

Anyware License Server 24.03 for Linux Administrators' Guide

24.03

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Overview

HP Anyware Linux License Server Administrators' Guide

This guide is intended for system administrators who are either:

- deploying the HP Anyware Linux License Server as part of their Cloud Access Software solution where the License Server **does not** have connection to the public internet, or
- deploying **internet-connected** HP Anyware Linux License Server as part of their Cloud Access Software solution.

i These instructions apply to online (internet-connected) and darksite deployments

The instructions and specifications included in this guide are common to both online and offline deployments of the HP Anyware License Server, unless otherwise noted. Each section of this guide indicates whether it applies to online use cases, offline, or both.

HP Anyware Linux License Server is a standalone service that handles both PCoIP session license registrations and PCoIP session request authorization.

This documentation assumes that you have a thorough understanding of virtual machines and networking concepts, including firewall configuration. Knowledge of Linux systems in general and RHEL or CentOS in particular will also be helpful, although all required Linux commands are included here.

i Important: The License server is only required for local license management

This software is not required for organizations using Cloud Licensing.

 Important: Access to teradici.flexnetoperations.com required

Before you can activate licenses with an offline license server, you must be given access to <https://teradici.flexnetoperations.com>. To request access, create a ticket with [HP Anyware Support](#). Be prepared to provide a valid activation key, and the name and email address of a contact person who should have access.

What's New in This Release

Release 24.03 of the includes the following:

Support for Darksite Failover Configuration

Version 24.03 supports the configuration of failover license servers in darksite environments. A second standalone PCoIP License Server can now be configured as a backup to a primary PCoIP License Server in a complete darksite environment. If the primary PCoIP License Server fails or loses connectivity, the backup PCoIP License Server will automatically begin validating sessions, thereby ensuring greater fault tolerance and continuity of operations.

Viewing Binary Content from Request.bin & Reponse.bin No Longer Available

In version 24.03 of PCoIP Linux License Server, the ability to view binary information from the **request.bin** and **reponse.bin** files is removed for security reasons. In the previous the `pcoip-activate-offline-license -v <response.bin>` command could be used to view the binary content. Now, this feature is no longer available.

About the HP Anyware License Server

Offline Environments Online Environments

The HP Anyware License Server is a standalone software service that handles both PCoIP session license registrations and PCoIP session request authorization. The HP Anyware License Server maintains its license activation and checkout states in a local trusted storage database.

When a HP Anyware agent attempts to establish a new PCoIP session, it will first request authorization from its assigned HP Anyware License Server. The HP Anyware License Server checks to see if an activated PCoIP session license is available in its trusted storage, and authorizes the session if one is. Each PCoIP session activation consumes one PCoIP session license.

Most PCoIP deployments use Teradici automatic Cloud Licensing Service, and do not need a local license server. If your deployment cannot use cloud licensing, either because the site is not connected to the public internet or you need to retain control of your own session licenses, the **HP Anyware License Server is required**.

The HP Anyware License Server can run as an **online service** with a connection to the outside internet, or in an **offline environment** without internet access. The installation and operation procedures are different in each use case.

Note: Session license types

Teradici cloud licensing uses *registration codes*, which are different than the *activation keys* used by the license server. The type of license is specified at purchase.

About Offline Environments

A HP Anyware License Server that has no connection to the outside internet is considered to be in an *offline environment* (this scenario is also often referred to as a *dark site*). Since the HP Anyware License Server cannot reach the internet, both software installation and license management must be done indirectly, via a separate internet-connected machine.

 **Important: Offline deployments can be in the cloud**

The term *offline environment* does not imply a dependency on physical hardware or datacenter deployments. The HP Anyware License Server can be deployed securely as an offline service on AWS EC2 cloud-based infrastructure with appropriate firewall configuration.

About Online Environments

A HP Anyware License Server that has a connection to the outside internet is considered to be an online environment. Since the HP Anyware License Server can reach the internet, both software and license management can be done directly and no other resources are required.

About Session Licensing

Offline Environments Online Environments

PCoIP session licenses are managed in pools, which are created at the time of purchase. Each new purchase of licenses is assigned an activation code, which will be used to activate, view, or return all the licenses in that purchase. You can use licenses from multiple activation codes simultaneously.

For example, when you purchase 30 licenses, you will receive an activation code that allows you to activate, view, or return those 30 licenses. If you subsequently purchased additional licenses, you would receive an additional activation code for each new bundle.

In this example, you own 60 licenses, managed by three different activation codes:



An example of three license pools. All of these licenses can be activated on the same license server, or spread across multiple servers.

Cloud Licensing FAQ

For more information, including answers to frequently asked licensing questions, see [FAQ - Licensing Cloud Access Software](#).

Using PCoIP Session Licenses

PCoIP session licenses must be activated on a HP Anyware License Server before they can be used. You can activate licenses on one license server, or split them among multiple HP Anyware License Servers depending on your deployment requirements.

Once installed and running, the HP Anyware License Server will authorize new PCoIP sessions until it runs out of available active licenses.

About the Licensing Grace Period

HP Anyware agents request validation from their HP Anyware License Server each time a connection is established. Once a HP Anyware agent has successfully established a licensed PCoIP session, it will continue to work even if the HP Anyware License Server is subsequently unavailable or offline. This grace period extends 7 days from the first unsuccessful validation attempt. This enables you to perform system maintenance or upgrades without disrupting your existing users.

Once a connection is re-established with the HP Anyware License Server, the grace period is reset. The next failed connection will initiate another 7-day grace period.

There is no user-facing indication that a HP Anyware agent is in a grace period. Administrators can check the status of individual HP Anyware agents by referring to the agent logs, or by using the `pcoip-validate-license` command on the HP Anyware Agent machine.

Behavior After License Expiry

If the license is expired but is within a day, the agent might check out a license from grace period. This is the intended behavior and covers time-zone differences between a HP Anyware Agent and the license server.

If the license is expired by more than one day, the agent will not check out this license.

Note: Not All Customers Will Experience This Behavior

Not all customers experience this behavior. If you are geographically closer to the Flexnet operations server and your end users check out machines during daytime hours, you will likely never experience this.

For specific command information, refer to the appropriate Anyware Agent guides:

- [Graphics Agent for Windows Administrators' Guide](#)
- [Graphics Agent for Linux Administrators' Guide](#)
- [Standard Agent for Windows Administrators' Guide](#)

- [Standard Agent for Linux Administrators' Guide](#)

System Requirements

Offline Environments Online Environments

The HP Anyware License Server requires an environment with the following minimum specifications:

	Requirement
Available disk space	500 MB
Available RAM	4 GB minimum available RAM
CPU	2GHz (2 cores)
Supported virtual environments	Amazon EC2 VMware ESXi 6.5 QEMU-KVM 2.7 Google Compute Cloud instances Microsoft Azure (tech preview)
Operating System	CentOS 7 RHEL 7, 8 Rocky Linux 8
Compatible HP Anyware agents	2.11+ (any agent type)

Important Notes

- The HP Anyware License Server 24.03 is compatible with all HP Anyware agents version 2.11 or newer.
- The HP Anyware License Server must be visible on the network to any HP Anyware agents that use it for license validation.
- The HP Anyware License Server 24.03 is currently supported as a technology preview on Microsoft Azure machines. It is intended for early adopters and may not work as expected in all situations. It is not appropriate for production systems.
- Offline license activation requires the ability to transfer files from the HP Anyware License Server to an internet-connected machine. If you are not able to transfer files in this manner, the HP Anyware Support team will facilitate license activation for you. See [Activating Licenses in an Offline Environment](#) for more information.

⚠ Caution: Systems with less than 4GB of available RAM may fail

You should have at least 4GB of available RAM on the License Server machine. Instances with insufficient memory may not work.

⚠ Caution: Don't install more than one type of license server on the same machine

The HP Anyware License Server version 24.03 cannot be installed on the same machine as the HP Anyware License Server 1.x or an NVIDIA GRID License Server.

⚡ Danger: Migrating from RHEL 7 to RHEL 8

If you have currently deployed a HP Anyware License Server on RHEL 7 and wish to upgrade to RHEL 8, **do not upgrade the operating system in place**. Updating the operating system could invalidate your PCoIP licenses. See [Migrating from RHEL 7 to RHEL 8](#) for a supported migration path.

Frequently Asked Questions

Offline Environments **Online Environments**

How can I activate all the licenses available under an activation code?

You must explicitly state the number of licenses to activate for each activation code when invoking `pcoip-activate-offline-license`. If you do not know the number of licenses available, consult the verification email you received when purchasing the bundle of licenses.

Are there tools available to help use the HP Anyware License Server?

HP Anyware maintains a public Github repo with open-source scripts that you can use in conjunction with the HP Anyware License Server. For more information, see [Additional Tools](#).

Can I install multiple license servers?

Yes. We recommend using multiple license servers if you are deploying services in remote global regions, and want to optimize performance by having a license server located near your HP Anyware host machines. Each license server must be activated separately with a pool of licenses.

How do I move licenses from one HP Anyware License Server to another?

To move licenses between servers, you must first return all the licenses controlled by the origin server, then activate them on the destination server. For more information, see the following links:

- [Returning Licenses in Offline Environments](#)
- [Activating Licenses in an Offline Environment](#)
- [Returning Licenses in Online Environments](#)
- [Activating Licenses in Online Environments](#)

Can I upgrade my HP Anyware License Server without impacting my users?

