

FlexNet Embedded 2023.08

FlexNet License Server Manager Guide



Legal Information

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FlexNet License Server Manager Guide

The FlexNet License Server Manager is a browser-based interface used to monitor and configure the local license server. This tool is provided as a separate package, called `FlexnetLicenseServerManager-<version>.zip`. The package is a Docker container which holds the image `revenera/flsm:<version>`.

The *FlexNet License Server Manager Guide* includes the following chapters to describe how to use the License Server Manager:

- [Setting Up the FlexNet License Server Manager](#)
- [Providing Credentials on a Secured License Server](#)
- [License Server Manager Information and Settings](#)
- [License Server Properties View](#)
- [Page Navigation for Views in the License Server Manager](#)
- [Features View](#)
- [Named License Pools View](#)
- [Devices View](#)
- [Reservations View](#)
- [Offline Server Updates View](#)
- [Client Key Operations View](#)

Setting Up the FlexNet License Server Manager

This section guides you through the installation of the License Server Manager.

The FlexNet License Server Manager is provided as a Docker image in the form of a .zip file. You must therefore install Docker to be able to run the License Server Manager.

The FlexNet License Server Manager runs on an Nginx web server. The Nginx web server is included in the `FlexnetLicenseServerManager-<version>.zip` package, therefore you do not need to install Nginx.

Installing Docker is not covered in this section. For information about downloading and installing Docker, refer to the Docker documentation (<https://docs.docker.com/get-docker/>).

You can verify if Docker is up and running using the following command:

```
docker -v
```

You will see output similar to the following:

```
root@Admin:~# docker -v
Docker version 20.10.7, build 20.10.7-0ubuntu5~20.04.2
```



Task

To install the FlexNet License Server Manager

1. Run the following command to load the image file:

```
docker load -i <location of .zip file>
```

You will see output similar to the following:

```
D:\Git\FLSM>docker load -i flsm1.zip
7cd52847ad77: Loading layer [=====>] 7.338MB/7.338MB
d8a5a02a8c2d: Loading layer [=====>] 5.32MB/5.32MB
5e59460a18a3: Loading layer [=====>] 3.584kB/3.584kB
152a948bab3b: Loading layer [=====>] 4.608kB/4.608kB
c4d67a5827ca: Loading layer [=====>] 3.584kB/3.584kB
f1bee861c2ba: Loading layer [=====>] 7.168kB/7.168kB
042cd3f87f43: Loading layer [=====>] 29.85MB/29.85MB
dd9369c9bea6: Loading layer [=====>] 4.096kB/4.096kB
bf8fe155c7b7: Loading layer [=====>] 6.38MB/6.38MB
Loaded image: reverera/flsm:2023-06
```

2. Use the following command to verify the image:

```
docker images
```

You will see output similar to the following:

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
reverera/flsm	2023-06	135f63352db8	9 days ago	47.4MB

3. Use the following command to start the FlexNet License Server Manager with the default nginx configuration file. Use the -p flag to assign the port configuration:

```
docker run -d -p 8080:80 reverera/flsm
```

4. Use a custom configuration file such as default.conf to enable https mode for the License Server Manager. The file default.conf is located inside the container (/etc/nginx/conf.d). Add the following text to default.conf:

```
server {
    listen 1443 ssl http2;
    listen [::]:1443 ssl http2;
    server_name 10.80.148.49;
    ssl_certificate /etc/nginx/conf.d/servercert.pem;
    ssl_certificate_key /etc/nginx/conf.d/serverkey.pem;
}
```

5. Use the following command to copy the `servercert.pem`, `serverkey.pem` and `default.conf` files to the container in which the License Server Manager is running:

```
docker run -it -v /root/testing/test2/conf/default.conf:/etc/nginx/conf.d/default.conf -v /
root/testing/test2/conf/serverkey.pem:/etc/nginx/conf.d/serverkey.pem -v /root/testing/test2/
conf/servercert.pem:/etc/nginx/conf.d/servercert.pem -p 1443:1443 reverera/flsm
```

This command also starts the License Server Manager container on port 1443.

