# Pulse Connect Secure/ Pulse Policy Secure

License Management Guide

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Pulse Connect Secure / Pulse Policy Secure License Management Guide

The information in this document is current as of the date on the title page.

END USER LICENSE AGREEMENT

The Pulse Secure product that is the subject of this technical documentation consists of (or is intended for use with) Pulse Secure software. Use of such software is subject to the terms and conditions of the End User License Agreement ("EULA") posted at **https://www.pulsesecure.net/support/eula/**. By downloading, installing or using such software, you agree to the terms and conditions of that EULA.

# Revision History

| Version | Description |
|---------|-------------|
| 1.5.1 | Updated the License Server High Availability Cluster Functionality section. Updated LICENSE-MBR information in Appendix C. |
| 1.5 | Removed MAG appliances and licensing information from the document Updated the License Server High Availability Cluster Functionality section. |
| 1.4 | Revised document. |
| 1.3 | Updated the "License Server High Availability Cluster Functionality" section. |
| 1.2 | Added Backing Up and Restoring a License Server. Removed FAQ section. Added Note for VA-SPE references. |
| 1.1 | Updated Named User Licensing section. Updated Core License Distribution section. |

# Contents

# About This Guide

- Audience
- Document Conventions
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## Audience

This guide is designed for network administrators who are configuring and maintaining Pulse Connect Secure or Pulse Policy Secure gateways. To use this guide, you need a broad understanding of networking principles and network configuration. Any detailed discussion of these concepts is beyond the scope of this guide.

## Document Conventions

Table 1 defines notice icons used in this guide.

**Table 1: Notice Icons**

| Icon | Meaning | Description |
|------|---------|-------------|
|  | Informational note | Indicates important features or instructions. |
|  | Caution | Indicates a situation that might result in loss of data or hardware damage. |
|  | Warning | Alerts you to the risk of personal injury or death. |
|  | Laser warning | Alerts you to the risk of personal injury from a laser. |
|  | Tip | Indicates helpful information. |
|  | Best practice | Alerts you to a recommended use or implementation. |

## Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation at https://www.pulsesecure.net/techpubs/.  You can provide feedback by using one of the following methods:

- Document name
- Page number
- Software release version

## Requesting Technical Support

Technical product support is available through the Pulse Secure Global Support Center (PSGSC). If you have a support contract, then file a ticket with PSGSC.

- Product warranties—For product warranty information, visit https://www.pulsesecure.net/support.

### Self-Help Online Tools and Resources

For quick and easy problem resolution, Pulse Secure, LLC has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: https://www.pulsesecure.net/services/overview/
- Search for known bugs: https://www.pulsesecure.net/support
- Find product documentation: https://www.pulsesecure.net/techpubs
- Download the latest versions of software and review release notes: https://www.pulsesecure.net/support
- Open a case online in the CSC Case Management tool: https://www.pulsesecure.net/support
- To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: https://www.pulsesecure.net/support
- Search Pulse Secure Knowledge Center for technical bulletins and security advisories: https://www.pulsesecure.net/support
- Ask question and find solutions at the Pulse Secure community online forum: https://www.pulsesecure.net/support

### Opening a Case with PSGSC

You can open a case with PSGSC on the Web or by telephone.

- Use the Case Management tool in the PSGSC at https://www.pulsesecure.net/support.
- Call 1-844 751 7629 (Toll Free, US).

For international or direct-dial options in countries without toll-free numbers, see https://www.pulsesecure.net/support.

# PART 1

# Overview

- License Management Overview
- License Overview

# CHAPTER 1

# License Management Overview

- License Management
- License Servers
- License Server High Availability Cluster Functionality
- License Clients
- Auto-Leasing
- Updating Client Configuration
- Importing and Exporting Configuration Files
- Licensing Virtual Appliances

## License Management

Pulse Connect Secure software and Pulse Policy Secure software include a Pulse Secure Licensing and Software Download Center @ https://my.pulsesecure.net, that lets you configure the Connect Secure device as a license server to allow administrators to view all configured systems and move those licenses as needed. Other devices on the network lease licenses from the central license server.

Alternatively, you can install and manage licenses directly on each device and eliminate the license server entirely. Your company's needs and requirements dictate which configuration is best for you.

The following are the various types of licenses:

- CONSEC Subscription license
- POLSEC Subscription license
- CONSEC Named Subscription license
- POLSEC Named Subscription license
- ACCESS Subscription license
- Feature licenses

- CONSEC Perpetual license
- POLSEC Perpetual license
- CONSEC Named Perpetual license
- POLSEC Named Perpetual license

End User License Agreement (EULA) acceptance is mandatory and you are entitled to use the features of the software that you have licensed within the limits of your Proof of Entitlement. Contact your sales representative for more information.

**NOTE:** From 9.1Rx release, Pulse MAG Series Appliances that support Pulse Connect Secure and Pulse Policy Secure have all been announced as End of Life (EOL). Existing users can refer to the 8.3Rx 8.3R3 PCS and 5.4R3 PPS License Management Guide for MAG appliances and licensing related information.

**Related Documentation**

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## License Servers

If you choose to use license servers, the license server software can be run on the PSA Hardware Platforms and all PSA-V Platforms models running the Pulse Connect Secure personality. Once you configure a device to be a license server, that appliance ceases to be anything except a license server; it will no longer accept end-user client connections. You can configure more than one license server, but each client can be associated with only one license server. A device cannot be both a license server and a license client at the same time.

Note the following about license servers:

- Only administrators can log in to a license server.
- PCS 8.3R1 has added VMWare-based Virtual License Server (VLS) capability. Pulse Secure extended the support for other Virtual Platforms from 9.0R1 onwards.
- A license server cannot lease licenses from another license server.
- The license server manages, and leases licenses associated with a user count, such as basic concurrent user licenses, RDP (remote desktop) licenses, Cloud Secure license from 9.0R2 release and Core licenses from 9.0R3 release. It also leases concurrent meeting user licenses and Advanced Mobile Licenses – Onboarding.

**Figure 1: List of Configured Clients and Licenses Leased by Them**



- Hardware license servers must have either an ACCESS-LICENSE-SVR or an ACCESS-SUB-SVR-ZYR license (for example, ACCESS-SUB-SVR-1YR) in order to be recognized as a license server.

## Disabled Features

Only administrators can log in to the device configured as a license server. An error message is displayed to non-administrator users attempting to log in to the license server. All existing end-user sessions are terminated when a device is configured as a license server.

Some Pulse Connect Secure features and windows are disabled on the license server's administration console.

# License Server High Availability Cluster Functionality

A high availability (HA) deployment of two PSA appliances can provide uninterrupted operation in any transaction.

A license can be installed on a standalone PCS appliance and a node that is part of an active/passive cluster or an active/active cluster. Installing a license will fail if any node in the cluster has an MBR license, or if any node in the cluster is registered with a server.

The cluster can switch from active/passive to active/active and vice versa.

**NOTE:** Unlike other licenses which need to be installed on both the nodes, this license is required only on one node in the cluster.

# License Server High Availability in Active/Passive Cluster

With one appliance configured as the active node and the other as the passive node, the active node accepts connections and manages servers while the passive node monitors the primary. If, for any reason, the active node is unable to accept connections, the passive node takes over.

The passive node monitors the primary by sending periodic messages (often called heartbeat messages or health checks) to determine whether the active node is accepting connections. If a health check fails, the passive node retries the connection for a specified period, after which it determines that the active node is not functioning normally. The passive node then takes over for the active (a process called failover).

After a failover, the virtual IP is transferred to the passive node and all clients begin to re-establish their connections to the managed servers, but the session persistence rules are maintained as they were before the failover. When the passive node becomes active, it will be able to use all of the licenses for a 20-day grace period until the failed node rejoins the cluster.

## Configuring a High Availability Cluster

After you download or receive your license keys by using email:

1. In the admin console of the license server, choose **System > Configuration > Licensing > Licensing Summary**.
2. Click on the license agreement link. Read the license agreement and, if you agree to the terms, continue to the next step.
3. Enter your license key(s) and click **Add**.
4. Click the **Configure Clients** tab.
5. Select the **Enable Licensing server** check box.

6. Click **Save Changes**.

7. Under **System > Clustering**, create cluster. For details, refer to the Clustering section in PCS Administration Guide.

8. Under the **System > Clustering > Cluster Properties** page, select **Active/Passive configuration**.



9. Configure another appliance into the cluster.

ℹ **NOTE:** While configuring the license client, the server's virtual IP is used as the license server IP/Host name.

## License Server High Availability in Active/Active Cluster and Over WAN

License Server works in active/active mode where every node will serve the clients individually and at the same time. The active/active cluster across the WAN mitigates disaster and provides high availability of Licensing server to its clients.

The active/active cluster is connected through internal port. If the cluster is deployed across the sites, the internal ports must be reachable for the active/active cluster to work. If the nodes are not reachable, the cluster split occurs. In case of any cluster split, until the failed node rejoins the cluster, the cluster license is available on both the nodes for 20 days. After the 20-day grace period, cluster license will fall back to the individual node's license capacity.

**NOTE:**

- Active/Active cluster does not support named users remote repo mode.
- Latency between the two nodes should be less than 100 milliseconds.
- In active/active mode, you have the option of using an external load balancer with a cluster. If you do use a load balancer, all the nodes actively handle user requests sent by the load balancer or round-robin DNS.
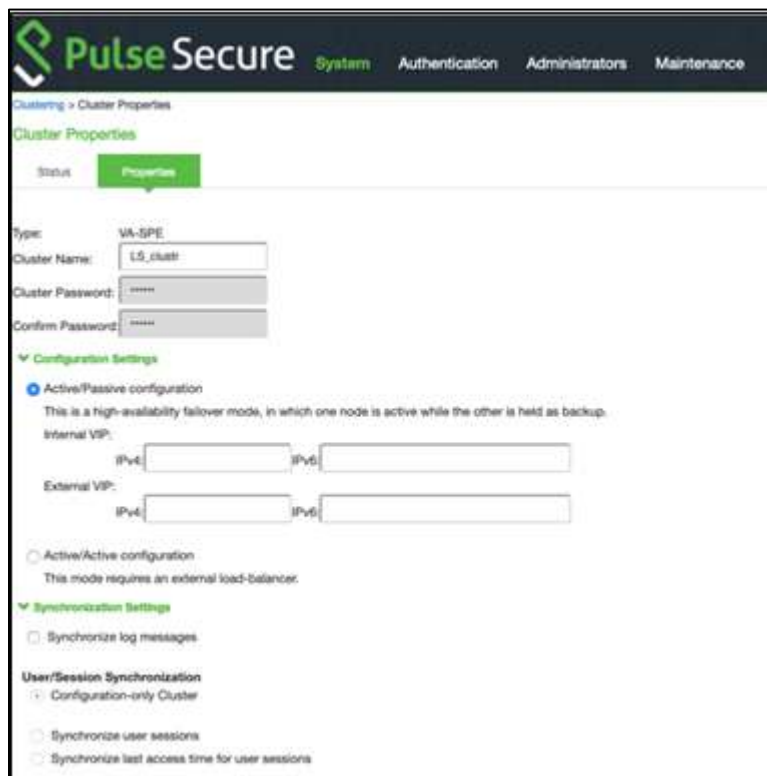
### Configuring a High Availability Cluster

After you download or receive your license keys by using email:

1. In the admin console of the license server, choose **System > Configuration > Licensing > Licensing Summary**.
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3. Enter your license key(s) and click **Add**.
4. Click the **Configure Clients** tab.
5. Select the **Enable Licensing server** check box.



6. Click **Save Changes**.
7. Under **System > Clustering**, create cluster. For details, refer to the Clustering section in [PCS]

Administration Guide.

8.  Under the **System > Clustering > Cluster Properties** page, select **Active/Active configuration**.



9.  Configure another appliance into the cluster.

**NOTE:** Active/Active cluster supports only two-node cluster.

## Supported Platforms

The following platforms support the license server high availability cluster functionality:

**Virtual Platforms:** Active/passive clustering of license servers are supported on all virtual platforms that support VLS and are supported for the 9.0 release onwards:

*   ESXi
*   Hyper-V
*   KVM
*   Cloud Platforms (MS Azure, AWS, OpenStack, AliCloud) – only for Active/Active Cluster.

**Physical Platforms**: Active/passive clustering of license servers are supported on the following physical platforms that are supported for the 9.0 release onwards:

*   PSA3000, PSA5000 and PSA 7000 for HLS

## Related Documentation

*   License Management

- [Disabled Features on a License Server](#)

# License Clients

License clients (PCS or PPS) are configured to communicate with a particular license server. The client then requests the licenses (over HTTPS) that are allocated to it.