Yes. When an active HP Anyware agent that has established at least one successful PCoIP session cannot validate its license for any reason, it will enter a 7-day grace period. During the grace period, HP Anyware agents will continue to work normally.

You can safely take the HP Anyware License Server offline and update the software without affecting users during this 7-day grace period. Once the HP Anyware License Server is back online, the HP Anyware agents exit the grace period.

Can I use a failover server?

Yes, you can set up a second HP Anyware License Server to act as a backup in case the primary server is down or unreachable. Setting up a failover server requires an internet connection. For more information, see the following links:

- [Setting up a Failover Server Pair in Offline Environments](#)
- [Setting up a Failover Server Pair in Online Environments](#)

How do I know if a HP Anyware agent has entered a grace period?

HP Anyware agents that have entered grace periods will indicate their status in their logs. You can also use the `pcoip-validate-host` command on the HP Anyware Agent machine to check the status of an individual HP Anyware agent.

Which password does the `pcoip-set-password` command set?

The command `pcoip-set-password` sets the HP Anyware License Server Administrator's password, which controls access to the license server's trusted storage. Trusted Storage is a secured database where license keys and license server settings are stored. The password is required for administrators to add, remove, or view license information.

Note: HP Anyware License Server administrator's Password

The HP Anyware License Server administrator's password controls access to privileged HP Anyware License Server commands. It is not the same as your system user password.

What happens when PCoIP session licenses expire?

HP Anyware agents relying on expired licenses will no longer establish PCoIP connections. This does not affect the remote host machine; only the ability to connect to it using PCoIP.

What is the Unique Identifier Associated with my License Server's VM?

In some debugging or support scenarios, you may need to find the unique identifier of your License Server's machine. To get the ID number, use the `pcoip-get-license-server-id` command.

This command requires the License Server password. You can include it with the command using the `-p` option. If you omit the password, you will be prompted for it.

Installation Guide

Installing the License Server in an Offline Environment

Offline Environments

The method you will use to install the HP Anyware License Server in an offline environment depends on **whether you can open a temporary internet connection** to the License Server machine.

- **If you can open a temporary connection to the internet**, [install the software and dependencies directly and then remove the internet connection](#).
- **If you cannot connect to the internet**, obtain dependencies and License Server software via a temporary internet-connected machine and then [transfer the files yourself](#).

Important: Migrating from RHEL 7 to RHEL 8

If you have currently deployed a HP Anyware License Server on RHEL 7 and wish to upgrade to RHEL 8, **do not upgrade the operating system in place**. Updating the operating system could invalidate your licenses. See [Migrating from RHEL 7 to RHEL 8](#) for a supported migration path.

Caution: Do not install more than one type of license server on the same machine

The HP Anyware License Server version 24.03 cannot be installed on the same machine as the HP Anyware License Server 1.x or an NVIDIA GRID License Server.

Before you Begin

Before you begin installing, read the [password rules](#).

Note: Default password

The default password in new installations is `1P@ssw0rd!`, where the leading `1` is a numeral one and `0` is a zero. When setting the password on a clean installation, use this as your current password. **Change the default password immediately.** Until the default password is changed, commands can be issued to the license server without your knowledge.

Installing With a Temporary Internet Connection

1. Open the internet connection on the License Server machine.
2. SSH into your License Server machine.
3. For RHEL/CentOS 7, install `wget` and `yum-utils` (*skip this step for RHEL/Rocky Linux 8*):

```
sudo yum install wget
sudo yum install yum-utils
```

4. Install the `pcoip-license-server` repository, using the shell script available [here](#). The script will discover your operating system and configure the repo appropriately.
5. Install Java:

- **For RHEL/CentOS 7:**

```
sudo yum install java-11-openjdk
```

- **For RHEL/Rocky Linux 8:**

```
sudo dnf install java-11-openjdk
sudo dnf install tzdata-java
```

6. Install the license server:

• **For RHEL/CentOS 7:**

```
sudo yum install -y pcoip-license-server
```

• **For RHEL/Rocky Linux 8:**

```
sudo dnf install -y pcoip-license-server
```

7. Wait for the HP Anyware License Server to start (about 30-60 seconds).

8. Verify that the HP Anyware License Server is running by using the following command:

```
sudo systemctl status flexnetls-TERADICI
```

9. Set your HP Anyware License Server administrative password:

```
sudo pcoip-set-password
```

You will be prompted for the old and new passwords.

10. Remove the internet connection.

11. If you need to change the HP Anyware License Server's listening port, see [Configuring the License Server's Listening Port](#).

The HP Anyware License Server starts automatically when it is installed.

Installing With No Internet Connection

If you cannot open an internet connection on the License Server machine, you must create a temporary machine to download the License Server software and its dependencies and then manually transfer and install them.

1. Create a disposable internet-connected RHEL (or CentOS) machine for downloading and inspecting packages. This machine should be identical to the license server machine.
2. SSH into the new temporary machine.
3. Install the Teradici repository by running the [shell script available here](#). The script will discover your operating system and configure the repo appropriately.

4. Create a new directory to hold the downloaded package manager files. In the following examples, we are creating folders in your user home directory (~/).

```
cd ~/
```

```
mkdir ./rpms/  
mkdir ./updates/
```

5. Download the required updates to the new /updates/ folder:

- **RHEL/CentOS 7**

```
sudo yum update -y --downloadonly --downloadaddir=./updates
```

- **RHEL/Rocky Linux 8**

```
sudo dnf update -y --downloadonly --downloadaddir=./updates
```

6. Install the dependencies from the /updates/ folder:

- **RHEL/Rocky Linux 8.7**

```
cd ~/updates/  
sudo dnf install --disablerepo="*" -y *
```

```
cd ~
```

7. Download the RPM packages to the new /rpms/ folder:

- **RHEL/CentOS 7**

```
sudo yum install --downloadonly --downloadaddir=./rpms pcoip-license-server -y
```

- **RHEL/Rocky Linux 8**

```
sudo dnf install --downloadonly --downloadaddir=./rpms pcoip-license-server -y  
cd ~  
sudo dnf install --downloadonly --downloadaddir=./rpms tzdata-java -y
```

- Transfer the RPMs directory containing the packages to your license server machine using any acceptable method, such as a USB flash drive.

 **The temporary machine is no longer needed**

The temporary machine can be safely destroyed at this point.

- Connect to the license server machine using a console.
- Install the updates from the `updates/` directory you transferred earlier. The following example assumes the `updates/` directory is in the user home directory; if you put it somewhere else, modify these instructions accordingly:

- **RHEL/CentOS 7**

```
cd ~/updates/  
sudo yum install --disablerepo="*" -y *
```

- **RHEL/Rocky Linux 8**

```
cd ~/updates/  
sudo dnf install --disablerepo="*" -y *
```

- Install the HP Anyware License Server from the `rpms/` directory you transferred earlier. The following example assumes the `rpms/` directory is in the user home directory:

- **RHEL/CentOS 7**

```
cd ~/rpms/  
sudo yum install --disablerepo="*" -y *
```

- **RHEL/Rocky Linux 8**

```
cd ~/rpms/  
sudo dnf install --disablerepo="*" -y *
```

 **Note: Time Required for Installation**

When installing the HP Anyware License Server offline, installation times of up to 10 minutes are possible. This is expected behavior.

12. Set your HP Anyware License Server administrative password:

```
sudo pcoip-set-password
```

You will be prompted for the old and new passwords.

13. If you need to change the HP Anyware License Server's listening port, see [Configuring the License Server's Listening Port](#).

The HP Anyware License Server starts automatically when it is installed.

⚠ Do not modify the trusted storage database

The HP Anyware License Server installs a trusted storage database in `/var/opt/flexnetLs/TERADICI`.

If the contents of this directory are moved or modified, the license server will consider the trusted storage corrupted. The server will log an error and refuse to start.

Installing the License Server in an Online Environment

Online Environments

To get up and running quickly with the HP Anyware License Server in an online (internet-connected) environment, follow these instructions.

Important: Migrating from RHEL 7 to RHEL 8

If you have currently deployed a HP Anyware License Server on RHEL 7 and wish to upgrade to RHEL 8, **do not upgrade the operating system in place**. Updating the operating system could invalidate your licenses. See [Migrating from RHEL 7 to RHEL 8](#) for a supported migration path.

Caution: Don't install more than one type of license server on the same machine

The HP Anyware License Server version 24.03 cannot be installed on the same machine as the HP Anyware License Server 1.x or an NVIDIA GRID License Server.

Before You Begin

Before you begin, make sure you read the [password rules](#).

Installation Procedure

1. SSH into your License Server machine.
2. For RHEL/CentOS 7, install `wget` and `yum-utils` (*skip this step for RHEL/Rocky Linux 8*):

```
sudo yum install wget
sudo yum install yum-utils
```


3. Install the `pcoip-license-server` repository, using the shell script available [here](#). The script will discover your operating system and configure the repo appropriately.

4. Install Java:

- **For RHEL/CentOS 7:**

```
sudo yum install java-11-openjdk
```

- **For RHEL/Rocky Linux 8:**

```
sudo dnf install java-11-openjdk
sudo dnf install tzdata-java
```

5. Install the license server:

- **For RHEL/CentOS 7:**

```
sudo yum install -y pcoip-license-server
```

- **For RHEL/Rocky Linux 8:**

```
sudo dnf install -y pcoip-license-server
```

6. Wait for the HP Anyware License Server to start (30-60 seconds).

7. Verify that the HP Anyware License Server is running by using the following command:

```
sudo systemctl status flexnetls-TERADICI
```

8. Set your HP Anyware License Server administrative password:

```
sudo pcoip-set-password
```

You will be prompted for the old and new passwords.