6. Point a web browser to **`http://localhost:8080`** (where `8080` is replaced by the correct port, if necessary).

By default, the License Server Manager opens to the **About** view. However, if administrative security is enabled on the license server and you have not provided your authorization credentials, the **Login** view is opened instead so that you can enter these credentials before proceeding with the next steps. (See [Providing Credentials on a Secured License Server](#) for details.)

7. On the left side of the interface, click **License Manager Configuration > Settings**.
8. On the **Settings** view, check that the following settings are defined correctly:
 - **FlexNet License Server Host Name**—The hostname of the machine on which the license server is running.
 - **FlexNet License Server Port**—The port on which the License Server Manager will look for license server. (The default port is 7070.)

To stop the License Server Manager, close the web page and stop the container in Docker.

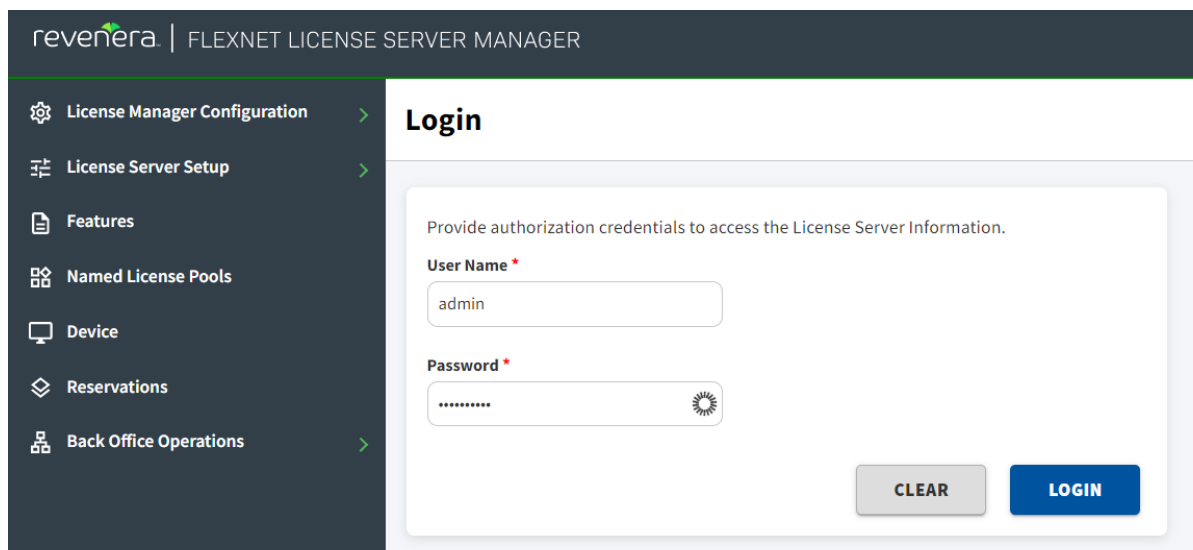


Note • The License Server Manager runs in a container, therefore you cannot use the host name “localhost” for the local license server. For the License Server Manager to connect to a local license server that is running in https mode, License Server Manager must also run in https mode.

Providing Credentials on a Secured License Server

When administrative security is enabled on your license server, anyone attempting to administer the license server will need to provide a set of authorization credentials before starting administrative operations. When you provide your credentials as a license server administrator, you will have administrative privileges on the license server. Additionally, other enterprise users can have credentials to perform limited administrative privileges. Refer to [Managing Administrative Security on a Local License Server or CLS Instance](#) in the FlexNet Embedded License Server Administration Guide for details.

To enter authorization credentials, navigate to **License Server Setup > Login**. Enter the user name for your account in the **User Name** field, enter your password in the **Password** field, and click **Login**.



The screenshot shows the FlexNet License Server Manager interface. On the left is a dark sidebar with a menu containing: License Manager Configuration, License Server Setup, Features, Named License Pools, Device, Reservations, and Back Office Operations. The main content area is titled 'Login' and contains a form with the instruction 'Provide authorization credentials to access the License Server Information.' The form has two fields: 'User Name' with the value 'admin' and 'Password' with masked characters. Below the fields are 'CLEAR' and 'LOGIN' buttons.