A License Member license (for example, PSA-LICENSE-MBR) must be installed when an administrator wants to surrender a client's perpetual licenses to the license server.

## Leasing Licenses from a License Server

If the concurrent user count is greater than its leased license limit, a license client requests the license server to increase its capacity, in quanta of incremental count, until the maximum user count (MUC) is met.

When the license server receives license lease requests, it first verifies that the client has been allocated the licenses it is requesting. The license server then checks that it has sufficient licenses before granting the request.

Reserved licenses are leased for 10 days at a time. Clients will renew their licenses based on lease renewal interval as configured in the license server. The reply sent by the license server includes a new lease expiration date, which is the minimum of the current time plus the incremental lease time and the license allocation expiration date. If a client does not renew a license before the lease expires, the license server reclaims the license. The renewal interval can be one hour to a maximum of IncrementalLeaseDuration/2.

A minimum lease interval of 24 hours is built-in. Once a client acquires an incremental license lease, it is kept for at least 24 hours even if the load diminishes on the client.

Figure 2: Flow Diagram for Leasing Licenses from a License Server

| License Server | | Leasable to | |
|---|---|---|---|
| CONSEC Subscription License<br>Example: CONSEC-5000U-1YR | | Leasable to | PSA (PCS),<br>PSA-V (PCS)<br>*VA-SPE (PCS) |
| POLSEC Subscription License<br>Example: POLSEC-500U-1YR | | Leasable to | PSA (PPS),<br>PSA-V (PPS)<br>*VA-SPE (PPS) |
| CONSEC Named Subscription License<br>Example: CONSEC-5000NU-1YR | | Leasable to | PSA (PCS),<br>PSA-V (PCS) |
| POLSEC Named Subscription License<br>Example: POLSEC-500NU-1YR | | Leasable to | PSA (PPS),<br>PSA-V (PPS) |
| CONSEC Perpetual License<br>Example: CONSEC-ADD-2000U | | Leasable to | PSA (PCS),<br>PSA-V (PCS)<br>*VA-SPE (PCS) |
| POLSEC Perpetual License<br>Example: POLSEC-ADD-100U | | Leasable to | PSA (PPS),<br>PSA-V (PPS)<br>*VA-SPE (PPS) |
| CONSEC Named Perpetual License<br>Example: CONSEC-ADD-2000NU | | Leasable to | PSA (PCS),<br>PSA-V (PCS) |
| POLSEC Named Perpetual License<br>Example: POLSEC-ADD-100NU | | Leasable to | PSA (PPS),<br>PSA-V (PPS) |
| ACCESS Subscription License<br>Example: ACCESS-1000U-IYR | | Leasable to | PSA (PCS/PPS),<br>PSA-V (PCS/PPS)<br>*VA-SPE (PCS/PPS) |

**\*NOTE:** Pulse Secure still supports leasing of licenses from 9.0Rx license servers to pre-9.0Rx license clients (VA-SPE).

Related Documentation

- [License Management](#)

## Auto-Leasing

If a license client is unable to contact the license server because of network interruptions or license server maintenance, the license client can still increase its user count lease with the auto-leasing feature.

Auto-leasing feature is automatically enabled on a license server based on the number of extra licenses available and the current allocation of those licenses amongst the license server's clients.

Auto-leasing applies only to subscription or user capacity licenses, and not to licenses tied to a specific platform or platform family. For example, auto-leasing can be enabled for the CONSEC-1000U-1YR license because the CONSEC-1000U-1YR license is not platform or platform family specific.

ℹ️ **NOTE:** Even though the ACCESS-RDP licenses are applicable only to the Connect Secure, auto-leasing is enabled for RDP users because this license is applicable to all platforms within the Connect Secure system.

Auto-leasing is automatically enabled for a user capacity feature when the average available count over 24 hours for that feature is greater than 30% of the unallocated maximum capacity.

For example, assume the following scenario:

- A license server has a CONSEC-1000U-1YR concurrent user license installed.
- The server has 10 clients each configured with a reserved count of 50, an incremental count of 10 and a maximum count of 100.
- Each client has currently leased 60 user counts.
- The average available count over the past 24 hours is 400.

The unallocated maximum capacity is 10 clients * (100 maximum count - 60 leased) or 400. 30% of 400 is 120. Since the average available count over the past 24 hours is 400 and is greater than 30% of the unallocated maximum capacity (120), auto-leasing is enabled.

If, however, the maximum count on each client is 200, then the unallocated maximum capacity changes to 10 clients * (200 maximum count - 60 leased) or 1400. 30% of 1400 is 420. Since the average available count over the past 24 hours is 400 and is now less than 30% of the unallocated maximum count (420), auto-leasing is now disabled.

For clusters, the cluster lease leader performs the auto-increments for all connected cluster nodes.

During any one continuous disconnected state, auto-leasing can be used till the reserved leases expire or for 10 days.

The auto leasing feature automatically disables if the client is unable to communicate with the license server for more than 10 days.

When a disconnected client re-establishes connection to the license server, information is passed to the license server to reconcile capacity allocations for the duration of the automated lease increments and "normal" leasing rules are in effect. If the license server is unable to reconcile the client's auto-lease usage, the license server turns off auto-leasing for all features for the next 5 days. All clients that connect to that license server during these 5 days cannot auto-lease until the 5-day penalty period expires. If new user count subscription license (such as RDP or concurrent users) are added to the license server, the penalty period expires immediately.

**Related Documentation**

- [License Management](#)

## Updating Client Configuration

Administrators can change a client configuration (at the license server) at any time. This change is communicated to the client the next time it contacts the license server for the next renewal. You can also click the **Pull State from Server** button in the client's admin console to register any changes immediately.

If you reduce the maximum user count (MUC) value for a feature at a client, the current leased count is reduced immediately without waiting for the client to contact the server. An increase to the reserved user count (RUC) or MUC value does not impact the current leased count until after the client contacts

the license server. Once the client connects to the license server, licenses are relinquished. Optionally, you can delete the client configuration from the license server for the license capacity to become available.

## Surrendering Licenses

An administrator can surrender perpetual user count licenses installed on a client to a license server so that they can be shared by other appliances of the same family. When surrendering licenses, the entire license is removed; you cannot surrender portions of a license. You surrender a license only to the license server to which the client is registered. Once a license is surrendered, the license server will treat the licenses as if they were installed directly on the server.

Figure 3: Flow Diagram for Surrendering Licenses to a License Server
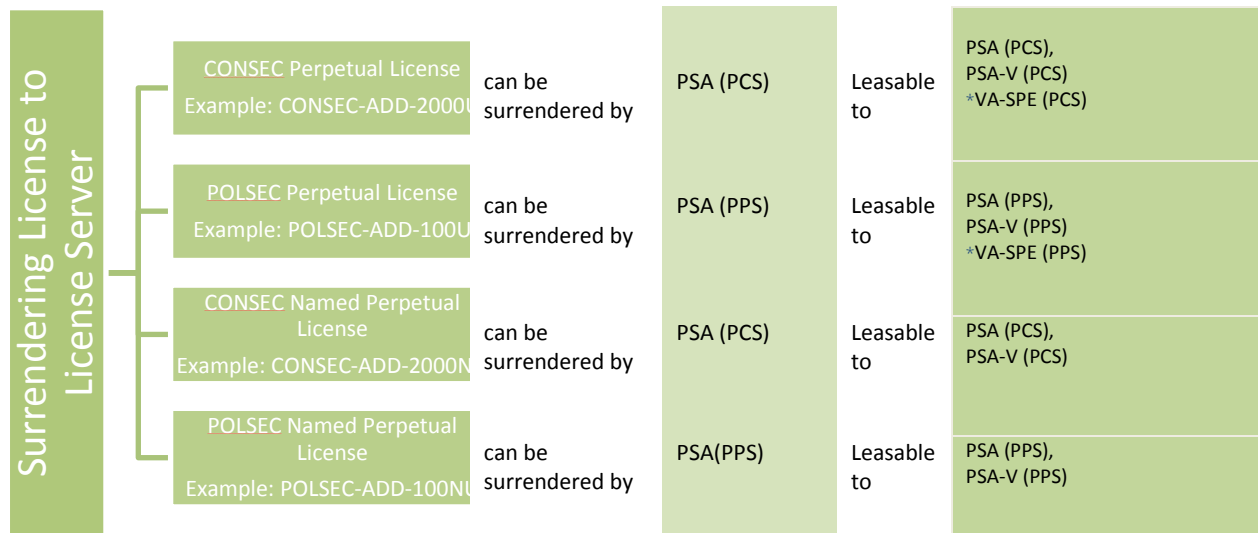


👤 *NOTE: Pulse Secure still supports leasing of licenses from 9.0Rx license servers to pre-9.0Rx license clients (VA-SPE).

👤 NOTE: You can surrender only perpetual concurrent user licenses (for example, CONSEC-ADD-xU) and perpetual meeting user licenses (for example, PSA-MTG-xU). You cannot surrender feature licenses (for example, PPS-RADIUS-SERVER) and duration-based licenses (for example, CONSEC-1000U-1YR) licenses.

When licenses are surrendered to the license server, it will have an expiration date set to 10 days. The client automatically contacts the license server every 4 hours to extend the transfer by resetting the expiration date. If the client loses communication with the server for more than 10 days, the server can no longer lease these licenses. However, these licenses are not automatically returned to the client; they are returned only with the recall function.

In a cluster, each node surrenders and recalls its licenses independently of the other nodes. There is no concept of a surrender leader. However, an administrator can log in to a cluster node and surrender or recall licenses for that node or any node within that cluster.

For the license surrendering procedure, see "Surrendering and Recalling Licenses".

## Recalling Licenses

An administrator can recall licenses surrendered to a license server at any time. The recall operation can be done only at the client where the licenses were surrendered. Recalled licenses are available immediately at the client regardless of whether the client can communicate with the license server.

If the license server/client communication is down at the time of the recall, the client continues to contact the license server. When communication is again established, the server stops leasing those licenses.

If the license server had already leased those licenses at the time of the recall operation, those leased licenses are valid until the client renews its leases. If licenses are unavailable, the client is not assigned any capacity. The license server does not recall the licenses it already granted.

For the license recalling procedure, see "Surrendering and Recalling Licenses".

## Downloading License Keys Automatically

Administrators are given the option to automatically download license keys from the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net. This feature is applicable for all license keys (subscription-based, capacity-based, and so forth.) Communication is done via https.

The automated download process uses the following schedule for contacting the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net.

- Once every 3 months if there are no expiring licenses.
- Once a month if a license is expiring within the next 3 months
- Once a week if a license is expiring within the next 2 weeks
- Once a day if a license grace period is expiring within the next week

For the automatic downloading procedure, see "Configuring the Automated Downloading of License Keys".

**Related Documentation**

- License Management
- Surrendering and Recalling Licenses
- Configuring the Automated Downloading of License Keys

## Licensing Virtual Appliances

PCS 8.3R1 has added VMWare-based Virtual License Server (VLS) capability. Pulse Secure extended the support for other Virtual Platforms from 9.0R1 onwards.

**Related Documentation**

- License Management

## Named User Licenses

While a concurrent user license allows group of people to share a license, a named user license is individualized. Named user licensing (NUL) provides an option to administrator to license PCS and PPS individually using named users. Also, administrators have an option to lease named users license across PCS and PPS from license server that would be centrally accounted in a licensing server rather than on individuals point products or clusters.

The named users feature will enable in the following ways:

**Installation of a Named User License freezes all other licenses:** When a new named users license is installed on an appliance, any other licenses are "frozen" – they cease to have effect until the named user license is removed. Any concurrent user licenses from perpetual and subscription, CONSEC, and POLSEC are frozen when named user licenses are enforced. All concurrent user licenses will be marked inactive and be shown as such (greyed out) in the UI. After installing named user license, the system shows max concurrent users as platform limit.

**Named User Licenses work for unique user identities:** When a user logs in, the login code will use the login name to identify if the user has licensing permissions to log in. If a unique user identity cannot be established (example: device certs), then a single user license will be consumed.

**Consumed on a first-come-first-serve basis:** A standalone or cluster wide queue of unique users will be maintained.

**Maximum 5 sessions per user identity:** With named user licenses, the products will allow a max of 5 sessions for any single user identity, per user. When the same user logs in to two different realms simultaneously, then the named user consumes only one license.