⚠ Change the default password immediately

Until the default password is changed, commands can be issued to the license server without your knowledge.

9. If possible, enable HTTPS/TLS for communication with the HP Anyware License Server, as described [here](#).

10. Configure your firewall:

- Configure your corporate firewall to **block all incoming external connections**. The HP Anyware License Server does not need to accept incoming connections from the outside internet.
- On the HP Anyware License Server machine, first **block all incoming TCP connections**, then allow incoming connections *only* on these specific ports:

- **Allow HP Anyware agent subnets to connect on your configured listening port**

By default, the HP Anyware License Server listens on port 7070 using HTTP. If you have not modified the default and have not enabled HTTPS/TLS, then open port 7070; if you have modified the default installation then adjust the port number accordingly.

If you change the default listening port for the HP Anyware License Server, you must also change the port configuration on all HP Anyware agents that use it.

- **If using SSH to administer the server**, allow your administrative subnet to connect on port 22.
- Open port 443 to outgoing connections. If you are using a proxy server, this requirement may be different; review your proxy server configuration.

11. If you block outgoing connections over the internet, you will need to [whitelist the licensing service addresses](#).

12. Restart the system to apply the changes:

```
sudo systemctl restart flexnetls-TERADICI.service
```

Upgrading the License Server

Offline Environments Online Environments

While an upgrade is in progress, the License Server will be offline. Current PCoIP sessions will not be affected, and existing users will still be able to establish PCoIP connections. New users and connections that do not already have validated licenses will be unable to connect until the upgrade is complete.

Check the location of the .jks file before upgrading the license server

If you enable HTTPS, ensure that the .jks file is not placed under the `/opt/flexnetls/TERADICI/` folder, which may be overwritten by future upgrades, as described [here](#). You may save the .jks file to another location before upgrade.

Upgrading the License Server in an Offline Environment

To update the HP Anyware License Server on an offline machine, obtain a new installer and run it in place. You do not need to uninstall first. Follow the instructions for [Installing HP Anyware License Server in an Offline Environment](#).

Upgrading the HP Anyware License Server in an Online Environment

• For RHEL/CentOS 7:

```
sudo yum update
```

• For RHEL/Rocky Linux 8:

```
sudo dnf update
```

Validating the Upgrade

After the upgrade finishes, check the following items:

1. Run the following commands, the reported version number should match the expected installer version.

- **For RHEL/CentOS 7:**

```
yum info pcoip-license-server
```

- **For RHEL/Rocky Linux 8:**

```
dnf info pcoip-license-server
```

2. Run the [pcoip-list-licenses](#) command to verify that current licenses were not impacted by the upgrade procedure.

 **Warning: Downgrade is not supported**

Downgrading the HP Anyware License Server to a previous version may result in application failure or corrupted data, and is not supported.

Migrating the License Server from RHEL 7 to RHEL 8

Offline Environments Online Environments

If you have an existing HP Anyware License Server on RHEL 7 and wish to upgrade the underlying server to RHEL 8, you must **first create a new machine and transfer the licenses to it. DO NOT** upgrade the operating system in place.

1. On the existing RHEL 7 machine, record the number of activated licenses using the `pcoip-list-licenses` command, replacing `<password>` with your HP Anyware License Server password:

```
sudo pcoip-list-license
```

Note the number of licenses returned by this command. This number will be used to verify the migration in the last step.

2. Depending on your deployment, create an online or an offline RHEL 8 machine.
3. Do one of the following:
 - For offline deployments, follow the instructions in [installing the license server with no internet connection](#) to install the HP Anyware License Server on the new machine.
 - For online deployments, follow the instructions in [installing the license server in an online deployment](#) to install the HP Anyware License Server on the new machine.
4. Return the licenses on the RHEL 7 machine. Follow [these](#) instructions for offline deployments. If you have an online deployment, [follow these instructions](#).

The command will provide the number of licenses returned; note this value.
5. On the new RHEL 8 machine, activate the same number of licenses that were returned in the previous step, using the instructions [for offline deployments](#) or [online deployments](#). When following these instructions, use the number returned in the previous step for `<license count>`.
6. Repeat steps 4 and 5 for each of your activation codes, until all licenses have been returned from the old machine and re-activated on the new one.

7. On the new machine, verify that all the licenses have been successfully activated with the `pcoip-list-licenses` command, replacing `<password>` with your HP Anyware License Server password:

```
sudo pcoip-list-license
```

The value returned by this command should match the total number of licenses returned on the old license server.

Setting Up Failover Servers

Configuring a Failover Server in Online Environments

Online Environments

Installation Notes

Before you begin, read the following installation notes.

- The two HP Anyware License Servers must be the same version.
- Both HP Anyware License Servers should be configured identically, with some allowable differences. For example, you can specify different PORT values for the two HP Anyware License Servers.
- The two servers should be in different physical locations, or at least on independent hypervisors.
- The clocks of both the servers must be accurate, synchronized, and in the same time zone. If they are not, unpredictable behavior can occur.
- The main HP Anyware License Server with the failover information **before** must be configured the backup server is registered. If the backup HP Anyware License Server is registered before configuration is complete, create a ticket with HP Anyware Support for assistance.

Installation Procedure

Follow the steps described in this section to install the failover pair.

1: INSTALL THE BACKUP SERVER

Install the new HP Anyware License Server that will act as your backup. **Do not** register it yet. For more information, see [Installing the license server in an online environment](#).

2: SET THE HOST ID OF THE BACKUP SERVER ON THE MAIN SERVER

The backup server's ID must be available to the main server. This ID is registered with HP Anyware to create a failover pair.

1. Start the backup HP Anyware License Server.
2. On the backup HP Anyware License Server, run the following command and note the backup server's host ID in the response:

```
pcoip-get-license-server-id
```

3. Stop the *backup* HP Anyware License Server.

```
sudo systemctl stop flexnetls-TERADICI.service
```

4. Switch to the *main* HP Anyware License Server and start it.

```
sudo systemctl start flexnetls-TERADICI.service
```

5. On the *main* HP Anyware License Server, use a text editor to set the `backup-hostid` in the `/opt/flexnetls/TERADICI/local-configuration.yaml` file to the backup server's host ID.

Host IDs must be of the same type

The host ID for both the main server and backup server must be the same type (for example, two VM UUIDs or two Ethernet MAC addresses).

6. Save and exit the editor.
7. Shut down the *main* HP Anyware License Server.

```
sudo systemctl stop flexnetls-TERADICI.service
```

3: REGISTER THE HP ANYWARE LICENSE SERVERS

1. Start the *main* HP Anyware License Server.

```
sudo systemctl restart flexnetls-TERADICI.service
```


2. Run the following command:

```
pcoip-list-licenses
```

3. Once you see a valid response from `pcoip-list-licenses`, start the backup HP Anyware License Server.

4: ENABLE FAILOVER SUPPORT ON THE BACKUP SERVER

The following sections use the HP Anyware License Server Administrator command-line tool, which is a utility provided at `/opt/flexnetls/TERADICI/admintools/flexnetlsadmin.sh`. You can invoke it by providing its full file path on the command line.

If you'd like to invoke the tool as `flexnetlsadmin.sh` (omitting the full path), add `/opt/flexnetls/TERADICI/admintools` to your machine's `$PATH` variable and restart your console application.

The examples that follow use the shorter command form, as if you had modified your system `$PATH`. If you haven't, replace `flexnetlsadmin.sh` with `/opt/flexnetls/TERADICI/admintools/flexnetlsadmin.sh` in all of these sample commands.

Passwords

You will be prompted for a password when using these commands. The password is the HP Anyware License Server administrative password, as set by `pcoip-set-password`.

On the *backup* server, use `flexnetlsadmin.sh` to set the following HP Anyware License Server policy settings:

- `fne.syncTo.mainUri`: Set this to the URI of the main HP Anyware License Server, using the format: `https://<licenseServerHostName>:<port>/fne/bin/capability`. Replace `<licenseServerHostName>` and `<port>` with values of your own.

Example:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -config -set fne.syncTo.mainUri=https://  
<MainLicenseServerHostName>:7071/fne/bin/capability
```

- `fne.syncTo.enabled`: Set this value to `true`.

Example:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -config -set fne.syncTo.enabled=true
```

5: CONFIGURE RESPONSE REFERENCE INFORMATION ON THE MAIN SERVER

Capability responses returned to client devices can include the URI for the main and backup HP Anyware License Servers. Configure one or both of these policy settings to include the corresponding URIs in the response reference information:

- **To include the main HP Anyware License Server URI in client responses:** set the `licensing.main.uri` value using `flexnetlsadmin.sh`. Example:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -config -set licensing.main.uri =https://  
<MainLicenseServerHostName>:7071/fne/bin/capability
```

- **To include the backup HP Anyware License Server URI in client responses:** set the `licensing.backup.uri` value using `flexnetlsadmin.sh`. Example:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -config -set licensing.backup.uri=https://  
<BackupLicenseServerHostName>:7071/fne/bin/capability
```

6: ACTIVATE LICENSES

If no licenses were activated on the main HP Anyware License Server, activate them now. For more information, see [activating licenses in an online deployment](#).

The active licenses will be automatically synced to backup HP Anyware License Server.