Figure 1: Login view to enter authorization credentials

Once the credentials have been verified, you can use the License Server Manager to perform the administrative operations for which you are authorized.

If you attempt to perform an operation in the License Server Manager that requires authorization, but you have not provided credentials or are not authorized to perform the operation, you receive an “access denied” message.

License Server Manager Information and Settings

The top menu item is the **License Manage Configuration** group, which contains the **Settings** and **About** views. The **About** view (not pictured) displays build, system, and browser information. In the **Settings** view, you specify the port number and host name (network name or IP address) for the license server, as well as the number of records to show on a page. These configuration settings appear in a separate list because they can be modified even if the license server is inaccessible, unlike the license server policy settings and configuration properties.

The default port for the license server is 7070.

Settings

Specify configuration settings for the license server. These settings can be modified even when the license server is inaccessible.

Page Size ⓘ

FlexNet License Server Host Name ⓘ

FlexNet License Server Port ⓘ

Connect Using HTTPS ⓘ

☐ Yes

☒ No

Allow Device Drop ⓘ

☐ Yes

☒ No

SAVE

Figure 2: Settings view for License Server Manager

The properties available in this view include:

- **Page size**—The number of records to display per page
- **FlexNet License Server Host Name**—The hostname of the machine the license server is running.
- **FlexNet License Server Listen Port**—The port number for the license server. (The default port for the server is 7070.)
- **Connect Using HTTPS**—The option indicating which protocol—HTTP or HTTPS—must be used for FlexNet License Server Manager communications with the license server:
 - **Yes**—Use HTTPS communications.
 - **No**—Use HTTP communications.

License Server Properties View

The **License Server Properties** view (available by selecting **Properties** from the **License Server Setup** menu) displays the current policy settings used by the FlexNet Embedded local license server. Settings can be overridden in this view, with the exception of settings that could present a security vulnerability if editable by anyone but the producer—such as response lifetime, failover maintenance interval, or enablement of synchronization to the back office.

Any changes made in this view take effect when you click **Save** at the bottom of the page.

Refer to the [Reference: License Server Policy Settings](#) to determine which policy settings you are allowed to update, the internal name for each setting, and its description.

License Server Properties

This page displays the current policy settings used by the FlexNet Embedded local license server. Any changes made in this view take effect when you click **Save**.

- > General Property
- > Secure REST API settings
- > Server Sync Settings
- > License Generation
- > Settings for Server-to-Server Sync Between FlexNet Embedded Servers
- > Capability Polling Settings
- > Locally Deployed License Servers Settings
- > Logging Properties

CANCEL **SAVE**

Figure 3: License Server Properties view

The properties exposed on this page include:

- **General Properties:** The license server hostid, license server version, device UUID, and status. The license server's hostid value is used to fulfill capability requests against a back-office server. If the server has multiple hostid values, the list contains the available hardware Ethernet addresses and dongle IDs. If virtual hosts are supported, the VM UUID will also be listed. Select the value registered with your back-office system.
- **Secure REST API Settings:** Settings that control administrative security on the license server.
- **Server Sync Settings:** Properties for synchronizing to the back office.
- **License Generation:** Policies that help manage served features.
- **Settings for Server-to-Server Sync Between FlexNet Embedded Servers:** Policies for failover synchronization.
- **Capability Polling Settings:** Settings that control whether and how often the license server contacts the back office for license updates and how often the server should retry communications after a failed attempt.
- **Locally Deployed License Server Settings:** Settings specific to your license server and environment.
- **Logging Properties:** Log locations and the lowest level of granularity for log messages captured in the log.

The license server's producer settings are stored in the `producer-settings.xml` file. These settings are described in [Reference: License Server Policy Settings](#).

Page Navigation for Views in the License Server Manager

The [Features View](#), [Named License Pools View](#), [Devices View](#), and [Reservations View](#) provide a navigation tool that enables you to move easily between pages in the view to locate records you want to see. Note that the number of records per page is determined by the **Page Size** setting (under **License Manager Configuration > Settings**).

