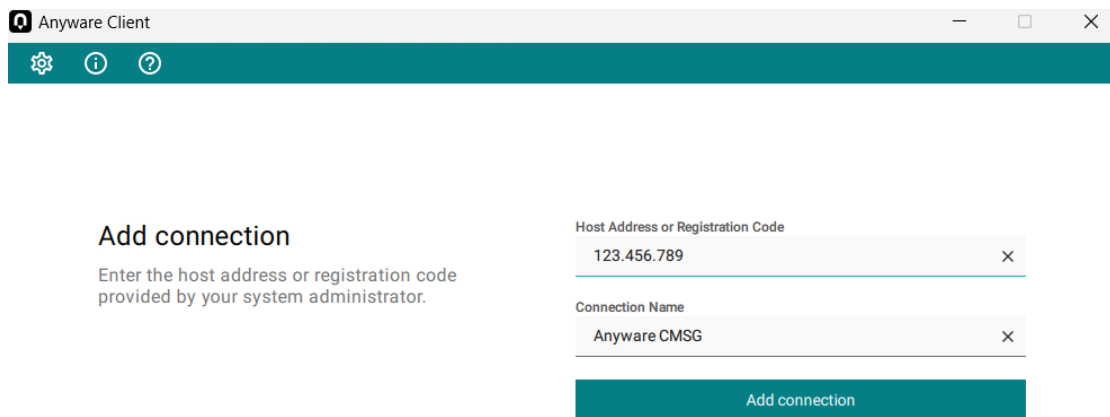6. Select the user(s) and click OK

Using HP Anyware PCoIP Ultra with Horizon

Download and install the PCoIP software client for your local client OS (Windows, Linux, or MacOS).

Initial Setup—Saving the Connection

Obtain the IP address of the Anyware Connection Manager/Security Gateway (CM/SG) from your administrator.

1. On your local (client) machine, open the HP Anyware Client software
2. Choose 'Add Connection'
3. Input the IP of the Anyware CM/SG in the "Host Address or Registration Code" field
4. Choose a name for this connection to enter in the "Connection Name" field
5. Click "Add connection"

Using a Saved Connection

1. Click on the Connection Name of the connection you created above
2. Enter the username and password for the user that's assigned to that remote machine
3. Click Connect

You should now be connected to the host machine.

Troubleshooting

Using HP Anyware Client and Horizon Client

Using HP Anyware Client and Horizon Client with Graphics Agent

If you wish to use the Horizon client and Anyware client to connect to the same Anyware Graphics Agent machine, ensure that you disconnect from one before attempting to connect with the other.

Using HP Anyware Client and Horizon Client with Standard Agent

If you wish to use the Horizon client and Anyware client to connect, and you are using a machine without a GPU along with the HP Anyware Standard Agent, ensure that you reboot the machine between connections.

Error Messages

Unable to Connect. Authentication failure. You are not entitled to use the system.

Ensure that you have [assigned the user to a pool](#) and you have [enabled Remote Access](#) for that user.

User authentication failed. Re-enter username and password.

Ensure that you have entered a valid username and password.

Error 6404: The connection broker failed to allocate the resource. Please try again.

Make sure the user is assigned to a machine. Ensure that a different user isn't currently logged in to the machine.

Error 6808: Command failed due to a connection broker communication failure.

Navigate to Settings > Global Settings, then click Edit. Ensure that "Send Domain List" is checked and "Hide domain list in client user interface" is unchecked.