7: SYNCHRONIZE CHANGES ON BOTH THE SERVERS

If you make changes on the main server that need to be synchronized with the backup, restart the `flexnetls-TERADICI.service` on the backup:

```
systemctl restart flexnetls-TERADICI.service
```

8: VERIFY FAILOVER CONFIGURATION

After both servers have received their license rights, verify the failover scenario role of each HP Anyware License Server. Each server's failover role is included in capability responses delivered to it.

Use the `flexnetlsadmin.sh` tool from each server machine to verify its failover role.

- Example command on the **main** HP Anyware License Server:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -status
```

You should see a backup server specified in the response to this command.

- Example command on the **backup** HP Anyware License Server:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -status
```

This response *should not* contain a backup server item.

Configuring a Failover Server in Offline Environments

Offline Environments

Installation Notes

Before you begin, read the following installation notes.

- The two HP Anyware License Servers must be the same version.
- Both HP Anyware License Servers should be configured identically, with some allowable differences. For example, you can specify different PORT values for the two HP Anyware License Servers.
- The two servers should be in different physical locations, or at least on independent hypervisors.
- The clocks of both the servers must be accurate, synchronized, and in the same time zone. If they are not, unpredictable behavior can occur.
- The main HP Anyware License Server with the failover information **before** must be configured the backup server is registered. If the backup HP Anyware License Server is registered before configuration is complete, **create a ticket with HP Anyware Support** for assistance.

Installation Procedure

Follow the steps described in this section to install the failover pair.

1: INSTALL THE BACKUP SERVER

Install the new HP Anyware License Server that will act as your backup. **Do not** register it yet. For more information, see [Installing the license server in an offline environment](#).

1A: OPTIONALLY OPEN A TEMPORARY INTERNET CONNECTION

Temporarily connect to the Internet for both main and backup license servers. The main and backup servers must always have connectivity with each other.

Once the failover pair is registered, the Internet connection can be disconnected. After you connect the main and backup servers to the internet temporarily, perform steps 2 through 5 and then perform **Step 6 A**.

If you cannot open a temporary Internet connection, perform **Step 6 B** after performing steps 2 through 5.

2: SET THE HOST ID OF THE BACKUP SERVER ON THE MAIN SERVER

The backup server's ID must be available to the main server. This ID is registered with HP Anyware to create a failover pair.

1. Start the backup HP Anyware License Server.
2. On the backup HP Anyware License Server, run the following command and note the backup server's host ID in the response:

```
pcoip-get-license-server-id
```

3. Stop the *backup* HP Anyware License Server.

```
sudo systemctl stop flexnetls-TERADICI.service
```

4. Switch to the *main* HP Anyware License Server and start it.

```
sudo systemctl start flexnetls-TERADICI.service
```

5. On the *main* HP Anyware License Server, use a text editor to set the `backup-hostid` in the `/opt/flexnetls/TERADICI/local-configuration.yaml` file to the backup server's host ID.

Host IDs must be of the same type

The host ID for both the main server and backup server must be the same type (for example, two VM UUIDs or two Ethernet MAC addresses).

6. Save and exit the editor.
7. Shut down the *main* HP Anyware License Server.

```
sudo systemctl stop flexnetls-TERADICI.service
```

3: REGISTER THE HP ANYWARE LICENSE SERVERS

1. Start the *main* HP Anyware License Server.

```
sudo systemctl restart flexnetls-TERADICI.service
```

2. Run the following command:

```
pcoip-list-licenses
```

3. Once you see a valid response from `pcoip-list-licenses`, start the backup HP Anyware License Server.

4: ENABLE FAILOVER SUPPORT ON THE BACKUP SERVER

The following sections use the HP Anyware License Server Administrator command-line tool, which is a utility provided at `/opt/flexnetls/TERADICI/admintools/flexnetlsadmin.sh`. You can invoke it by providing its full file path on the command line.

If you'd like to invoke the tool as `flexnetlsadmin.sh` (omitting the full path), add `/opt/flexnetls/TERADICI/admintools` to your machine's `$PATH` variable and restart your console application.

The examples that follow use the shorter command form, as if you had modified your system `$PATH`. If you haven't, replace `flexnetlsadmin.sh` with `/opt/flexnetls/TERADICI/admintools/flexnetlsadmin.sh` in all of these sample commands.

Passwords

You will be prompted for a password when using these commands. The password is the HP Anyware License Server administrative password, as set by `pcoip-set-password`.

On the *backup* server, use `flexnetlsadmin.sh` to set the following HP Anyware License Server policy settings:

- `fne.syncTo.mainUri`: Set this to the URI of the main HP Anyware License Server, using the format: `https://<licenseServerHostName>:<port>/fne/bin/capability`. Replace `<licenseServerHostName>` and `<port>` with values of your own.

Example:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -
passwordConsoleInput -config -set fne.syncTo.mainUri=https://
<MainLicenseServerHostName>:7071/fne/bin/capability
```

- `fne.syncTo.enabled`: Set this value to `true`. Example:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -
passwordConsoleInput -config -set fne.syncTo.enabled=true
```

5: CONFIGURE RESPONSE REFERENCE INFORMATION ON THE MAIN SERVER

Capability responses returned to client devices can include the URI for the main and backup HP Anyware License Servers. Configure one or both of these policy settings to include the corresponding URIs in the response reference information:

- **To include the main HP Anyware License Server URI in client responses:** set the `licensing.main.uri` value using `flexnetlsadmin.sh`.

Example (replace these host names and port numbers with your own):

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -
passwordConsoleInput -config -set licensing.main.uri=https://
<MainLicenseServerHostName>:7071/fne/bin/capability
```

- **To include the backup HP Anyware License Server URI in client responses:** set the `licensing.backup.uri` value using `flexnetlsadmin.sh`.

Example (replace these host names and port numbers with your own):

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -
passwordConsoleInput -config -set licensing.backup.uri=https://
<BackupLicenseServerHostName>:7071/fne/bin/capability
```

6 A: (WITH INTERNET) ACTIVATE LICENSES

If no licenses were activated on the main HP Anyware License Server temporarily connected to the internet, activate them now. For instructions, see [activating licenses in an offline deployment](#).

Close the internet connection for both the primary and the backup HP Anyware License Server. Note that the primary and backup servers must still be connected to one another.

6 B: (DARKSITE) ACTIVATE LICENSES

If no licenses were activated on the main HP Anyware License Server in a darksite environment, activate them now. For instructions, see [activating licenses in an offline deployment](#).

Execute the same **response.bin** in the backup server to keep both the main server and the backup server in sync.

7: SYNCHRONIZE CHANGES ON BOTH THE SERVERS

If you make changes on the main server that need to be synchronized with the backup, restart the **flexnetls-TERADICI.service** on the backup:

```
systemctl restart flexnetls-TERADICI.service
```

8: VERIFY FAILOVER CONFIGURATION

After both servers have received their license rights, verify the failover scenario role of each HP Anyware License Server. Each server's failover role is included in capability responses delivered to it.

Use the `flexnetlsadmin.sh` tool on each server machine to verify its failover role.

- Example command on the **main** HP Anyware License Server:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -status
```

You should see a backup server specified in the response to this command.

- Example command on the **backup** HP Anyware License Server:

```
flexnetlsadmin.sh -server https://localhost:7071 -authorize admin -  
passwordConsoleInput -status
```

This response *should not* contain a backup server item.

Configuration Guide

Configuring the HP Anyware License Server

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The HP Anyware License Server requires minimal configuration. This section describes the configuration settings and options available.

Important: Configure Anyware Agents and Connection Managers

The HP Anyware License Server URL must be provided to the *Connection Manager* managing your Anyware agents, or to each of your *Anyware Agents* if you are not using a Connection Manager.

The License Server URL format is:

```
https://<license-server-address>:<port>/request
```

If you have not configured your HP Anyware License Server to use HTTPS/TLS, use http:// instead of https://. We strongly recommend that you **change the default protocol** from http to https.

Password Rules

Passwords should be surrounded with single quotation marks like 'password', and must conform to the following rules:

- Must be between 8 and 30 characters long
- Must contain at least one lowercase letter
- Must contain at least one uppercase letter
- Must contain at least one digit
- Must contain at least one symbol, excluding ' (single quote), " (double quote), \ (backslash), and spaces

Setting the License Server's Administrator Password

The License Server administrator's password is set using the `pcoip-set-password` command. You must have superuser (sudo) permissions to use `pcoip-set-password`.

1. Make sure you have superuser (sudo) permissions on the license server.
2. Invoke `pcoip-set-password` to set your new password.

Note: Default password

The default password in new installations is `1P@ssw0rd!`, where the leading `1` is a numeral one and `0` is a zero. When setting the password on a clean installation, use this as your current password.

- If you do not supply any flags, you will be prompted for your current and new passwords:

```
sudo pcoip-set-password
```

- You can also supply the current and new password inline, by using `-p` and `-n` flags:

```
sudo pcoip-set-password -p <current password> -n <new password>
```

You can specify the old and new passwords inline, by including the `-p` and `-n` flags; to do this, enter `sudo pcoip-set-password -p <old_password> -n <new_password>`. This method might expose your password via system loggers, and we strongly discourage it.

Registering Your Password as an Environment Variable

We recommend that you register your password as a system environment variable, which will allow you to run commands without providing the password inline via the `-p` flag. **Providing the passwords**

inline can have security implications and we recommend against it. See [Keeping Passwords Secure](#) at the top of this page for more information and methods for mitigating the security concerns.

- To register the password as an environment variable, run the following commands:

```
export HISTIGNORE="export*"
export TERADICI_LICENSE_SERVER_PASSWORD=<your_license_server_password>
```

Configuring the License Server's Listening Port

The HP Anyware License Server listens for communication from Anyware agents in your deployment on a defined listening port. By default, this listening port is set to 7070, but can be changed by specifying the PORT setting in the `/opt/flexnetls/TERADICI/local-configuration.yaml` configuration file.

Enable HTTPS/TLS

We strongly recommend enabling HTTPS/TLS for secure communications with the HP Anyware License Server. For instructions, see [Enabling TLS](#).

Important: Anyware agents and License Server must use the same port

Anyware agents are configured to use port 7070 by default. If you change the license server port, you must also change the configuration of all Anyware agents that use it.

1. Open `/opt/flexnetls/TERADICI/local-configuration.yaml` in a text editor.
2. Locate the port assignment line:

```
# HTTP listening port. Default is 7070. You can bind to an interface with
this syntax: '[127.0.0.1].7070'.

port: 7070
```

3. Change the value of port to the new value. The port number must be an integer between 1 and 65535.

 **Note: Reserved port numbers**

Port numbers below 1024 are reserved for processes running as root unless you are using port forwarding, or tools like *setcap*, *setuid*, or *authbind*.

4. Save the file and exit the editor.
5. Restart the license server for the new value to take effect:

```
sudo systemctl restart flexnetls-TERADICI
```

6. Update the configuration of any Anyware agents that communicate with this HP Anyware License Server. For instructions, see one of the following guides:

- [HP Anyware Graphics Agent for Windows Administrators' Guide](#)
- [HP Anyware Graphics Agent for Linux Administrators' Guide](#)
- [HP Anyware Graphics Agent for macOS Administrators' Guide](#)
- [HP Anyware Standard Agent for Windows Administrators' Guide](#)
- [HP Anyware Standard Agent for Linux Administrators' Guide](#)

Additional Configuration for Online Deployments

Configuration for Online Environments

Online Environments

Configuring Proxy Settings

The license server can access the Internet via a proxy to activate, return, and update its licenses. The proxy server is specified by its address and port number.

Proxy settings are configured using the `pcoip-configure-proxy` command. Only a user with superuser privileges may invoke this command.

Configure and Use a Proxy

Use `pcoip-configure-proxy` with `-s` and the following information:

- The address and port number of the proxy server, formatted as `<address>:<port>`.
- If the proxy server requires authentication, provide the username and password with the `-u` and `-p` options.

For example, to configure the license server to proxy internet traffic via a proxy server at `proxy.domain.local` on port `1234`:

```
sudo pcoip-configure-proxy -s proxy.domain.local:1234
```

This example configures the license server to proxy internet traffic via a proxy server at `192.168.0.12` on port `10443`, and provides credentials using `-u` and `-p`.

```
sudo pcoip-configure-proxy -s 192.168.0.12:10443 -u username -p password
```

View Proxy Settings

Use `pcoip-configure-proxy` with `-v`. For example:

```
sudo pcoip-configure-proxy -v
```

Validate Proxy Settings

Check the **pcoip-license-server.log** file in `/var/log/flexnetls-TERADICI`. If it contains an error message related to making a connection to FlexNet Operations, the proxy settings are incorrect.

If the proxy is working, the log will contain Updated Features or Updated License Server Instance messages.

You can view proxy settings by running the following command:

```
sudo pcoip-configure-proxy -v
```

Clear Proxy Settings

To clear proxy settings, which will stop the HP Anyware License Server from using a proxy, use `pcoip-configure-proxy` with `-c`. For example:

```
bash sudo pcoip-configure-proxy -c
```


Enabling HTTPS/TLS for PCoIP License Server

Enabling HTTPS/TLS on the License Server

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 **Important: Always use HTTPS**

The default communication protocol is HTTP, which is less secure than HTTPS. We **strongly recommend** using HTTPS when communicating with the local HP Anyware license server.

 **Warning: Only internal network usage is supported**

The HP Anyware License Server only supports company internal network usage. It is not designed to receive connections from the public internet.

TLS 1.1 Considerations

TLS 1.1 is disabled by default in RHEL/Rocky Linux 8. Attempts to use it in those operating systems may result in errors.

TLS 1.1 is insecure and we strongly recommend that you do not enable it. If you *must* enable TLS 1.1, first update the CentOS security policy to `LEGACY`.

To view the current security policy, run the following command:

```
update-crypto-policies --show
```

To set the policy to `LEGACY`, run the following command:

```
update-crypto-policies --set LEGACY
```

Once this policy is set, you can proceed with the following instructions.

Prerequisites for Using HTTPS/TLS

Before enabling HTTP/TLS, get a valid certificate and accompanying private key, and save them in the JKS (Java Key Store) format. Ensure that the JKS file has a keystore password and storepass, and they both are the same.

We **recommend using a CA-signed certificate** whenever possible, but you can use a self-signed certificate if required.

If you must use a self-signed certificate, generate one using the following command. Replace `<password>` with your own password, and `<license server="" address="">` with the IP address or FQDN of the license server:

```
keytool -genkey -keyalg RSA -alias teradiciLicenseServer -keystore
teradiciLicenseServer.jks -storepass <password> -validity 365 -keysize 2048 -
noprompt -dname "CN=<license server="" address="">, OU=Teradici PCoIP License
Server, O=Teradici Corp, L=Vancouver, ST=BC, C=CA" -keypass <password>
```

```
keytool -importkeystore -srckeystore teradiciLicenseServer.jks -destkeystore
teradiciLicenseServer.p12 -deststoretype pkcs12
```

Anywhere agents can't validate self-signed certificates for HTTPS connections unless the public certificate is installed on the machine's trust store. For more information, see the RHEL instructions on [this page](#).

Procedure

Create a new `/opt/flexnetls/certs` directory, and copy the `.jks` file into it. Do not place `.jks` file under `/opt/flexnetls/TERADICI/`, which may be overwritten by future upgrades.

Give the `.jks` file appropriate permissions:

Create an obfuscated password using Flexera's password obfuscation tool, replacing `<password>` with your password:

The output from this command shows the original password and the obfuscated password. Copy the obfuscated password (including `OBF:`) for use in the next step.

Configure the Local License Server settings to use the JKS:

Open `/opt/flexnetls/TERADICI/local-configuration.yaml` in a text editor using `sudo`.

Edit the following lines, replacing `<obfuscated password="">` with the password you copied in the previous step. The configuration options are described next:

The options are:

`port`: HTTP listen port. This is required to run the license server commands internally on the license server host. You can safely block this port externally.

`https-in/enabled`: HTTPS-in enable. Set this to true to enable HTTPS for incoming connections to the license server.

`https-in/port`: HTTPS-in port number. Set this to the HTTPS listening port for the license server.

`https-in/keystore-path`: Set this to the full path for the JKS file that will be used for encryption.

`https-in/keystore-password`: Set this to the keypass/storepass, *preferably the obfuscated password you created earlier*.

Restart the license server:

When the server comes back up, verify that the system is listening on the configured HTTP and HTTPS ports (replace the ports in this example with your own as needed):

A positive response will look similar to the following example:

Verify that you can view licenses:

If you can view licenses, you will see output similar to the following example:

```

=====
Feature ID      Feature Name      Feature Version   Feature Count Used/
Available
=====
1              Agent-Graphics   2019.0209        0/1
2              Agent-Session    2019.0209        0/1
=====

Device Information:

-----
Device Name      Feature Registered(Used Count)
-----
=====

Total feature count      : 2
Total feature count used : 0
Total uncounted features : 0
=====
...

```

Verify that the license server setting in the Connection Manager [is configured correctly](#).

When using HTTPS, it should be configured as follows (replace `<license-server-ip-or-fqdn>` with the IP or FQDN of your license server, and `<https-listen-port>` with the port number you specified in step 5):

Verify that the Anyware Agents can check out licenses.

Move to a Anyware Agent desktop machine that will use this license server.

Verify that the License Server's firewall is open by opening a browser and visiting `https://<license-server-ip-or-fqdn>:<https-listen-port>/api/1.0/health`.

If the page loads, the firewall configuration is correct.

If the page loads but throws a certificate error, the port is open but the certificate is invalid; see below for guidance.

If the page does not load, the port is most likely closed.

Verify that the Anyware Agent machine can view license information from the License Server:

```
pcoip-validate-license
```

```
LicenseServerAddress = https://<license-server-ip-or-fqdn>:<https-listen-
port>/request
```

```
=====
Name                Count          Version        Type
Expiration
=====
Agent-Graphics     1              2019.0209     CONCURRENT
2019-02-09
Agent-Session      1              2019.0209     CONCURRENT
2019-02-09

Total number of features : 2
```

```
pcoip-list-licenses
```

```
tcp6      0      0 :::7071          :::*
LISTEN    3083/java
tcp6      0      0 :::7071          :::*
LISTEN    3083/java
```

```
sudo netstat -tulpn | grep -e 7070 -e 7071
```

```
sudo systemctl restart flexnetls-TERADICI
```

```
# local-configuration.

# HTTP listening port. Default is 7070. You can bind to an interface with this
syntax: '[127.0.0.1].7070'.
port: 7070

...