The navigation tool shows the total number of records available and enables you to select a specific page to which to navigate:



Figure 4: Page navigation tool

Features View

The **Features** view displays all the features installed on the license server.

Feature	Version	Total Count	Total Used	Total Available	First Expiration	Last Expiration	Total Overdraft	Metered	Counted
3D_Rendering	3.2	60	0	60	2025-03-31	permanent	0	false	true
Advance_Printing	1.2	60	7	53	2025-03-31	permanent	0	false	true
Exporting	7.1	60	7	53	2025-03-31	permanent	0	false	true
VR_MODE	1.0	60	2	58	2025-03-31	permanent	0	false	true

Figure 5: Features view

Switch to the **Details** tab to see further information about each feature. If the list of features is extensive, you can use the navigation tool to locate records, as described in [Page Navigation for Views in the License Server Manager](#). You can also search for a specific feature by entering its name in the **Search** field and then clicking the “magnifying glass” icon. (Provide the exact and complete feature name for the search string.)

Search

Search By

Feature

CLEAR

Figure 6: Search tool for features

When you click a feature name, the **Feature Details** page is displayed, containing detailed information about the feature, including the feature start date, the total count allocated to the server, the count currently being used, the number of reserved licenses within the used count, and any feature selectors and vendor string information defined for the feature.

This page also shows a **Served Info** section, listing the client devices that currently have the feature's counts checked out.

Feature Details: VR_MODE

Feature Name: VR_MODE

Version: 1.0

Start Date: 2023-03-10

Total Count: 10

Available: 8

Used Count: 2

Reserved Count: 10

Vendor String: India:Bangalore,group:Eng,group:Sup

Feature Expiry: 2025-03-31

BACK TO LIST

Served Device

Device ID	Device ID Type	Device Type	Device Alias	Total Count Served	Expiry
Controller1	STRING	UNKNOWN		0	2023-06-12
Controller0	STRING	UNKNOWN		0	2023-06-12
Controller2	STRING	UNKNOWN		2	2023-06-12

Figure 7: Feature Details page

Named License Pools View

About Named License Pools



Important - You can use either reservations or named license pools for license allocation. Reservations and named license pools cannot coexist alongside each other.



Note ■ In previous releases of the FlexNet Embedded license server, named license pools used to be referred to as “partitions”.

In a generic setup, each license server has a license pool which contains all the licenses available to its client devices. The license server distributes licenses from this license pool on a first-come-first-served basis to client devices requesting them. This license pool is also referred to as the *default license pool*.

However, in addition to the server's default license pool you can create *named license pools*, which divide your license estate into groups of licenses. By defining rules of access, you can allocate licenses to a group of client devices or users to help ensure that these entities have access to the features they need.

Thus, a license server serves licenses from its default license pool and any named license pools that you create. Each named license pool contains license counts for one or more features, which can be allocated to client devices or users. It is important to note that in a named license pool, licenses are not assigned to individual client devices or users. Instead, counts allocated to a named license pool can be accessed by a number of devices or users that meet certain criteria, such as, for example, be member of a particular business unit or have a certain hostid. Allocated license counts can be checked out by any device or user that fulfills the specified criteria.

As the license server administrator, you can choose to allocate the entire pool of licenses, a portion of the licenses, or none of the licenses. Any license that is not allocated to a named license pool remains in the default license pool and is available to any device on a first-come-first-served basis.

The Named License Pools Tab

The **Named License Pools** tab in the **Named License Pools** view displays the list of named license pools that have been defined on the license server as well as the default license pool.