**Appliances continue to have a max number of sessions:** Appliances continue to have a max number of sessions they can support. A warning will be thrown when the appliance is close to thresholds for sessions and for Named users. Warnings in the user access logs will indicate the maximum concurrent user limit is near or has been reached. The named user limit has a 10% overage.

CONSEC and POLSEC named user licenses can be installed on the license server. Administrator can install named user licenses on each of their appliances and point them to a license server. Administrator can also install named user licenses on license server and lease them to any of the following deployments:

- Hardware PCS on-premise – standalone or cluster
- Virtual PCS on-premise – standalone or cluster
- Hardware PPS on-premise – standalone or cluster
- Virtual PPS on-premise – standalone or cluster
- Cloud PCS and PPS deployments with a route to an on-premise license server

The PSA license server/VLS can act as central coordinator and aggregator for all named user related operations. For detailed steps to enable named user Remote Repository mode on license server, see Enabling Remote Repository Mode for Central Management of Named Users.

## Enabling Remote Repository Mode for Central Management of Named Users

To configure named user settings, do the following on the license server:

1. Select **System > Configuration > Licensing > Configure Clients**.
2. In the Named User settings, select the **Enable Named User Remote Repository Mode for PCS** or

**Enable Named User Remote Repository Mode for PPS** check boxes. This will allow the PCS or PPS client to operate in named user remote repository mode.

Figure 4: Named User Remote Repository Mode



3. Click **Save Changes**.

To view number of registered users and total number of licenses:
1. Select **System > Status > Named Users PCS**.

Figure 5: Number of Registered Users and Licenses

2. Administrator can delete a named user entry from this table. This operation will be permitted only from the license server.

   Information about the deleted user will be propagated to the license clients through a periodic poll, initiated by the client.
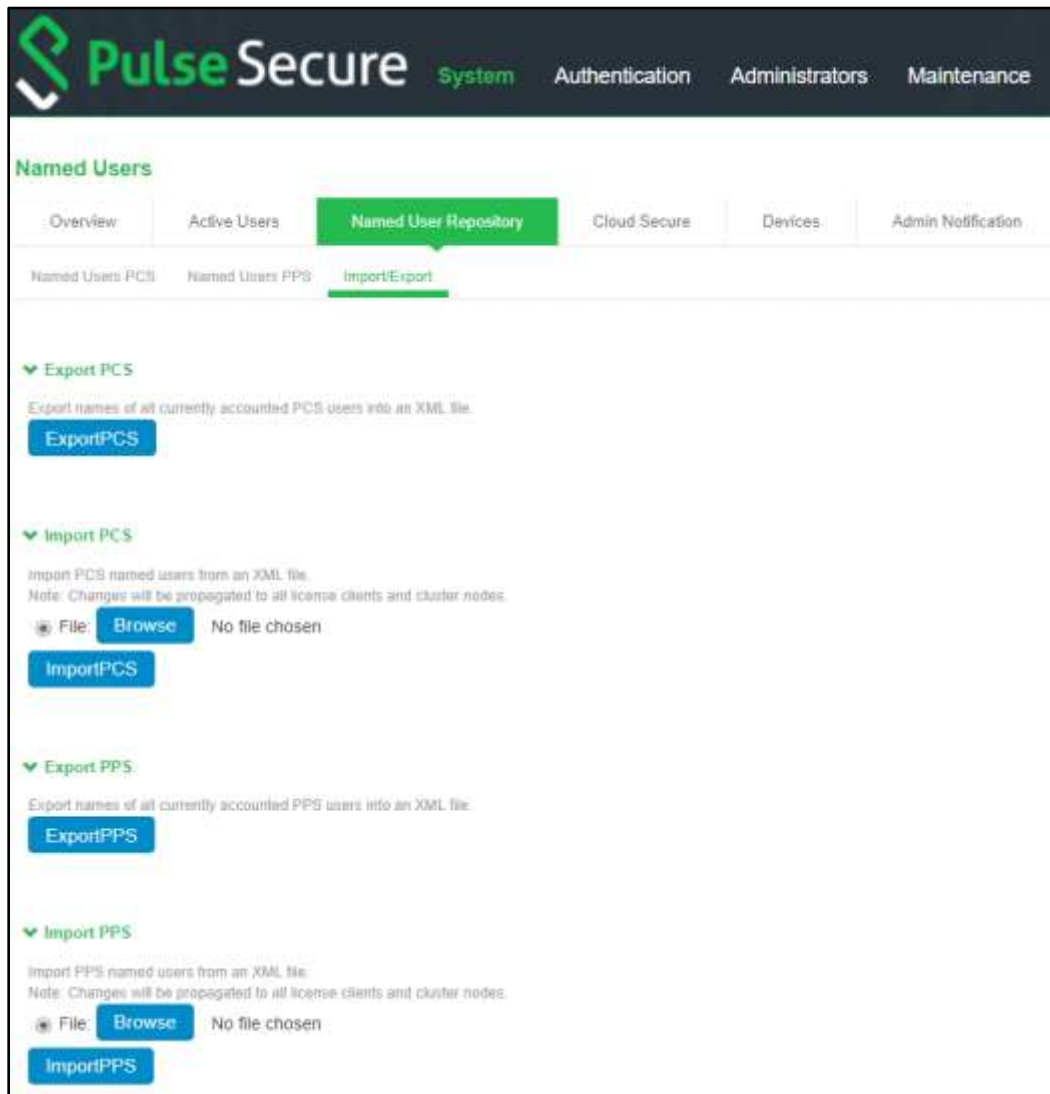
 NOTE:

- When an end-user logs in from license client, which is configured to lease named user licenses from license server cluster in named user Remote Repository mode, all the fields in named user database on license server are populated on active node only. Only User field is synced to passive node of license server cluster. In case active node goes down and VIP fails over, all fields in the named user records are not retained except the user field.

- When unique end-user logs in for first time from license client which is configured to lease from license server in Remote Repository mode, only User field gets populated in named user database on license client. All other fields start populating from subsequent logins.

## Importing/Exporting Named User from/to an XML File

To import/export named users from/to an XML file from a license server:

1. Select **System > Status > Named User Repository > Import/Export**. The active license server node will be the only node that allows import/export.

Figure 6: Import/Export Named Users



When the administrator is in the named user remote repository mode:

- Administrator can delete named users from the license server only.
- Administrator can import named users into the license server using XML.

ℹ **NOTE:** In case of a license server cluster, the above two operations are allowed from the Active node only.

- Deletion of named users are not allowed from the client deployments.

ℹ **NOTE:**

- XML Import of named users should not be done from a client deployment when operating in named user remote repository mode.
- XML Import of named users overwrites the existing named users.

# CHAPTER 2

# License Overview

- Subscription Licenses
- Capacity-Derived Licenses and Client Platform Compatibility
- Cluster Licenses

## Subscription Licenses

Subscription licenses and renewal licenses (identified by a -R appended to the license name) have a start and end date embedded within them. Customers initially purchase a subscription license that is valid until a specified date. When the license expiration date nears, customers can renew their licenses.

When the license is installed, the start and end date are interpreted relative to the local time and time zone on the machine. The start date begins at 12:00 am and the end date ends at midnight of the end date (12:00 am of the following day). If the start date is in the future, the subscription or renewal license is not activated till the start date. A renewal license is automatically activated only if there is a corresponding expired subscription license.

A subscription license can only be renewed by a corresponding renewal license and a renewal can be activated only by the expiration of a corresponding subscription or renewal license.

The following subscription licenses are available (X and Z will be replaced by the appropriate number of user and/or year count):

- CONSEC-XU-ZYR—Concurrent user count subscription
- POLSEC-XU-ZYR—Concurrent user count subscription


**Related Documentation**
- Configuring License Options

## Capacity-Derived Licenses and Client Platform Compatibility

Capacity derived licenses can be leased only to the same platform family.

Non-platform or non-family-specific licenses can be leased to any platform. For example, capacity derived from an ACCESS-1000U-1YR license can be leased to any PCS or PPS gateway.

**Related Documentation**
- License Management

## Cluster Licenses

The license server can lease licenses to both standalone clients and clustered clients. Note the following for leasing licenses to clustered clients:

- Only one cluster member, identified by the Connect Secure or Policy Secure software, makes lease requests on behalf of all cluster members. This member can query, renew, and increment licenses for other cluster members when the members are connected to the cluster.

- In order to lease from platform or platform-family specific perpetual licenses or to surrender installed licenses,, each cluster member must have the LICENSE-MBR license installed. Otherwise, the LICENSE-MBR license is not required.

When setting up the cluster license information, it is not necessary to enter the cluster configuration at the license server. This information is retrieved dynamically as each client reports its own cluster affiliation to the server and is displayed in the license server admin console.

The initial communication between the clusters to the license server retrieves the reserved counts for all cluster members registered with the license server. Incremental requests are the sum of all members in the cluster that are not at their maximum configured capacity.

For example, suppose a cluster has two nodes configured as follows:

- node 1: reserved=50, maximum=100, incremental=10

- node 2: reserved=50, maximum=100, incremental=10

The initial query retrieves 50+50=100 licenses. Each incremental lease request increments the current lease by 10+10=20 licenses up to a maximum of 100+100=200 licenses.

**Related Documentation**

- [License Management](License Management)

# PART 2

# License Keys

- Obtaining Your License Keys

# CHAPTER 3

# Obtaining Your License Keys

- Obtaining, Entering, and Upgrading Your License Keys
- Configuring License Options
- Activating and Deactivating Emergency Mode

## Obtaining, Entering, and Upgrading Your License Keys

To take full advantage of your device, you must access the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net, provide your licensing hardware ID and authorization code(s) to obtain your license keys, and sign in to the admin console to enter the license keys you receive from Pulse Secure.

A licensing hardware ID is a unique 16-character code Pulse Secure uses to identify your particular device when generating license keys. You can find the system's licensing hardware ID above the menu options in the serial console and at the bottom of the admin console.

An authorization code is a pass key required to generate and activate license keys you or your company have purchased for your device. You receive your authorization code(s) after you purchase your device and associated product and feature licenses. Figure 7 shows the license key generation and activation flow.

Figure 7: License Key Generation and Activation
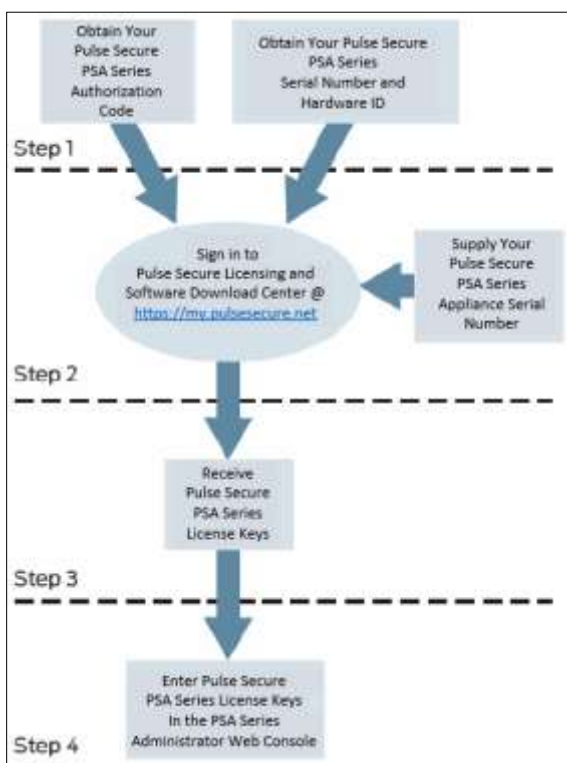
The package you download from the Pulse Secure Licensing and Software Download Center or the e-mail message you receive from Pulse Secure might contain different types of licenses:

- **User license keys**—Enables you to host as many users as are specified in the license key code. User license keys are additive, meaning that you can expand the number of users that can access a device by simply acquiring an additional user license key and adding it to your configuration. For example, if you initially purchase a 100-user license and then purchase another 100-user license in the future, your device can accommodate up to 200 users.
- **Access feature license keys**— Allows you to enable system access methods. These keys are available for a variety of access methods including onboarding and cloud secure licenses.
- **In Case of Emergency (ICE) license keys**—Allows you to activate the emergency mode and provides licenses for additional users on a device and Pulse Secure devices for up to eight weeks. The ICE license does not include optional features.
- **Evaluation license keys**—Allows you to enable and roll out the latest functionality for a limited time before deciding whether or not to purchase license keys and enable the new functionality on a permanent basis. Evaluation license keys are valid for eight weeks also. For example: "POLSEC-EVAL-8W".