# HTTPS server mode
https-in:
  # Set to true to enable
  enabled: true
  # HTTPS listening port
  port: 7071
  # Path to keystore
  keystore-path: /opt/flexnetls/certs/teradiciLicenseServer.jks
  # Keystore password. You can obfuscate this with java -jar flexnetls.jar -
  password your-password-here
  keystore-password: <obfuscated password="">

...
```

```
java -jar flexnetls.jar -password <password>
```

```
cd /opt/flexnetls/TERADICI/
```

```
sudo chown root.pcoip_license_server /opt/flexnetls/certs/
teradiciLicenseServer.jks
```

```
sudo chmod 440 /opt/flexnetls/certs/teradiciLicenseServer.jks
```

Administration Guide

Managing Offline Licenses

Offline Environments

PCoIP session licenses are purchased in bundles from HP. Each bundle is given an activation code at purchase, which controls activation and return of its session licenses. Licenses are validated by Flexera FlexNet Operations, and stored on the HP Anyware License Server's trusted storage.

Activated licenses remain linked to their license server until they are returned. No other license server instance can activate licenses that are already allocated.

Caution: Licenses can be lost

If a system hosting a HP Anyware License Server is destroyed or becomes corrupted, any licenses registered to it can no longer be returned and are effectively lost. If this happens, open a ticket with HP Anyware Support Services.

Unmapping Licenses Prior to Activation

By default, license codes are mapped to a default cloud license server provided by HP Anyware. This license code must be unmapped, and made available before it can be activated on your offline license server.

1. List your HP Anyware license servers by selecting [License Servers](#). You should see a server with the alias "Default hosted server".
2. Click the license server ID of this server.
3. Click the **Remove Add-Ons** link, which displays the current license codes and their quantity.
4. In the **Qty to Remove** box associated with the code, enter the number of licenses to be removed.
5. Select **Remove Add-Ons**. The status "Copies decreasing" is displayed, indicating that unmapping is in progress.

6. To save your changes, click the **Download capability Response** link.

- a. Delete the *.bin file that is downloaded.
- b. Refresh your browser.

The status displays "License generated", which indicates that licenses are now available to be used with your local license server.

Activating Licenses

Since offline environments have no access to the internet, PCoIP session license activation is done indirectly. To activate licenses, you must have an internet-connected machine available and a means of transferring licensing files between the connected machine and your offline HP Anyware License Server.

Important: Access to teradici.flexnetoperations.com required

Before you can activate licenses with an offline license server, you must be given access to <https://teradici.flexnetoperations.com>. To request access, create a ticket with [support](#). Be prepared to provide a valid activation key, and the name and email address of a contact person who should have access.

1. SSH into your HP Anyware License Server machine.
2. Navigate to your home directory (or another directory that you have write permissions for). To navigate to your home directory, type:

```
cd ~
```

3. Invoke `pcoip-activate-offline-license` with `-g`, the activation code, and the number of licenses to activate. Use `-p` to provide the HP Anyware License Server's administrative password inline, or leave it off to be prompted for the password:

```
pcoip-activate-offline-license -g -a <activation code> -c <license count>
```

🔥 Important: Activation codes are case-sensitive

The activation code you use here must *exactly* match the code you received from HP Anyware, including dashes and uppercase or lowercase letters.

✎ Note: License count (-c) sets the total number of active licenses for each activation code

The license count (-c) sets the *total number of licenses* that will be active for a given activation code. It does not add *c* additional licenses.

For example, if you use `pcoip-activate-online-license -a 1234567890 -c 5` and then `pcoip-activate-online-license -a 1234567890 -c 10`, you will have 10 active licenses—not 15.

This will generate a file named `request.bin` and store it in the current working directory.

4. Transfer `request.bin` to a computer that has an internet connection using any acceptable method, such as a USB flash drive.
5. Submit `request.bin` to Flexnet Operations:
 - a. Browse to <https://teradici.flexnetoperations.com> using the internet-connected machine and log in.
 - b. Log in with the email address you set up as your Flexnet Activation contact.

✎ Note: First-time only password reset

The first time you log in to Flexnet Operations, you will need to reset your password. Click **Password Finder** on the login page to reset the password.

🔥 Important: Resolving login difficulties

If you experience difficulties logging in, contact HP Anyware for help. The owner of the activation code email address can also add you as a user on the account.

- c. In the sidebar, find the *Devices* section and click **Upload Capability Request**:

teradici

HOME > DOWNLOAD CENTER > UPLOAD CAPABILITY REQUEST

License Orders
Home
Order Line Items
Recent Email Notifications

Host Licenses
Activations

Served Licenses
Device List
License Servers
Devices Served
Upload Capability Request

Usage Management
Hosted Servers

Administration ⚙️
Account Administrators
Account Members
Change Password
Your Profile

Get Help ⓘ
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FAQs
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Upload Capability Request

Locate and send the offline request file. The browser will prompt you to save the response file.

No file selected.

d. Click **Browse** and provide the *request.bin* file you transferred from the HP Anyware License Server.

e. Click **Send** to submit the request and download a response file.

If FlexNet Operations returns an error instead of a response file, there is a problem with your request file. Generate a new *request.bin* file and try again.

6. Transfer the received *response file* to the License Server machine using any acceptable method, such as a USB flash drive.

The **response.bin** file can only be used on the machine that generated the **request.bin** file.

7. Invoke `pcoip-activate-offline-license` again with `-r` and the response file received from Flexnet Operations:

```
pcoip-activate-offline-license -r 'path/to/response.bin'
```


 **Note: response.bin expires after 7 days**

The response.bin file expires after 7 days, after which it will be rejected by the License Server. If this occurs, repeat this procedure from the beginning with fresh request.bin and response.bin files.

8. Verify your activated licenses:

```
pcoip-list-licenses
```

Returning Licenses

Licenses are registered to the license server where they are activated. In order to activate them on a different license server, they must first be *returned*, or released back into the available license pool.

Licenses are returned by using `pcoip-activate-offline-license` to reduce the active license count. This activates the new (smaller) number of licenses and returns the remainder.

1. Return the desired number of licenses using the `pcoip-activate-offline-license` command. For more information, see [the Command Reference](#).
2. Note the reduced license count.
3. Follow the procedure for [Activating Licenses in an Offline Environment](#) and supply the reduced license count in step 3.

For example, if activation code `1234-ABCD-EF12-3456` has 25 active licenses and you want to return 5, you set the number of active licenses to 20:

```
pcoip-activate-offline-license -g -a 1234-ABCD-EF12-3456 -c 20
```

 **Tip: Returning all licenses**

You can return all the active licenses by supplying a count of 0 (zero):

```
pcoip-activate-offline-license -g -a 1234-ABCD-EF12-3456 -c 0
```

 **Note: Migrating Licenses**

A license may only be used on one license server instance at a time. To migrate licenses, you must return them on the first HP Anyware License Server and then activate them on the second.

Managing Online Licenses

Online Environments

PCoIP session licenses are purchased in bundles from HP. Each bundle is given an activation code at purchase, which controls activation and return of its session licenses. Licenses are validated by Flexera FlexNet Operations, and stored on the HP Anyware License Server's trusted storage.

Activated licenses remain linked to their license server until they are returned. No other license server instance can activate licenses that are already allocated.

Caution: Licenses can be lost

If a system hosting a HP Anyware License Server is destroyed or becomes corrupted, any licenses registered to it can no longer be returned and are effectively lost. If this happens, open a ticket with HP Anyware Support Services.

Unmapping Licenses Prior to Activation

By default, license codes are mapped to a default cloud license server provided by HP Anyware. This license code must be unmapped, and made available before it can be activated on your offline license server.

1. List your HP Anyware license servers by selecting [License Servers](#). You should see a server with the alias "Default hosted server".
2. Click the license server ID of this server.
3. Click the **Remove Add-Ons** link, which displays the current license codes and their quantity.
4. In the **Qty to Remove** box associated with the code, enter the number of licenses to be removed.
5. Select **Remove Add-Ons**. The status "Copies decreasing" is displayed, indicating that unmapping is in progress.
6. To save your changes, click the **Download capability Response** link.
 - a. Delete the *.bin file that is downloaded.

- b. Refresh your browser.

The status displays "License generated", which indicates that licenses are now available to be used with your local license server.

Activating Licenses

PCoIP session licenses can be activated directly when the license server is connected to the internet by using the `pcoip-activate-online-license` command. When running this command, you will be prompted for the HP Anyware License Server's administrative password.

1. SSH into your HP Anyware License Server machine.
2. Invoke `pcoip-activate-online-license`, and supply the following arguments:
 - `-a` followed by the activation code to use
 - `-c` followed by the number of licenses to activate under the specified activation code.
 - Provide the license server password on the command line with `-p` followed by the password. **If you omit this option, you will be prompted for the password.**

For example, this command activates 50 licenses with the activation code 1234-ABCD-EF12-5678. Since the `-p` option is not used, you will be prompted for the password:

```
pcoip-activate-online-license -a 1234-ABCD-EF12-5678 -c 50
```

Note: License count (-c) sets the total number of active licenses for each activation code

The license count (`-c`) sets the *total number of licenses* that will be active for a given activation code. It does not add `c` additional licenses.

For example, if you use `pcoip-activate-online-license -a 1234567890 -c 5` and then `pcoip-activate-online-license -a 1234567890 -c 10`, you will have 10 active licenses—not 15.

3. If you have licenses belonging to multiple activation codes, invoke `pcoip-activate-online-license` again for each license pool.

4. Verify your activated licenses:

```
pcoip-list-licenses
```

Returning Licenses

Licenses are registered to the license server where they are activated. In order to activate them on a different license server, they must first be *returned*, or released, back into the available license pool.

Note: Migrating Licenses

A license may only be used on one license server instance at a time. To migrate licenses, you must return them on the first HP Anyware License Server and then activate them on the second.

1. Use `pcoip-list-licenses` to view information about your current license usage.