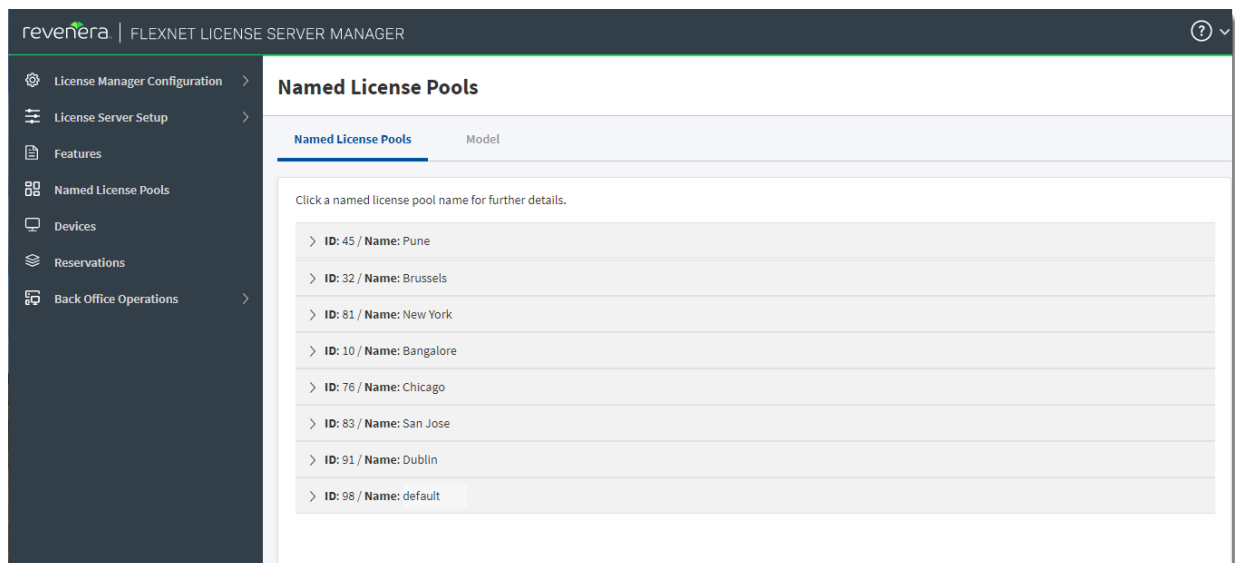


Figure 8: Named License Pools view

When you click a license pool name, the view expands to show details about the features that are currently included in the license pool.

Named License Pools

Model

Click a named license pool name for further details.

▼ ID: 45 / Name: Pune

Feature Name	Version	Expiration Date	Allocated	Used	Status
3D Rendering	3.2	2022-11-01	100	75	Normal
VR Mode	4.8	2023-02-03	85	63	Normal
Exporting	7.1	2023-06-30	150	100	Normal
Advanced Printing	1.2	2023-12-31	75	50	Normal

Figure 9: Details of named license pool

The Model Tab

The **Model** tab displays the model definition that is currently active on the license server. The model definition specifies the license pools and the rules of access that define how licenses are allocated to license pools (named or default).

Named License Pools

Model

A model definition consists of named license pools (partitions) and rules of access.
Browse for your model definition file and then click **Upload**.

Model Definition File

No file chosen

BROWSE

UPLOAD

Current Model Definition File

```
model "exampleModelDefinition" {
  // Total feature count of eb-feature-android-eval: 8
  // Default partition shall get 0 lic and 8 in below partitions
  partitions {
    partition "0800 - PUNE" {
      "eb-feature-android-eval" 2.0 3 // P1 license count = 3
    }
    partition "0800 - PUNE" {
      "eb-feature-android-eval" 2.0 2 // P1 license count = 2
    }
    partition "2200 - NECKARSULM" {
      "eb-feature-android-eval" 2.0 3 // P1 license count = 2
    }
    partition "4600 - BRUSSELS" {
      "eb-feature-android-eval" 2.0 2 // P1 license count = 1
    }
    partition "1400 - KASSEL" {
      "eb-feature-android-eval" 2.0 1 // P1 license count = 4
    }
  }
}
```

Figure 10: Model tab in the Named License Pools view

To change the model definition, browse for the model definition that you want to use by clicking **Browse** and then click **Upload**.

Devices View

The **Devices** view displays the client devices recognized by the license server as having been served licenses from the server's shared pool or from licenses reserved for the client. Each client is identified by its device ID, the ID type, and the device type—physical, virtual, or unknown. In addition, a device alias might be displayed if this has been set on the device. (A device alias is also sometimes referred to as a device name or host name. It is a human-readable alias—in contrast to the `hostid`—which can optionally be included in a capability request.)