You can use the **System > Configuration > Licensing** tab to enter the license keys for your site, to view their expiration dates, and to delete them (if needed).

Ensure that you read the license agreement, which is accessible from the Licensing tab, before submitting your license key. The license agreement available from the Licensing tab is the same text displayed in the serial console during the initial setup.

**Related Documentation**

- [Configuring License Options](#)
- [Activating and Deactivating Emergency Mode](#)

## Configuring License Options

Use the Pulse Secure Licensing and Software Download Center to create and enter new license keys or to transfer license keys to replace a device. Detailed instructions are located on the Pulse Secure Licensing and Software Download Center located at [https://my.pulsesecure.net](https://my.pulsesecure.net).

**Related Documentation**

- [Obtaining, Entering and Upgrading Your License Keys](#)
- [Activating and Deactivating Emergency Mode](#)

## Activating and Deactivating Emergency Mode

The emergency mode feature allows you to temporarily enable a system for a large number of users.

In emergency mode, you must first install an In Case of Emergency (ICE) license using the standard system license installation procedure. Then, when the emergency occurs, you can easily activate emergency mode through the system's web console. When your emergency has passed, you should then deactivate the emergency mode.

**NOTE:** The ICE license is permanent until you activate emergency mode. Activating emergency mode switches the ICE license to a temporary license and only enables you to operate in emergency mode for

8 weeks. Once the ICE license expires, all features disappear, and your users can no longer access the device using the emergency mode.

To activate or deactivate emergency mode:

1. In the Web console, select **System > Configuration > Licensing**.

2. Find the In Case of Emergency License entry in the license list. Sample ICE license names include:

   - PSA-ICE
   - ACCESS-ICE-25PC

3. Click the **Enable** link on the right side of the license column to activate emergency mode or click **Disable** to deactivate it.

When you enable and disable emergency mode, the system decrements the corresponding license in 5 minutes intervals.

**Related Documentation**

- [Obtaining, Entering and Upgrading Your License Keys](#)
- [Configuring License Options](#)

PART 3

# Using Licenses without a License Server

- Configuring a Standalone License Device

# Configuring a Standalone License Device

- Configuring a License Client Without a License Server

## Configuring a License Client without a License Server

If you do not use a license server, then you install the appropriate licenses on each device. Without a license server, you manage each device's entitlements individually.

The steps in this topic assume that you have already performed the license key generation and activation steps.

After you download or receive your license keys by using email:

1. In the admin console, choose **System > Configuration > Licensing > Licensing Summary**.
2. Under Summary, view a summary
3. Click on the license agreement link. Under Installed License Details, read the license agreement and, if you agree to the terms, continue to the next step.
4. Enter your license key(s) and click **Add**.
5. Click **Save Changes**.

An example of the client's License Summary tab is shown in Figure 8.

**Figure 8: Client Window After Installing Member License**



**Related Documentation**

- <u>Licensing Changes with This Release</u>

## PART 4

# Using Licenses with a License Server

- Configuring the License Server
- Configuring the License Client
- Automatic Downloading, Surrendering and Recalling Licenses

# CHAPTER 5

# Configuring the License Server

When using a license server in your environment, you must configure a device as the server and then configure the handshake between each client and that server. This section describes the procedures for setting up a license server.

- License Allocations
- Configuring a Device as a License Server
- Backing Up and Restoring License Server

## License Allocations

Before a device can lease licenses from the license server, you must first allocate licenses to that particular device. License allocation information consists of the following:

- **License client ID**—You must assign a unique ID to each license client to identify that client. The client identifies itself with the license server using the client ID.

- **User count license properties**—

  - **Reserved user count (RUC)**—The number of user count licenses reserved for this client. A license leased to this client cannot be less than the RUC number.

  - **Maximum user count (MUC)**—The maximum number of user count licenses this client is allowed to request. This number must be greater than or equal to the RUC. Requests for licenses greater than the RUC are granted only if the license server has additional licenses available at the time of the request.

  - **Incremental lease quantum (ILQ)**—Clients can request an increase or decrease to its user count lease only in multiples of this number. The ILQ must be at least 25 unless the difference between the MUC and the RUC is less than 25. The ILQ must also be at least 10% of the difference between the MUC and the RUC. This restriction eases excessive protocol traffic.

- **Expiration date**—The date when the client configuration expires. When the client configuration expires, the server no longer accepts lease requests from the client. You can use this, for example, to define a two-year service to a customer.

As you allocate licenses, the license server does not allow the sum total of the reserved user count to exceed the total license count installed on the license server.

**Related Documentation**

- License Management

## Configuring a Device as a License Server

The following outlines the steps to configure a device as a license server. These steps assume that you have already performed the license key generation and activation steps.

Prior to the 8.3R1 release, only PCS hardware devices could be configured as a license server. Virtual appliances could not be configured as a license server.

After you download or receive your license keys by using email:

1. In the admin console of the license server, choose **System > Configuration > Licensing > Licensing Summary**.

2. Click on the license agreement link. Read the license agreement and, if you agree to the terms, continue to the next step.

3. Enter your license key(s) and click **Add**.

4. Click the **Configure Clients** tab.

5. Select the **Enable Licensing server** check box.

6. (optional) Click **Advanced Settings** and enter the following values:

   - Incremental Lease Duration
   - Lease Renewal Interval

7. Click **Save Changes**.

An example of the summary section after you configure your clients is shown in <u>Figure 9</u>.

**Figure 9: Configured License Server with No Clients**
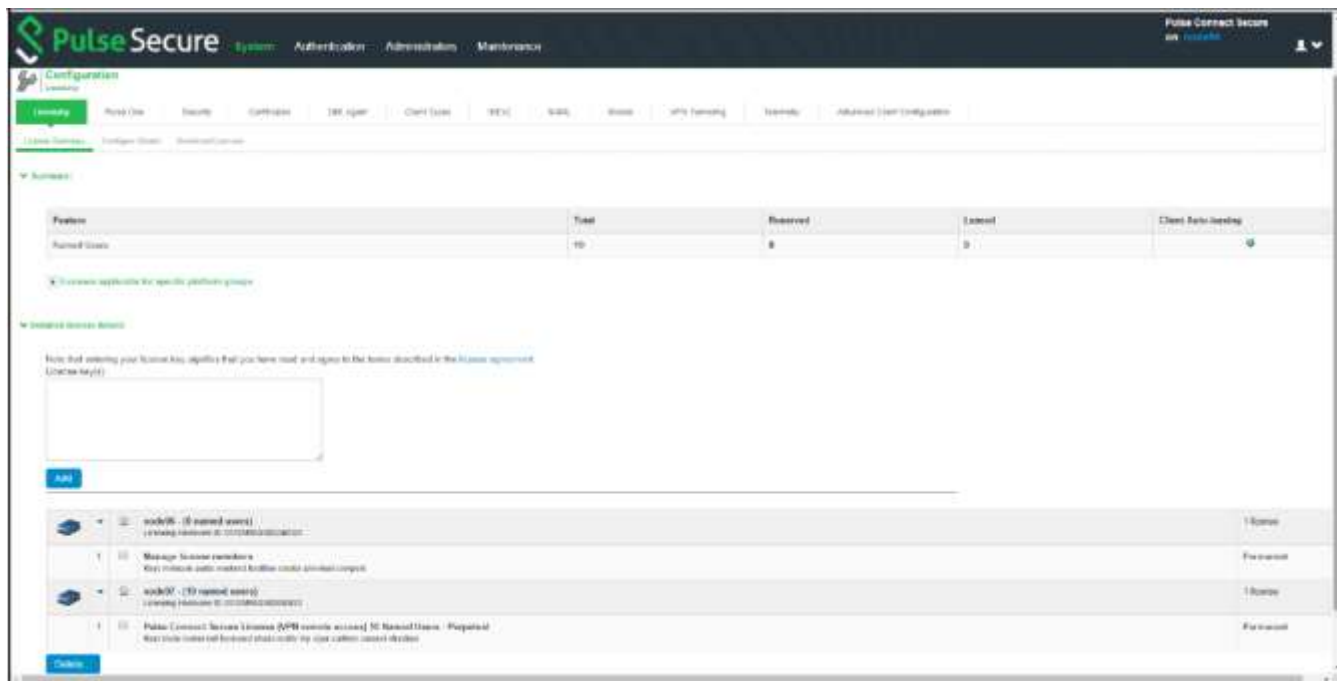
Then:

1. In the admin console of the license server, choose **System > Configuration > Licensing > Configure Clients**.

2. Click **New Client**.

3. Enter the **Client ID**. The ID is defined on the client device under **System > Configuration > Licensing > Configure Server**.

4. Enter the client password and confirm it. The password is defined on the client device under **System > Configuration > Licensing > Configure Server**.

5. (optional) Enter the client configuration expiration date.

6. Select the client's platform from the list. The list includes the latest PCS hardware devices like PSA 7000.

7. Select the product type to be configured to (**PCS** or **PPS**).

8. For each feature you want to lease to this client, enter:

   - **Reserved Count**— the number of licenses to reserve for this client. The reserve count must be less than the available amount displayed.

   - **Incremental Count**— the incremental number of licenses to grant when the client requests more licenses. If the number of licenses on the client plus this incremental value is greater than the maximum count, no additional licenses are granted.

   - **Maximum Count**— the maximum number of licenses a client can receive for this feature. This value must be equal to or greater than the reserved count.

Available counts are updated as you configure the client. For example, see Figure 10.

9. Click **Save Changes**.

The License clients table displays the client information you entered. If the client is a member of a cluster, the cluster name is also displayed after the client contacts the server.

Figure 10: Available Counts are Updated as Clients are Configured

### Related Documentation

- [Configuring a Device as a License Client](#)
- [Configuring the Automated Downloading of License Keys](#)
- [Disabled Features on a License Server](#)

## Backing Up and Restoring License Server

License server can be deployed only in an Active-Passive mode, but cloud environments do not support Active-Passive cluster. Hence, license server has to be deployed in a Standalone mode.

**Assumption:**

Primary Virtual License Server (VLS) is deployed with the following:

- Licenses are installed using valid authorization codes.
- License clients are configured with the host name of the license server, and leasing is working.

For details, see Configuring a Virtual Appliance as a VLS.

An administrator should have the disaster recovery plan and must follow the below steps:

1. Export binary system and user configurations from the primary VLS.
2. Deploy a fresh secondary VLS.
3. Import the system configuration (except network settings and licenses) and user configuration (without downloading the licenses) to secondary VLS.
4. When the primary VLS goes down, immediately replace it with the secondary VLS.

## Backing Up Configurations

To back up the binary system configurations:

1. In the primary VLS, navigate to **Maintenance > Import/Export > Import/Export Configuration.**
2. In the Export section, click **Save Config As** to export binary system configuration to a file.
3. You can optionally password-protect this file.

Figure 11: Back Up Binary System Configuration
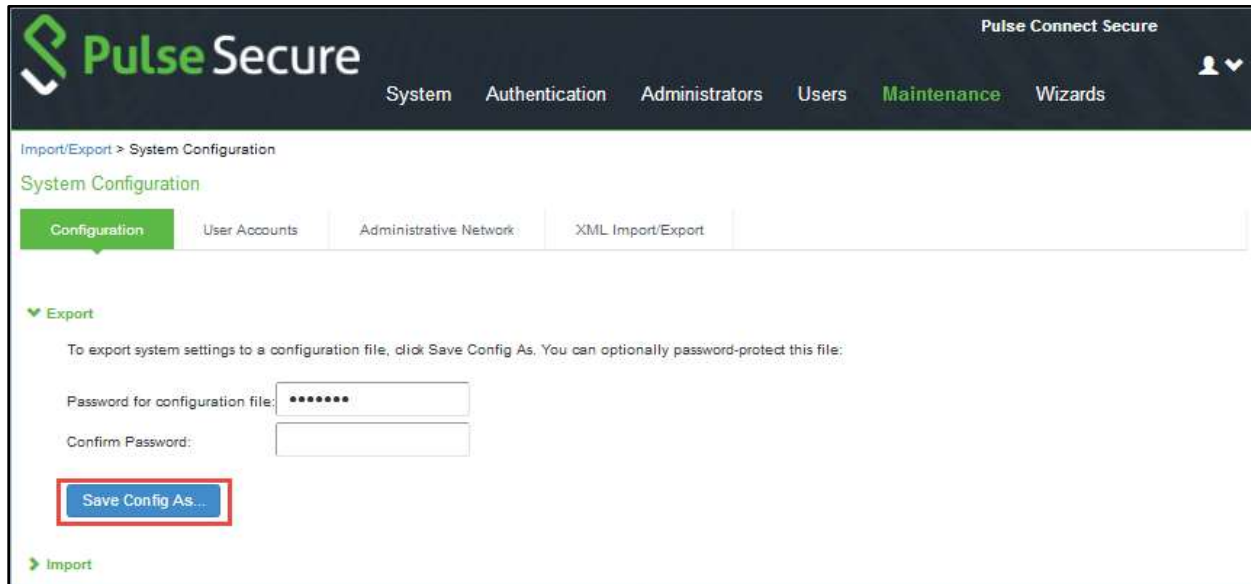


To back up the user configurations:

1. In the primary VLS, navigate to **Maintenance > Import/Export > Import/Export Users.**
2. In the Export section, click **Save Config As** to export users' configuration to a file.
3. You can optionally password-protect this file.