```
pcoip-list-licenses
```

2. Use `pcoip-return-online-license` to return licenses for an activation code. This will return all the licenses belonging to the given activation code *on this license server*; if there are activated licenses belonging to the same code on a different license server, they must be returned on that server.

```
pcoip-return-online-license -a 1234-ABCD-EF12-3456
```

Returning a subset of licenses

`pcoip-return-online-license` returns all licenses associated with an activation code. If you want to return a portion of the licenses instead, you can use `pcoip-activate-online-license` with a reduced total license count (-c), which effectively returns the remainder.

Viewing License Information

Offline Environments Online Environments

To view the current status of your managed licenses, use `pcoip-list-licenses`. This command provides information about the PCoIP session licenses that have been activated on the HP Anyware License Server.

This command requires the HP Anyware License Server's administrative password. You can provide the password inline using `-p`. If you do not provide the password on the command line, you will be prompted for it.

```
pcoip-list-licenses
```

The information returned by `pcoip-list-licenses` includes:

- The number of licenses that have been activated
- The number of licenses that have been used
- The expiration dates of features or session licenses.

Reference

Locating License Server Files

Offline Environments Online Environments

License server files are in the following locations. Directories are denoted with a trailing '/'.

File or directory	Location
Log files	<code>/var/log/flexnetls-TERADICI/</code>
Server configuration file	<code>/opt/flexnetls/TERADICI/local-configuration.yaml</code>
Service configuration files	<code>/etc/systemd/system/flexnetls-TERADICI.service</code> <code>/etc/systemd/system/flexnetls-TERADICI.service.d/flexnetls.conf</code>
Executable files	<code>/opt/flexnetls/TERADICI/</code>
Trusted storage	<code>/var/opt/flexnetls/TERADICI</code>
Support bundle file	<code>/tmp/pcoip-license-server-support-bundle- <datetime>.tar.gz</code>
Temporary files	<code>/opt/flexnetls/TERADICI/</code>

Changing the temporary file location

If needed, you can change the temporary file location by editing `opt/flexnetls/TERADICI/local-configuration.yaml` and providing a new path in the `jni-helper-directory` property.

Command Reference

Offline Environments Online Environments

For detailed information about all of these commands, including options and special forms, view the embedded main page documentation on the license server machine:

```
man <command-name>
```

You may use `-p` or `-n` flags to provide password for scripting license server commands. We recommend omitting the `-p` and `-n` flags if possible, as they can cause the provided values to be logged into `/var/log/secure` and bash history. The HP Anyware License Server provides the following commands for configuring the license server and managing licenses in online and offline environments:

Common Commands

pcoip-set-password

Sets the HP Anyware License Server's administrative password. See [Setting the License Server's Administrator Password](#).

```
sudo pcoip-set-password
```

pcoip-get-license-server-id

Returns the unique ID of the HP Anyware License Server machine. This may be required in debugging or support situations.

```
pcoip-get-license-server-id
```

pcoip-list-licenses

Provides information about the PCoIP session licenses that have been activated on the HP Anyware License Server. See [Viewing License Information](#).

```
pcoip-list-licenses
```


This command was formerly `pcoip-view-license`. To ensure backward compatibility, both commands will work.

pcoip-support-bundler

Gathers information useful to Hp Anyware Support in troubleshooting and diagnosing problems. See [Creating Support Bundles](#).

```
sudo pcoip-support-bundler
```

Commands for Offline Deployments

pcoip-activate-offline-license

Activates licenses when the HP Anyware License Server is not connected to the internet. See [Activating Licenses in an Offline Environment](#).

Returning licenses in an offline environment

The `pcoip-activate-offline-license` command is also used to return licenses in an offline environment. For more information, see [Returning Licenses in Offline Environments](#).

Task	Command
Generate request file	<code>pcoip-activate-offline-license -g -a <activation code> -c <license count></code>
Process response file	<code>pcoip-activate-offline-license -r <path/to/response.bin></code>

Commands for Online Deployments

pcoip-activate-online-license

Activates licenses when the HP Anyware License Server is connected to the internet. See [Activating Licenses in an Online Environment](#).

```
pcoip-activate-online-license -a <activation-code> -c <license count>
```

pcoip-return-online-license

Returns all previously activated PCoIP session licenses associated with the specified activation code using an internet connection. See [Returning Licenses in Online Environments](#).

```
pcoip-return-online-license -a 1234-ABCD-EF12-5678
```

pcoip-configure-proxy

Views, sets, and clears proxy configuration for the HP Anyware License Server. See [Configuring Proxy Settings](#).

Task	Command
Set proxy configuration:	<code>sudo pcoip-configure-proxy -s proxy.domain.local:1234</code>
Clear proxy configuration:	<code>sudo pcoip-configure-proxy -c</code>
View proxy configuration:	<code>sudo pcoip-configure-proxy -v</code>

Keeping Passwords Secure

Offline Environments Online Environments

Some commands documented in this guide allow the use of the `-p` flag to provide password values inline, rather than stopping for a user input prompt. Although the HP Anyware License Server does not log or distribute passwords provided this way, it can be difficult to tell whether other system loggers (like `/var/log/secure` and bash history) are capturing them, leading to inadvertent disclosures. For this reason, **we strongly discourage** the use of the `-p` flag (or the related `-n` flag used by `pcoip-set-password`).

The HP Anyware license server supports the use of system environment variables to securely store and recall the license server password. To register the password as an environment variable, open a console window and run the following commands, substituting your password for `your_license_server_password`:

```
export HISTIGNORE="export*"
export TERADICI_LICENSE_SERVER_PASSWORD=<your_license_server_password>
```

If the HP Anyware License Server password is registered in this way, the HP Anyware License Server can use it automatically without needing the `-p` flag.

If you must use the `-p` flag

If you prefer to use these flags, or have no alternative, you should run `sudo -i` first. This changes to the Linux root user, and may avoid logging your password into `/var/log/secure`. You may also run `export HISTIGNORE="sudo pcoip-*"` to avoid logging password into bash history.

Whitelisting IP Addresses

Offline Environments Online Environments

If you are using Teradici Cloud Licensing, you will need to allowlist the following:

- `teradici.flexnetoperations.com`
- `teradici.compliance.flexnetoperations.com`

If you use an IP allowed list, we recommend sharing the following network blocks to allowlist with your IT team:

- **IPv4:** 185.146.155.0/24
- **IPv6:** 2620:122:f003::/48

If you previously used the allowlist, we recommend removing the old allowlist only after March 31, 2023:

- **Production:** 64.14.29.0/24
- **Disaster Recovery:** 64.27.162.0/24

Note: Allowlist Specific Configuration

You can skip this configuration steps if you are not configuring your firewall to allowlist specific network traffic.

Note: IP Block Change

Our third-party licensing vender has scheduled an IP block change in March 2023. Please ensure to update your network allowlist by the end of February 2023 to avoid any licensing service disruption.

Troubleshooting and Support

Support

Getting Support

Offline Environments **Online Environments**

If you encounter problems installing or using our technology, you can:

- Check for updated release notes, which may address the issue you are experiencing. Release notes are published on [Support](#).
- Browse the [Knowledge Base](#).
- [Submit a support ticket](#).

The Community Forum

The Community Forum allows users to have conversations with other IT professionals to learn how they resolved issues, find answers to common questions, have peer group discussions on various topics, and access the HP Anyware Support Service team. Our staff are actively involved in the forums.

To join the community, visit the [Community Forum](#).

Additional Tools

HP Anyware maintains a Github repository with open-source tools that augment usage of the HP Anyware License Server. The tools in this repo are provided as-is, with no expectation of support. Users are encouraged to submit bug reports in github, and are welcome to fork projects and submit pull requests.

The repo is available at <https://github.com/teradici/pcoip-license-server>.

Creating Support Bundles

Offline Environments Online Environments

Support bundles include relevant log files, current configuration, and license server and operating system information that are useful for HP Anyware Support in diagnosing problems and recommending actions. You may be asked by your HP Anyware Support representative for a support bundle while troubleshooting.

Support bundles are created using the `pcoip-support-bundler` command. You must have superuser (sudo) permissions to use this command.

This command requires the HP Anyware License Server's administrative password. You can provide the password inline using `-p`. If you do not provide the password on the command line, you will be prompted for it.

To generate a support bundle:

1. Invoke the `pcoip-support-bundler` command.