Device ID	Device ID Type	Device Type	Device Alias
Controller0	STRING	PHYSICAL	
Controller1	STRING	PHYSICAL	
Controller2	STRING	PHYSICAL	
Controller3	STRING	PHYSICAL	
Controller4	STRING	PHYSICAL	
Controller6	STRING	PHYSICAL	

Total number of records: 7

Figure 11: Devices view

If the list of devices is extensive, you can use the navigation tool to locate records, as described in [Page Navigation for Views in the License Server Manager](#).

When you click the device ID for a specific client, the **Device Details** view opens, showing details about the client device and the list of features currently served to the client. (Click **Back** to exit the **Device Details** page.)

Device Details: 1234567890

Device ID: 1234567890
Device ID Type: STRING
Device Type: PHYSICAL
Device Alias: Device25
Device Expiry: 2022-11-16T19:12:35.774Z

[BACK TO LIST](#)

Feature Name	Version	Used	Expiry	Start Date	Vendor String
2DLine	1.0	1	Permanent	2022-11-08	hijjnjk
AdvancedFilter	1.3	4	Permanent	2024-02-25	jklaadtwd
Reporting	4.1	3	Permanent	2024-02-25	addqegg

Figure 12: Device Details page

Note that the **Device Expiry** field in the **Device Details** section shows the timestamp when all currently checked-out features will expire on the device. This timestamp is determined either by the borrow expiration for the checked-out concurrent features or the final expiration date (as defined in the back office) for checked-out metered features.

The **Expiry** field for a feature in the **Consumed Features** list shows its final expiration date as defined in the back office.

Reservations View

About Reservations

A factor that can affect the feature set included in the license server's responses is the use of *reservations*. A reservation is an optional mapping of a client device or user to a feature name, version, and count, which represents licenses to be reserved for that specific client devices or users in the enterprise. When a particular client sends the license server a capability request with no desired features, the license server response contains all features reserved for that client (and user, if the user has reservations). When a capability request contains desired features, the license server grants the client device these features based on reserved counts and available shared counts.

The reservations saved to the license server are ordered in a hierarchy, enabling more granularity in the managing them. For example, *reservation entries* are the actual feature reservations that you define for a *reservation*, which specifies the hostid for the specific client device or user to which the feature reservations apply. One or more reservations are assigned to a *reservation group*, which represents a more global entity to which the client devices and users identified by the reservations belong.

For more information about the reservation format and how the license server processes reservations, see [License Reservations](#) in the [More About License Server Functionality](#) FlexNet Embedded License Server Administration Guidechapter.



Important • You can use either reservations or named license pools. Reservations and named license pools cannot coexist alongside each other. For more information, see [Named License Pools vs. Reservations](#) in the FlexNet Embedded License Server Administration Guide. For general information about named license pools, see [Allocating Licenses Using Named License Pools](#) in the FlexNet Embedded License Server Administration Guide.

The Reservations View

The **Reservations** view enables you to view existing reservations, add reservations to a new reservation group, delete a reservation group, as well as import and export reservation definitions in a JSON format.

Status	Device ID	ID Type	Reservation Group	Feature Name	Version	Count
<input type="checkbox"/> ✗	Controller1	PHYSICAL	Group 45	3D Rendering	3.1	131
<input type="checkbox"/> ✓	Controller21	PHYSICAL	Group 98	Export to CSV	4.8	32
<input type="checkbox"/> ✓	Device18	PHYSICAL	Marketing Group	Rotation	6.1.3	65
<input type="checkbox"/> ✗	Unit42	PHYSICAL	Engineering Group	Animation	2022.01	198
<input type="checkbox"/> ✗	Controller89	PHYSICAL	Group 43	2D Wireframes	14.6	13
<input type="checkbox"/> ✓	Unit98	PHYSICAL	Sales Group	VR Mode	19.8	45

Total number of records: 7

Figure 13: Reservations view

The **Reservations** view displays the contents of the currently defined reservations. The notation in the **Status** column indicates whether enough licenses exist on the license server to satisfy the reservation. The green circle indicates that a reservation can be satisfied, and the red circle with an exclamation point indicates a reservation that cannot be satisfied.