Figure 12: Back Up Users Configuration
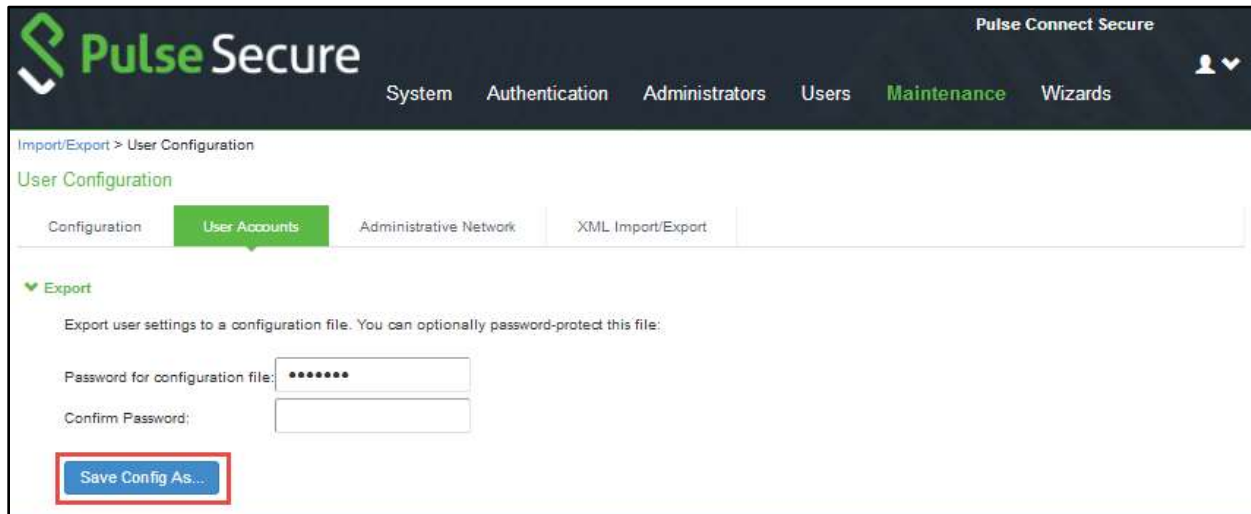
## Restoring Configurations

If the primary VLS goes down, deploy a fresh secondary VLS; for details, see Configuring a Virtual Appliance as a VLS. And restore the system and user configurations from the exported files generated in the backup configurations steps.

**Recommendation 1: Import everything but the IP address**

If the authentication codes installed on primary license server are not readily available with the administrator, then follow the below procedure steps.

*i* **NOTE:** Use this option only if the exported configuration file is from a standalone node.

To restore the exported binary system configurations:

1. In the secondary VLS, navigate to **Maintenance > Import/Export > Import/Export Configuration.**
2. In the Import section, select the **Import everything but the IP address** option.
3. Click **Browse** and select the system configuration file, and then click **Import Config**.

Figure 13: Restore Binary System Configuration – Import Options
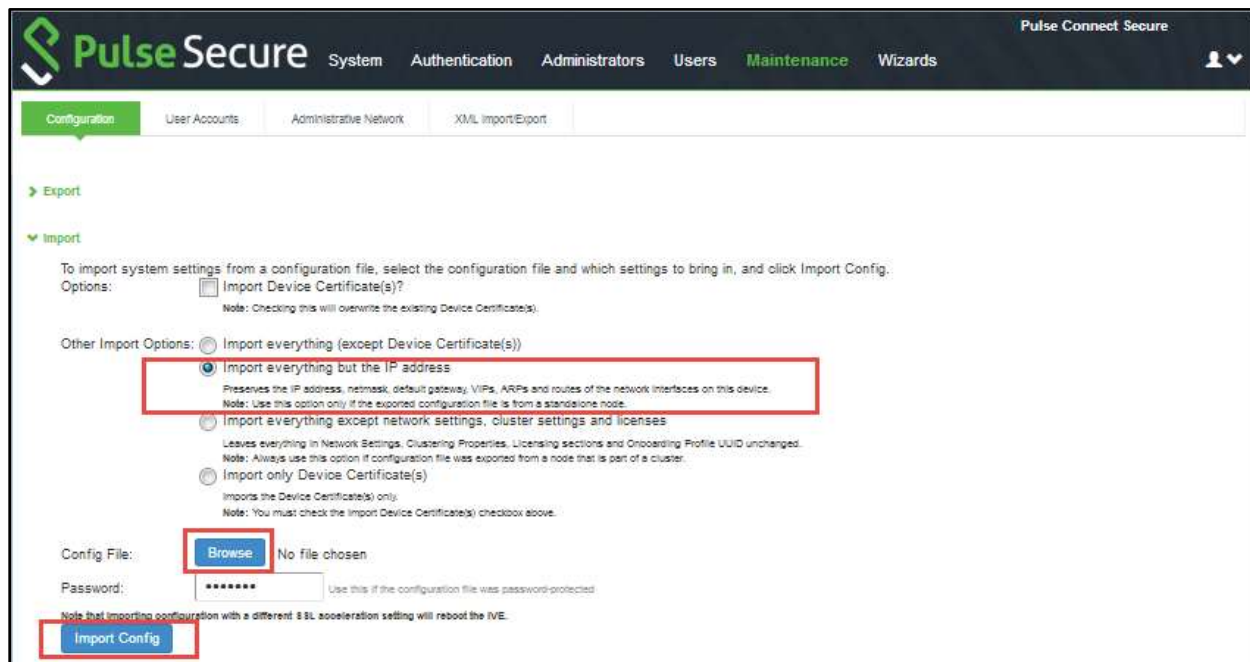


To restore the exported user configurations:

1. In the secondary VLS, navigate to **Maintenance > Import/Export > Import/Export Users.**
2. In the Import section, click **Browse** and select the users' configuration file, and then click **Import Config**.

Figure 14: Restore Users Configuration
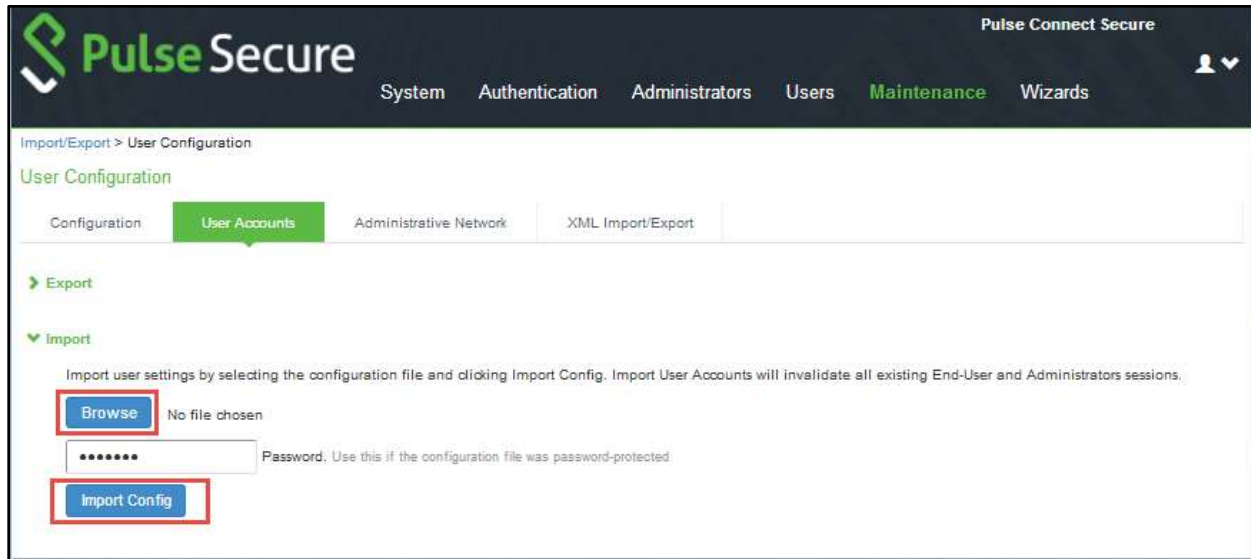


3. Ensure DNS is updated so that license server hostname used on license clients resolves to secondary VLS.

ⓘ **NOTE:** The secondary VLS will be used henceforth, and this has a 90-day grace period from the day of importing of license.

4. Once primary VLS is back online, if needed, administrator can repeat the above steps to restore and use primary VLS for leasing.

Figure 15: License Expiration Notification
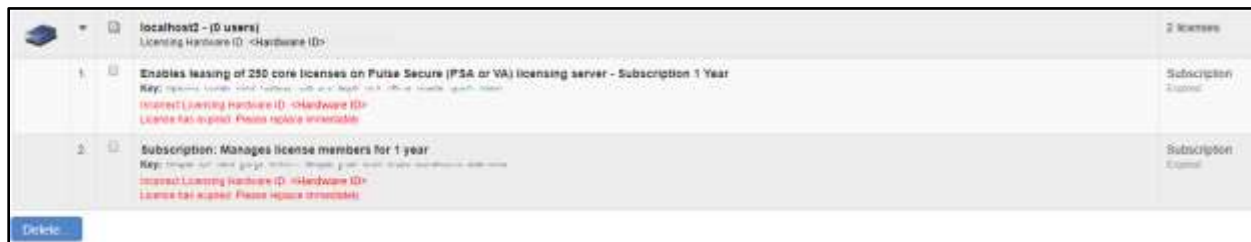


**Recommendation 2: Import everything except network settings, cluster settings and licenses**

If the authentication codes installed on primary license server are readily available with the administrator, then follow the below procedure steps.

To restore the exported binary system configurations:

1. In the secondary VLS, navigate to **Maintenance > Import/Export > Import/Export Configuration.**
2. In the Import section, select the **Import everything except network settings, cluster settings and licenses** option.
3. Click **Browse** and select the system configuration file, and then click **Import Config**.
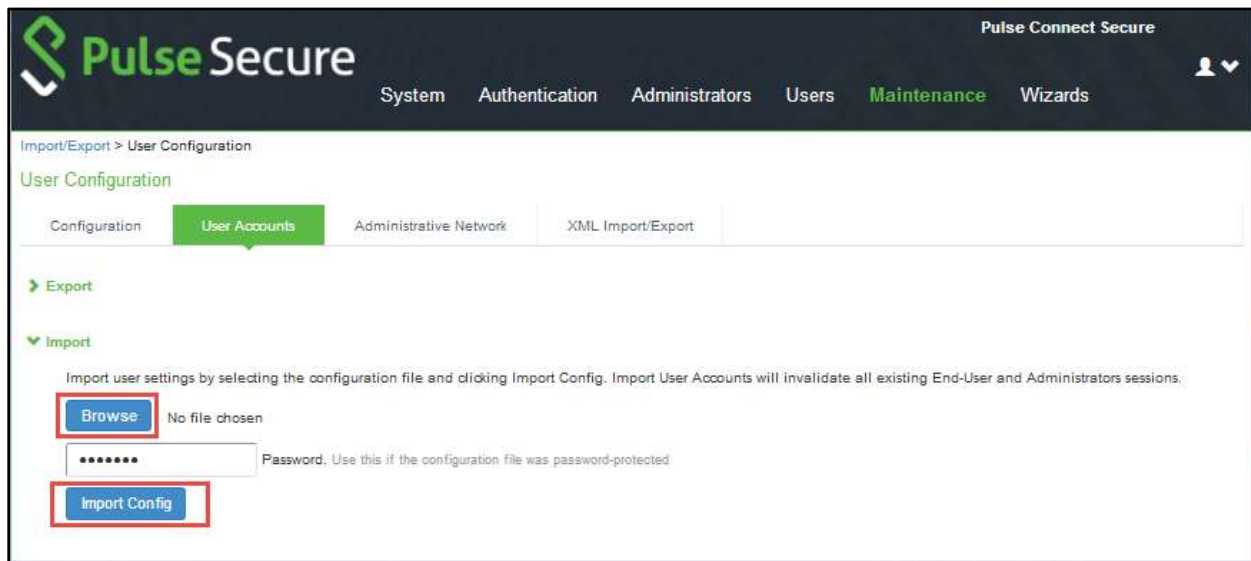
Figure 16: Restore Binary System Configuration – Import Options
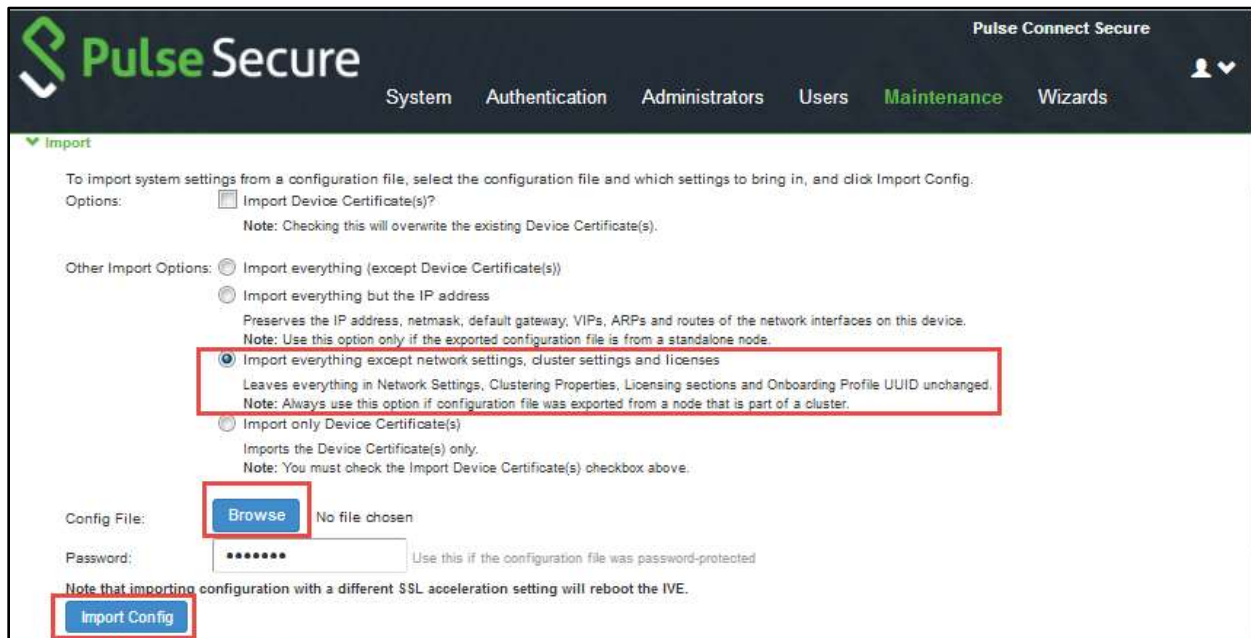


To restore the exported user configurations:

1. In the secondary VLS, navigate to **Maintenance > Import/Export > Import/Export Users.**

2. In the Import section, click **Browse** and select the users' configuration file, and then click **Import Config**.

Figure 17: Restore Users Configuration

3. Once binary system and users' configuration import is successful, re-install all licenses that were installed on primary VLS onto secondary VLS by re-using the same authentication codes that were used for installing licenses on primary VLS.

   **ℹ️ NOTE:**
   - Before re-using authentication codes, ensure primary VLS is unreachable. Otherwise, violations would be raised to Pulse Cloud Licensing Server (PCLS).
   - The secondary VLS will be used henceforth, and the 90-day grace period is not applicable here.

4. Ensure DNS is updated so that license server hostname used on license clients resolves to secondary VLS.

5. Once primary VLS is back online, if needed, administrator can repeat the above steps to restore and use primary VLS for leasing.

# CHAPTER 6

# Configuring the License Client

- Configuring a Device as a License Client
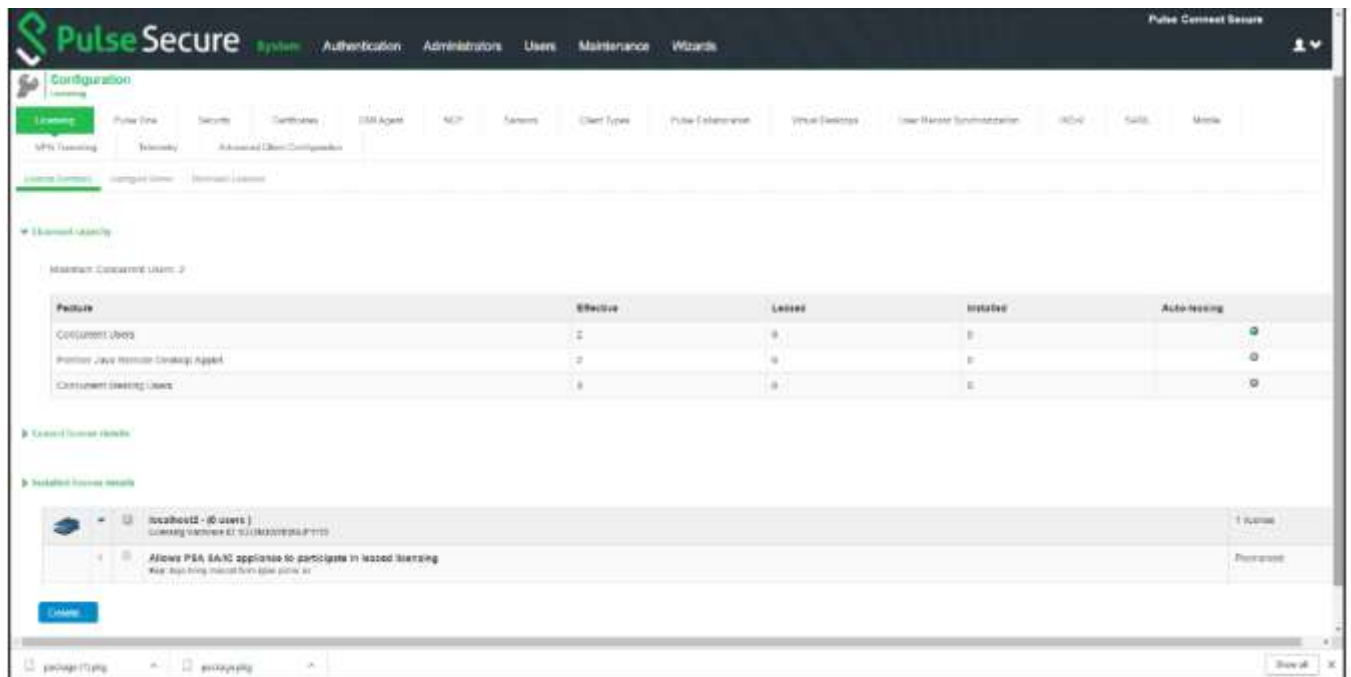
## Configuring a Device as a License Client

The following procedure assumes that you have already performed the license key generation and activation steps.

After you download or receive your license keys by using email:

1. In the admin console, choose **System > Configuration > Licensing > Licensing Summary**.
2. Click on the license agreement link. Under Installed License Details, read the license agreement and, if you agree to the terms, continue to the next step.
3. Enter your license key(s) and click **Add**.
4. Click **Save Changes**.

An example of the client's License Summary tab is shown in Figure 18.

**Figure 18: Client Window after Installing Member License**

To configure this device as a license client:

1. In the admin console, choose **System > Configuration > Licensing > Configure Server**.

2. Enter the name of the license server. You can specify the IP address or hostname.

3. Enter a unique ID for this client. This ID is used to communicate and verify this client with the license server.

   IDs can contain alphanumeric characters. There is no restriction on the number of characters.

   You will need to enter this ID on the license server when adding clients.

4. Enter and confirm a password for this client. You will need to enter this password on the license server when adding clients.

5. Select the network to communicate with the license server from the Preferred Network menu.

6. If the preferred network is configured correctly and enabled, it is used. Otherwise, the internal network is used.

7. Select the **Verify SSL Certificate** check box if you want the client to verify the server's SSL certificate when establishing communication with it.

**Figure 19: Licenses Applicable for Specific Platform Groups**
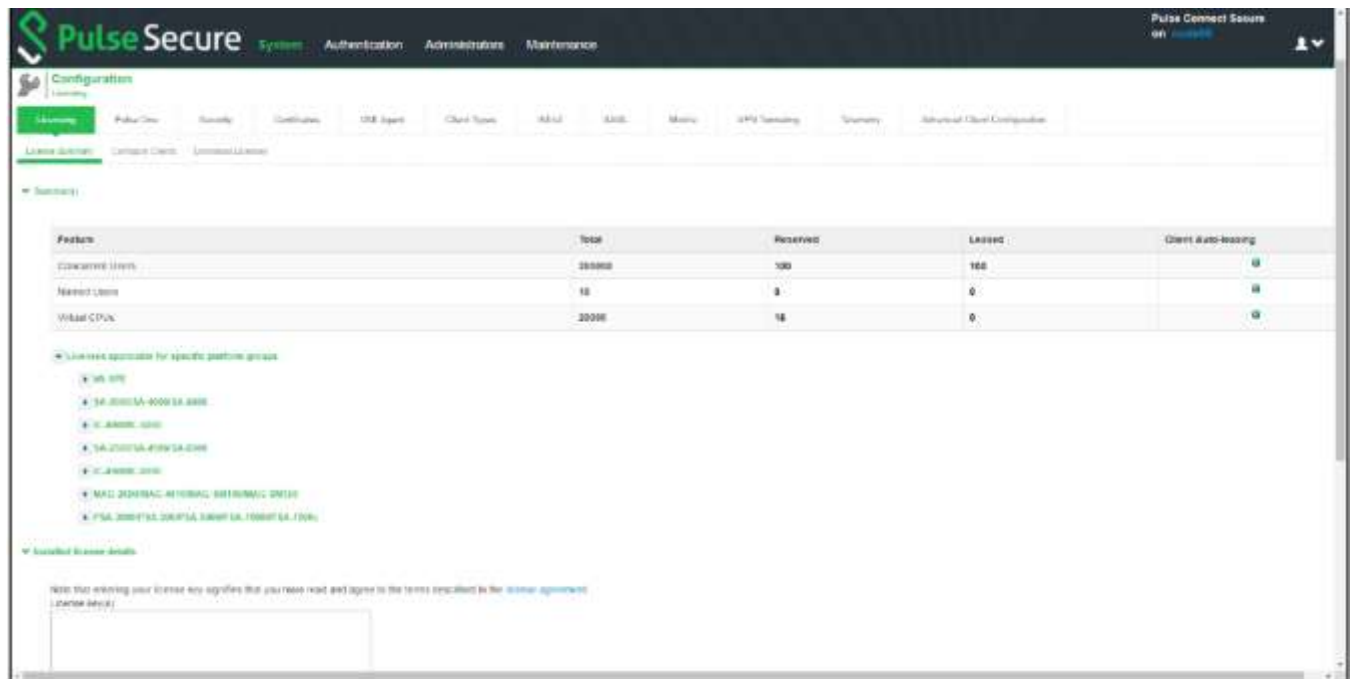


If this client is part of a cluster, you can change configuration information for this node or any node within the same cluster by selecting the node name from the pull-down menu. You can also select Enter cluster to update general cluster configuration information.

**Related Documentation**

- Configuring a Device as a License Server
- Configuring the Automated Downloading of License Keys

# CHAPTER 7

# Automatic Downloading, Surrendering and Recalling Licenses

- Configuring the Automated Downloading of License Keys
- Surrendering and Recalling Licenses

## Configuring the Automated Downloading of License Keys

Administrators are given the option to automatically download license keys from the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net. This feature is applicable for all license keys (subscription-based, capacity-based, and so forth.) Communication is done via https.