```
sudo pcoip-support-bundler
```

Running with an empty password

It is possible to run this command using a blank password (using `-p` with no argument). In this case, the bundler will exclude some information from the generated support bundle.

2. Find the generated `.tar.gz` output in the `/tmp` directory:

```
/tmp/pcoip-license-server-support-bundle-<date-time>.tar.gz
```

Understanding Support Bundler Data

Support bundles will collect the following files or command output:

- `/opt/flexnetls/TERADICI/*` (except `flexnetls.jar`)
- `/opt/flexnetls/TERADICI/admintools/*` (except `flexnetlsadmin.jar`)

- `/var/log/flexnetls-TERADICI/*`
- `var/log/audit/*`
- `/var/log/messages*`
- `/etc/init.d/flexnetls-TERADICI`
- `/etc/default/flexnetls-TERADICI`
- `/etc/*-release`
- `/etc/issue`
- `pcoip-configure-proxy.py -v`
- `pcoip-view-license.py -p`
- `flexnetlsadmin.sh -server -config`
- `flexnetlsadmin.sh -server -status`

The output of the following system commands is collected:

- `id license_server`
- `groups license_server`
- `yum list installed`
- `who`
- `dmesg`
- `ss -ax`
- `semodule -l`
- `sestatus`
- `ps wwauxfZ`
- `netstat -Wnap`
- `firewall-cmd --list-all`
- `iptables-save`
- `df -hk`
- `ip addr`

Troubleshooting

Performing Health Check Remotely

Offline Environments Online Environments

If you can access the license server from a remote location, run the following curl command:

```
curl https://<license-server-address>:7071/api/1.0/health
```

The response should look something like:

```
{
  "GLS" :
  {
    "version" : "2018.02",
    "buildDate" : "2018-02-27T17:03:40Z",
    "buildVersion" : "225119",
    "branch" : "mainline",
    "patch" : "0",
    "fneBuildVersion" : "220112",
    "database" :
    {
      "connectionCheck" : "success"
    }
  }
}
```

A `connectionCheck` value of `success` indicates that the License Server is running. Any other `connectionCheck` response means that the License Server is not running, or is not reachable.

Troubleshooting General Issues

Offline Environments **Online Environments**

My PCoIP session licenses have disappeared

Your licenses have most likely expired. Contact HP Anyware Sales to re-activate your licenses.

My installation is taking a long time to complete

Offline systems can expect installation times of up to 10 minutes. If you are experiencing delays longer than this, or if your installation is quitting with a timeout error, check the [system logs](#) for errors and contact HP Anyware Support.

My installation is taking a long time to complete

Installation should typically take 1-2 minutes. If you are experiencing delays longer than this, or if your installation is quitting with a timeout error, [check the system logs](#) for errors and contact [Support](#).

I forgot my HP Anyware License Server (offline) administrative password

If you forget the HP Anyware License Server administrative password, you will no longer be able to run most administrative commands. You will still be able to adjust proxy settings and change the listening port.

The HP Anyware License Server administrative password is not recoverable. To restore administrative access, you must:

1. Destroy the HP Anyware License Server's trusted storage folder (`/var/opt/flexnetLS/TERADICI`).
2. Reinstall the HP Anyware License Server.
3. Set a new HP Anyware License Server administrative password.
4. Reactivate any licenses that were previously activated on the HP Anyware License Server. The activation code (or keys) used must be identical to the original activations in order to preserve your licenses.

 Do not destroy the HP Anyware License Server machine

If you destroy the license server machine, the licenses will be lost.

I forgot my HP Anyware License Server (online) administrative password

The HP Anyware License Server administrative password is not recoverable; however, you can restore the default password if you destroy and rebuild the license server's trusted storage. If trusted storage contains any active licenses, FlexNet Operations will restore them once the trusted storage is rebuilt.

To rebuild the trusted storage database:

1. Stop the License Server service

```
sudo systemctl stop flexnetls-TERADICI
```

2. Verify that the process has stopped running. If it has not been stopped, kill it manually:

```
sudo pkill -u pcoip_license_server
```

3. Delete the contents of the trusted storage directory:

```
sudo rm -rf /var/opt/flexnetls/TERADICI/*
```

 Do not delete the TERADICI/ directory

If the `/var/opt/flexnetls/TERADICI/` directory is deleted, you must recreate it and assign the correct write permissions:

```
sudo mkdir -p /var/opt/flexnetls/TERADICI
sudo chown root.license_server /var/opt/flexnetls/TERADICI
sudo chmod 775 /var/opt/flexnetls/TERADICI
```

4. Start the license server service:

```
sudo systemctl start flexnetls-TERADICI
```

5. Reset the HP Anyware License Server administrative password:

```
sudo pcoip-set-password
```

I've changed some configuration settings but the changes have not been applied

Configuration changes require a restart of the HP Anyware License Server service to take effect. To restart the service, use this command:

```
sudo systemctl restart flexnetls-TERADICI
```

My password fails when using the `-p` option

If your password contains reserved Linux characters like the pipe (`|`), the shell may interpret them as operators instead of string characters and break the command. In order to prevent the shell from interpreting operators, enclose your password in single quotes.

When I activate additional licenses under an existing activation code, the number of activated licenses I get is wrong

When you supply an activation count (`-c`) to `pcoip-activate-* -license`, you are setting the *total* number of licenses that should be active under that code. If you have 10 licenses and want to activate 5 more, you should run the activation command with `-c 15` (not `-c 5`).

The HP Anyware agent reports that there are no available licenses

If the HP Anyware agent reports that that no licenses are available, consider the following possibilities:

- The HP Anyware License Server may be incorrectly configured and unable to communicate with your HP Anyware agents. The HP Anyware License Server should be available at `https://<license-server-address>:<port(default=7070)>/request`.
- HP Anyware agents must be configured to use the same port number as your HP Anyware License Server. By default, this is 7070. If you change the listening port on the HP Anyware License Server, you must also configure your HP Anyware agents to use the new value.

- The HP Anyware License Server may not have enough free licenses. Use `pcoip-list-licenses` to verify your available license count.

I've renewed my existing licenses but the expiration date has not been updated

It can take up to 24 hours for the license server to retrieve an update from FlexNet Operations. This delay should not impact your users, who will be covered by the 7-day grace period.

To force an immediate update, either restart the license server or re-activate an activation code.

MY Certificate failed to validate

If the certificate fails to validate, it is likely because the Common Name for the certificate is invalid -- either incorrect, or not issued by a trusted Certificate Authority. Follow the instructions provided here to install or import certificates.

- On HP Anyware Agent for Linux machines, follow the instructions [here](#) to install or import the certificate.
- On HP Anyware Agent for Windows machines, follow the instructions [here](#) to install or import the certificate.

I cannot transfer files to an internet-connected machine

If you are not able to transfer files from the HP Anyware License Server to an internet-connected machine, the HP Anyware Support team will facilitate license activation for you. [Create a ticket](#) for assistance.

When you create the ticket, select **Licensing** as the case reason and include the `VM_UUID` of the HP Anyware License Server in your description. Run the following command to get the `VM_UUID`:

```
pcoip-get-license-server-id
```

Troubleshooting Errors

Offline Environments **Online Environments**

Connection to server failed or refused

Check that the license server service is running:

```
sudo systemctl is-active flexnetls-TERADICI
```

If it is, ensure that the listening port is open (the default listening port is 7070). To quickly check that the correct listening port is open, use a browser to visit the following URL:

```
https://<license-serve-ip-address>:<port>/api/1.0/health
```

Job for flexnetls-TERADICI.service failed because the control process exited with error code

If you see this error message, the server needs to be killed and restarted. To kill and restart the system, use these commands:

```
sudo pkill -u pcoip_license_server  
sudo systemctl restart flexnetls-TERADICI
```

Too many failed logins

This error means that the provided password has been incorrect 3 consecutive times while attempting to access the HP Anyware License Server trusted storage. If the incorrect password has been provided 3 or more times consecutively, the license server will block access to administrative commands for 10 minutes, or until the license server is restarted.

FNE License Server has not been configured for HTTPS

This can happen when the `/opt/flexnetls/TERADICI/flexnet.certs` file is missing or invalid. Updating or re-installing the license server should fix the issue. See [Updating HP Anyware License Server in an Offline Environment](#) for detailed instructions.

Contact HP Anyware Support if the issue persists after reinstalling.

ACTIVATION_ID_COUNT_EXCEEDED

This error means you are attempting to activate more licenses than the activation code allows. Most likely, one or both of these conditions has been met:

- Some or all of the licenses for this activation code have already been activated on other HP Anyware License Server instances, and there are not enough still available to complete your request. To activate these licenses on the current HP Anyware License Server instance, you must first return them on the other instances.
- You have specified a larger license count than the given activation code manages.

ACTIVATION_ID_INVALID

This error means you have provided an invalid activation code. Make sure you have entered the activation code string correctly, including any symbols like dashes (-).

`response.bin` is rejected

The `response.bin` file generated by FlexNet Operations expires after 24 hours. Once expired, the file can no longer be used to validate licenses using `pcoip-activate-offline-license`. If this occurs, submit your `request.bin` to FlexNet Operations again and use the new `response.bin` file.

Troubleshooting Log Errors

Offline Environments **Online Environments**

The HP Anyware License Server logs are located in `/var/log/flexnetls-TERADICI/`.

Unable to connect to compliance.teradici.flexnetoperations.com

This error occurs because the License Server cannot reach Flexnet operations in offline environments. The License Server does not need to reach this service in an offline context, and the error can be safely ignored.

Connection to _____ has been refused

Ensure that your proxy is configured correctly. See [Configuring Proxy Settings](#).

Error message could not be retrieved

Ensure that your proxy is configured correctly. See [Configuring Proxy Settings](#).

Name or service unknown

The specified server address could not be resolved. Ensure that the server is a valid target and the DNS is properly configured.

Network is Unreachable

Check the firewall to make sure the license server has network access.

No logs are present, or the HP Anyware License Server doesn't start

If there are no license server logs available, or if the service won't start, you can view additional system logs by entering the following command:

```
journalctl -u flexnetls-TERADICI
```

Proxy authentication required

The proxy server requires authentication, but it was not provided in the proxy configuration. See [Configuring Proxy Settings](#).