The automated download process uses the following schedule for contacting the Pulse Secure Licensing and Software Download Center:

- Once every 3 months if there are no expiring licenses.
- Once a month if a license is expiring within the next 3 months
- Once a week if a license is expiring within the next 2 weeks
- Once a day if a license grace period is expiring within the next week

To configure the device for automated query and downloading of license keys from the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net:

1. In the admin console, choose **System > Configuration > Licensing > Download Licenses**.
2. Select the preferred network to communicate with the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net.
3. Select **Enabled** if you want to automate the downloading of license keys.
4. Under **On Demand License Downloads**, enter the authentication code in the text box to contact Pulse Secure to download and install licenses on the machine.
5. Click **Save Changes.**

You can, at any time, click **Download and Install** to immediately query the Pulse Secure Licensing and Software Download Center at https://my.pulsesecure.net and download the updated license keys.

**Related Documentation**

- Configuring a Device as a License Server
- Configuring a Device as a License Client

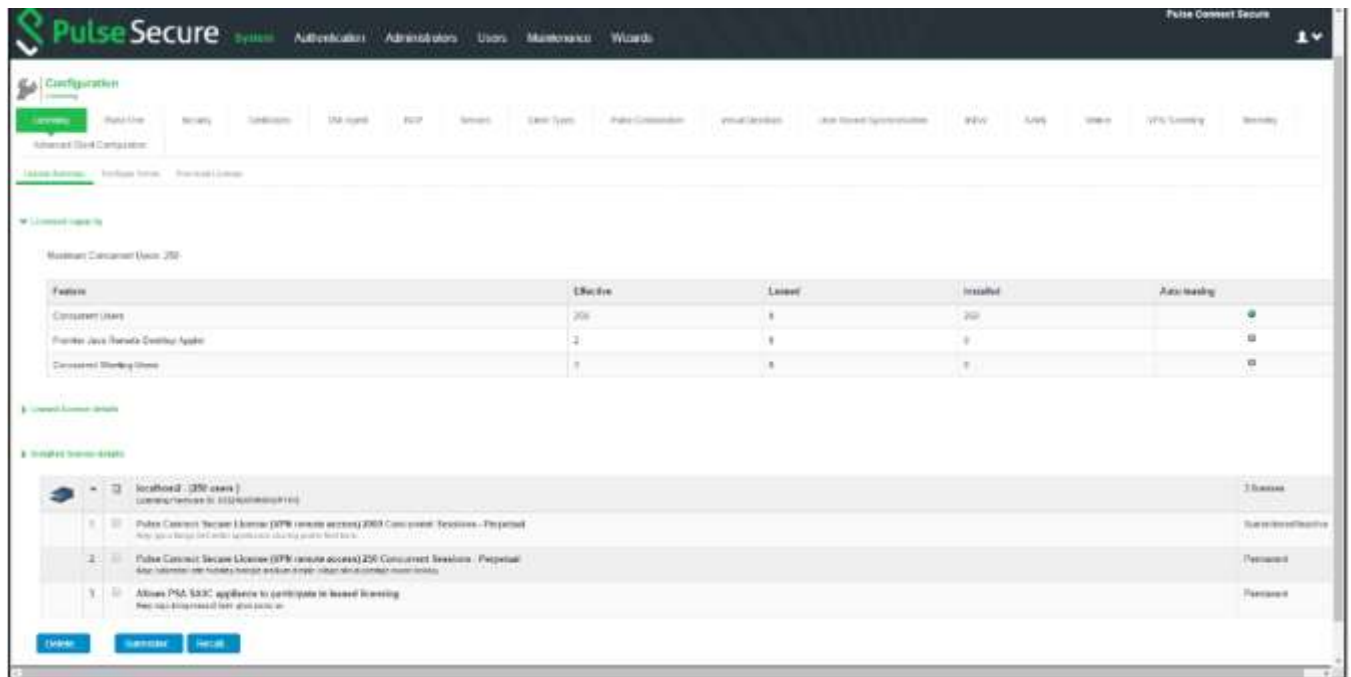## Surrendering and Recalling Licenses

Surrendering and recalling licenses can be done only at the license client. You can surrender only perpetual licenses.

To surrender user count licenses:

1. In the admin console, choose **System > Configuration > Licensing > License Summary**.

2. Under Installed License Details, select the check box next to the license you want to surrender and click **Surrender**.

   The Installed License Details table displays the license as being surrendered along with the date it was surrendered. When the client has successfully communicated the surrender status to the server, the License Summary page on the license server displays the surrendered license and the client that surrendered the license. Figure 20 and Figure 21 show the license details page on a license client and license server.

**Figure 20: Surrendered Licenses on a Client**

**Figure 21: Surrendered Licenses on a License Server**



To recall user count licenses:

1. In the admin console, choose **System > Configuration > Licensing > License Summary**.
2. Under Installed License Details, select the check box next to the license you want to recall and click **Recall**.

**Related Documentation**

- [Configuring a Device as a License Client](Configuring a Device as a License Client)

# PART 5

# Configuring a Virtual Appliance as a Virtual License Server

- Configuring a PCS Virtual Appliance as a Virtual License Server

# Configuring a PCS Virtual Appliance as a Virtual License Server

- Overview
- Configuring a Virtual Appliance as a VLS

## Overview

Prior to the 8.3R1 release, PCS License Server software was supported on PCS hardware devices only. Now, PCS 8.3R1 has added VMWare-based Virtual License Server (VLS) and Cloud based License Server capabilities. The VLS facilitates a license server to run on a virtual machine and provide the same functionality as the hardware-based license server. A VLS leases licenses only to PSA hardware and PSA-Vs.

The VLS sends heartbeats every 8 hours to the Pulse Cloud Licensing Service. If it is not able to connect to Pulse Cloud Licensing Service for 24 days, then licensing functionality is disabled. PCS will log this information under Event Logs.
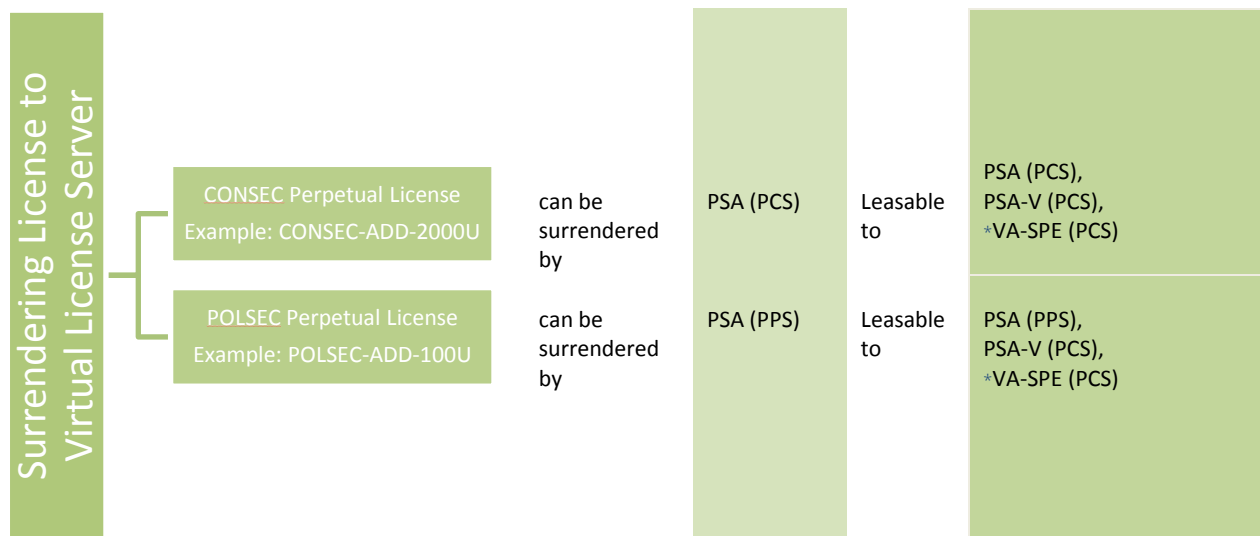
The Configure Clients page appears only after installing or downloading license server license for VLS. See Figure 22 which depicts the flow diagram for leasing licenses from a VLS and Figure 23 which depicts the flow diagram for surrendering licenses to a VLS.

Figure 22: Flow Diagram for Leasing Licenses from a Virtual License Server

| Virtual License Server | | | |
|---|---|---|---|
| CONSEC Subscription License Example: CONSEC-5000U-1YR | Leasable to | PSA (PCS), PSA-V (PCS), *VA-SPE (PCS) | |
| POLSEC Subscription License Example: POLSEC-500U-1YR | Leasable to | PSA (PPS), PSA-V (PCS), *VA-SPE (PCS) | |
| CONSEC Perpetual License Example: CONSEC-ADD-2000U | Leasable to | PSA (PCS), PSA-V (PCS), *VA-SPE (PCS) | |
| POLSEC Perpetual License Example: POLSEC-ADD-100U | Leasable to | PSA (PPS), PSA-V (PCS), *VA-SPE (PCS) | |

**NOTE:** We still support leasing of licenses from 9.0Rx license servers to pre-9.0Rx license clients (VA-SPE).

Figure 23: Flow Diagram for Surrendering Licenses to a Virtual License Server

| Surrendering License to Virtual License Server | | | | | |
|---|---|---|---|---|---|
| CONSEC Perpetual License Example: CONSEC-ADD-2000U | can be surrendered by | PSA (PCS) | Leasable to | PSA (PCS), PSA-V (PCS), *VA-SPE (PCS) | |
| POLSEC Perpetual License Example: POLSEC-ADD-100U | can be surrendered by | PSA (PPS) | Leasable to | PSA (PPS), PSA-V (PCS), *VA-SPE (PCS) | |

**NOTE:** Pulse Secure still supports leasing of licenses from 9.0Rx license servers to pre-9.0Rx license clients (VA-SPE).

## Configuring a Virtual Appliance as a VLS

- Booting a PCS Virtual Machine in VLS Mode
- Obtaining License Keys
- Viewing the License Summary
- Supported Platforms

### Booting a PCS Virtual Machine in VLS Mode

To boot a virtual machine in the VLS mode:

1. Select the **Boot** option.
2. During boot of a virtual machine, the following new console query is added to boot machine as a license server:

   **Do you agree to the terms of the license agreement (y/n/r)?.**

   Entering '**y**' indicates that you have read and agreed to the terms described in the license agreement.

   **Do you want to enable Virtual License Server (y/n)?**

   Enter '**y**' to boot as License Server.
3. Upon entering **y**, the virtual machine boots as a license server.
4. The virtual machine boots in VLS mode. After virtual machine comes up, only license server related UI items are exposed.

```
Do you agree to the terms of the license agreement (y/n/r)?:                    y

Do you want to enable Virtual License Server (y/n)?:
```

### Obtaining License Keys

A VLS admin obtains an authentication code for his entitlement externally via e-mail. The admin must enter the authentication code in the license server download page to validate and fetch license keys. If validation is successful, the admin receives the license keys in return.

To obtain license keys:

1. Go to **System > Configuration > Download Licenses**.
2. Under **On demand license downloads**, enter the authentication code in the text box.
3. Click on **Download and Install**.

**Figure 24: Download License and Install**
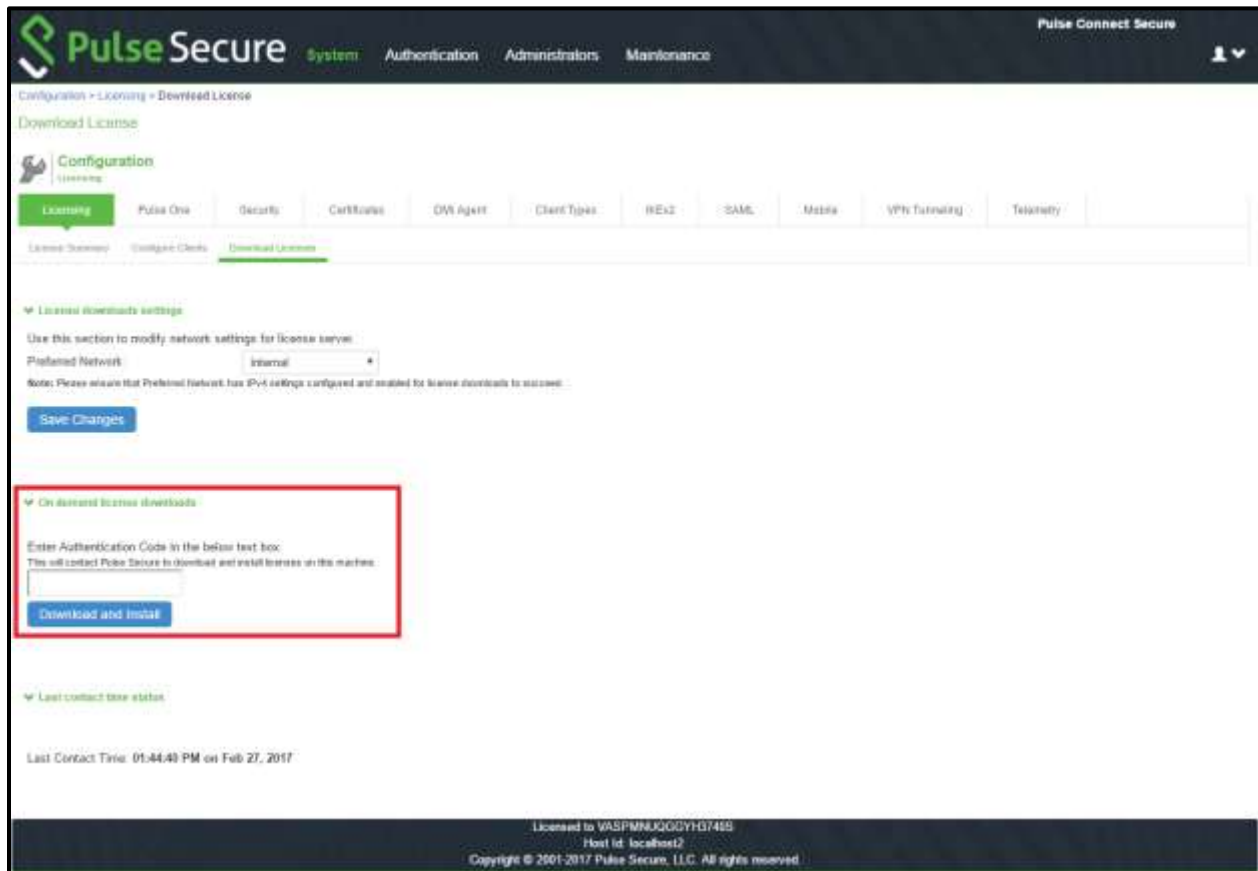


4. Now, go to the **License Summary** tab to view a list of licenses installed.

## Viewing the License Summary

By enabling VLS through an authentication code, the VLS just functions as a normal hardware-based license server. However, the VLS supports only PSA hardware licenses and VM subscription license. In addition, the VLS periodically sends heartbeat messages to the Pulse Cloud Licensing Service. This should help Pulse Cloud Licensing Service to identify any duplicate VLS instances. If the VLS is not able to send heartbeat messages to the Pulse Cloud Licensing Service for a prolonged period then, VLS enters into grace period and ultimately stops its functionality as a licensing server.

1. Under **Summary**, click the drop-down Licenses applicable for specific platform groups.
2. A list of PSA-V devices and PSA devices gets displayed. See Figure below.

**Figure 25: License Summary – PSA-V and PSA Devices**



 **NOTE:** The Configure Clients page appears only after installing or downloading license server license for VLS.

## Supported Platforms

The following platforms are supported by a VLS:

- PSA-V
- PSA-300
- PSA-3000
- PSA-5000
- PSA-7000f
- PSA-7000c

## Core License Distribution from License Server for MSSP Deployments

For MSSP deployments, the Virtual Appliance was used to download licenses from Pulse Cloud Licensing Service through authentication codes. Considering high security environments where accessing cloud service is not allowed, the core license distribution feature is provided for leasing the core licenses from the license server.

The following two forms of leasing are supported:

**Limited Core Licensing:** In this licensing model, MSSP installs core packs on the license server that allows leasing a given number of cores to the license clients. An administrator can only lease cores and needs a separate license to lease concurrent or named users. Example: SKU **PS-CORE-XXC-NYR** where XX is 20, 40, 100, 250 and 500. The SKUs are stackable.

VLS/HLS can reclaim the number of cores allocated to a license client by deleting the license client entry.

**Unlimited Core Leasing:** In this licensing model, MSSP is allowed to lease as many core licenses from the license server as needed. Concurrent licenses are also made part of MSSP. Example: **PS-MSP-XXC-NYR**.

Both these licensing models are available as Subscription.

### Configuring a License Client on the License Server

This section describes the steps to install and lease cores to license clients from license server.

**Prerequisites**

- PSA/VLS device acting as license server
- VA acting as license client

**Unlimited Core Leasing**

1. Navigate to **System > Configuration > License Summary** page and install MSP SKU on license server. Installing MSP SKUs will also enable license server functionality on VLS or PSA License Server. No separate license server license is needed.

   On a PSA license server, leasing functionality must be explicitly enabled by selecting the **Enable Licensing Server** check box under **System > Configuration > Licensing > Configure Clients**.

Figure 26: MSP SKU on License Server
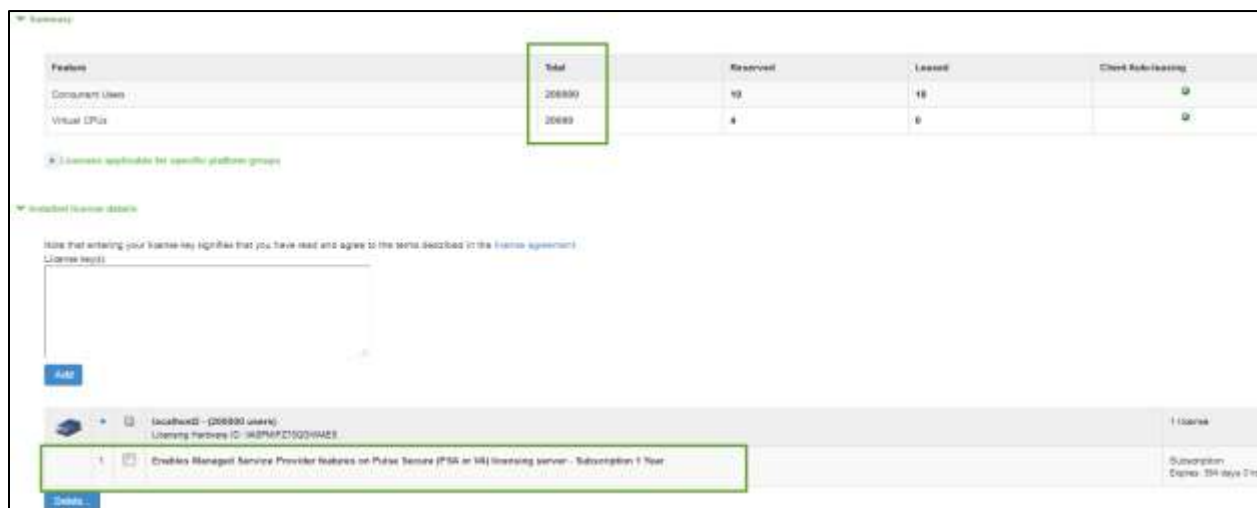
2. Navigate to **System > Configuration > License Clients** and configure license client as shown below:

- Platform should be Virtual Platform
- Product can be PCS / PPS
- Virtual Platform can be one of PSA3000-V, PSA5000-V, PSA7000-V based on requirement

**Note:**

- If the license client is running on pre-9.0Rx, select Virtual Platform from the **Platform** drop-down list and select VA-SPE from the **Virtual Platform** drop-down list.
- If the license client is running on 9.0R1 / 9.0R2, select PSA-V from the **Virtual Platform** drop-down list.
- If the license client is a cluster, then both the nodes of the license client cluster should be configured to lease same number of cores.

Figure 27: Configure License Client

Figure 28: Platform page on License Client before leasing Cores



3.  Navigate to **System > Configuration > Licensing > Configure Server** section and configure license server details on license client.

4.  Now, from License Summary page, click on **Pull State from Server** button and observe the core leased information on License Summary page as shown below.

Figure 29: License Summary Page - Core Leased Information



5.  After successful leasing of cores, Platform Model is updated to PSA3000-V based on cores leased as shown below.

Figure 30: Platform page on License Client after leasing Cores



## Limited Core Leasing

In case of Limited Core Leasing, install Limited Core SKUs licenses that will allow leasing up to maximum available cores as part of installed Core SKUs across different clients.

In addition to above Limited Core SKU, license server license needs to be additionally installed in order to enable license server functionality.

ℹ Note:

- If PSA-V license clients are running Pre-9.0Rx builds, then admin will not be allowed to upgrade to 9.0R3 if there are no core licenses installed.
- Admin has to install 2/4/8 core licenses and perform upgrade to 9.0R3 after which PSA-Vs can lease the cores from the license server.
- Leasing of cores is allowed to Virtual Appliances running 9.0R3 onwards.

## Enabling Reporting of License Analytics to Pulse Cloud Licensing Server (PCLS)

On VLS, installation of Unlimited Core license SKU via authcode enables reporting/uploading licensing analytics to PCLS by default.

On PSA license server, reporting of license analytics to PCLS does not get enabled by default. After installation of the license key, administrator has to explicitly install authcode by navigating to **System > Configuration > Licensing > Download Licenses** and authenticate the hardware by installing authcode under the **On-Demand License Downloads** section. This operation should be done on both the nodes of license server cluster.

**Figure 31: Install Auth Codes**

# PART 6

# Appendix

- [Disabled Features](#)
- [Available Subscription Licenses](#)
- [Member License](#)

# Appendix A

## Disabled Features on a License Server

The following windows and features are disabled in the administrator console when a device is configured as a license server:

- System > Status > Meeting Schedule
- System > Status > Virtual Desktop Sessions
- System > Configuration > Secure Meeting
- System > Configuration > User Record Synchronization
- System > Configuration > Sensors
- System > Configuration > Virtual Desktops
- System > Configuration > NCP
- System > Network > Network Connect
- System > Clustering
- System > Virtual Systems
- System > IF-MAP Federation
- System > Log/Monitoring > Sensors
- System > Log/Monitoring > User Access
- System > Log/Monitoring > Client Logs
- Maintenance > Push Config
- Maintenance > Troubleshooting > Monitoring > Cluster
- Maintenance > Troubleshooting > User Session
- Maintenance > Archiving > Secure Meetings
- Maintenance > Import/Export > IVS

In addition, the following services are halted on the license server:

- Mail proxy services
- Meeting processes
- Agentman daemon
- Federation server
- Federation client

# Appendix B

## Available Subscription Licenses

The following subscription licenses are available (X and Z will be replaced by the appropriate number of user and/or year count):

- ACCESS-XU-ZYR—Concurrent user count subscription
- ACCESS-RDP-XU-ZYR—Embedded RDP applet
- ACCESS-SUB-SVR-ZYR—Allows a device to be a license server

**NOTE:** With Connect Secure 7.1 and later software, you can use either the ACCESS-LICENSE-SVR or the ACCESS-SUB-SVR-ZYR to identify a license server. With Connect Secure 7.0 and earlier software, you must use the ACCESS-SUB-SVR-ZYR.

Both capacity-based licenses (such as ACCESS-EES) and licenses (such as ACCESS-SUB) stack. For example:

- If you purchase both a one ACCESS-10K-1YR license and one ACCESS-RDP-50U-1YR license, they do not stack. They must be of the same type. For example, two ACCESS-10K-1YR licenses stack.
- If you purchase two ACCESS-RDP-50U-1YR licenses, they stack to 100U for 1 year.
- If you purchase both an ACCESS-SUB-SVR-1YR and an ACCESS-SUB-SVR-2YR licenses, they stack to a three-year license.
- Note the following:
    - ACCESS-SUB-SVR licenses have a maximum of 3 years. Pulse Secure Licensing and Software Download Center @ https://my.pulsesecure.net will reject requests that stack ACCESS-SUB-SVR licenses to more than 3 years.
    - Renewal licenses must match the license being renewed. For example, if your ACCESS-MTG-500U-1YR licenses is about to expire, you can only renew another ACCESS-MTG-500U-1YR-R license. You cannot renew it with an ACCESS-MTG-500U-2YR-R license.

# Appendix C

## Member License

LICENSE-MBR licenses are required for leasing and surrendering perpetual licenses installed on the hardware PSA appliances.  Surrendering licenses is not same as releasing back the leased licenses from a licensing server. When a customer has installed perpetual user licenses on PSA appliance directly, and now would like to use licensing server for centralized license management, then the user licenses should be surrendered. This is like transferring the user licenses from PSA appliance to licensing server permanently.

The LICENSE-MBR license is required for:

- Surrendering perpetual concurrent User and Meeting licenses from hardware PSA appliances to licensing server

**NOTE**: The LICENSE-MBR license must be installed on all nodes in a cluster for surrendering licenses installed on the cluster nodes