If the list of reservations is extensive, you can use the navigation tool to locate records, as described in [Page Navigation for Views in the License Server Manager](#).

Clicking **Add** displays the **Add Reservation** page, where you add a single reservation entry to a new reservation group. You can add multiple reservation entries to the same group by using the same group name for each entry you create. You can also create multiple groups.



Important - If you were previously using partitions, you must delete the active model definition before you can manage reservations. See [Delete the Model Definition in the FlexNet Embedded License Server Administration Guide](#)

Also note that, in the **Device ID** field, you can specify either a client device hostid to define a device-based reservation or a user hostid to define a user-based reservation. Be sure specify the correct hostid type in the **ID Type** field.



Note - Currently the License Server Manager only adds reservations to a new reservation group. If you want to add or delete reservations in an existing group, you must delete that group and then re-create it using the **Add Reservation** page or the **Import** function to import a JSON file with the re-created group and its reservations.

Add Reservation

Specify settings for the new reservation.

Group Name

Device ID

ID Type

Feature Name

Version

Count

CANCEL **SAVE**

Figure 14: Add Reservation page

In a reservation entry, the version of the feature to be reserved must be a valid FlexNet Embedded version in numeric *a.b* format, and the reserved count must be a valid positive numeric value.

Note that the version of a feature reservation need not exactly match an actual feature's version: the reservation will succeed if the feature version is greater than or equal to the reserved version. For example, a reservation for version 1.0 of a feature can be satisfied by version 2.0 of that feature, but not the other way around. (Reservation versions follow normal feature-version syntax rules.)

Click **Add** to add the reservation entry to the pending reservation group, or click **Clear** to reset the current entry value without saving. Reservation entries are saved in a **Reservations (Pending Submission)** table below the edit fields. Click **Submit** to finalize the reservation list, or click **Cancel** to exit.

Clicking **Delete** in the **Reservations** view enables you to delete an existing reservation group.

Reservations

View or modify current device registrations.

IMPORT EXPORT **DELETE** ADD

Status	Device ID	ID Type	Reservation Group	Feature Name	Version	Count
<input checked="" type="checkbox"/>	Controller1	PHYSICAL	Group 45	3D Rendering	3.1	131
<input type="checkbox"/>	Controller21	PHYSICAL	Group 98	Export to CSV	4.8	32
<input type="checkbox"/>	Device18	PHYSICAL	Marketing Group	Rotation	6.1.3	65
<input type="checkbox"/>	Unit42	PHYSICAL	Engineering Group	Animation	2022.01	198
<input type="checkbox"/>	Controller89	PHYSICAL	Group 43	2D Wireframes	14.6	13
<input type="checkbox"/>	Unit98	PHYSICAL	Sales Group	VR Mode	19.8	45

Total number of records: 7

< 1 2 3 4 5 ... 56 >

Figure 15: Deleting reservation groups

To delete a reservation group, select the check box to the left of the group, and click **Delete** to add it to the list of pending deletions. After you have selected the groups, click **Submit** to delete them from the license server.

You can also click **Import** to import a JSON file containing new groups and their reservation entries, or click **Export** to save the current reservations in a JSON file format.

Offline Server Updates View

The **Offline Server Updates** view (available from the **Back Office Operations** menu) enables you to update the served license pool using offline operations instead of direct communication to a back-office server. In the upper half of the view, you can do either:

- Save a capability request into a local binary file by clicking **Download** in the **Download Capability/Confirmation Request...** section. This request is used to poll for any license updates for the license server.
- Enter an activation ID and count in the **Generate Offline Request** section. When you click **Download**, the activation request is saved as a binary file. This request is used to obtain license rights for the license server through a specific activation ID that the software producer has provided you.

Once the request is downloaded as a binary file, you then communicate the binary request to the back-office server through an offline means.

When you have received a binary response file from the back office, browse for the file by clicking **Choose File** in the lower half of the view and then click **Upload**. The license server then processes the response, which updates the contents of the server's trusted storage.

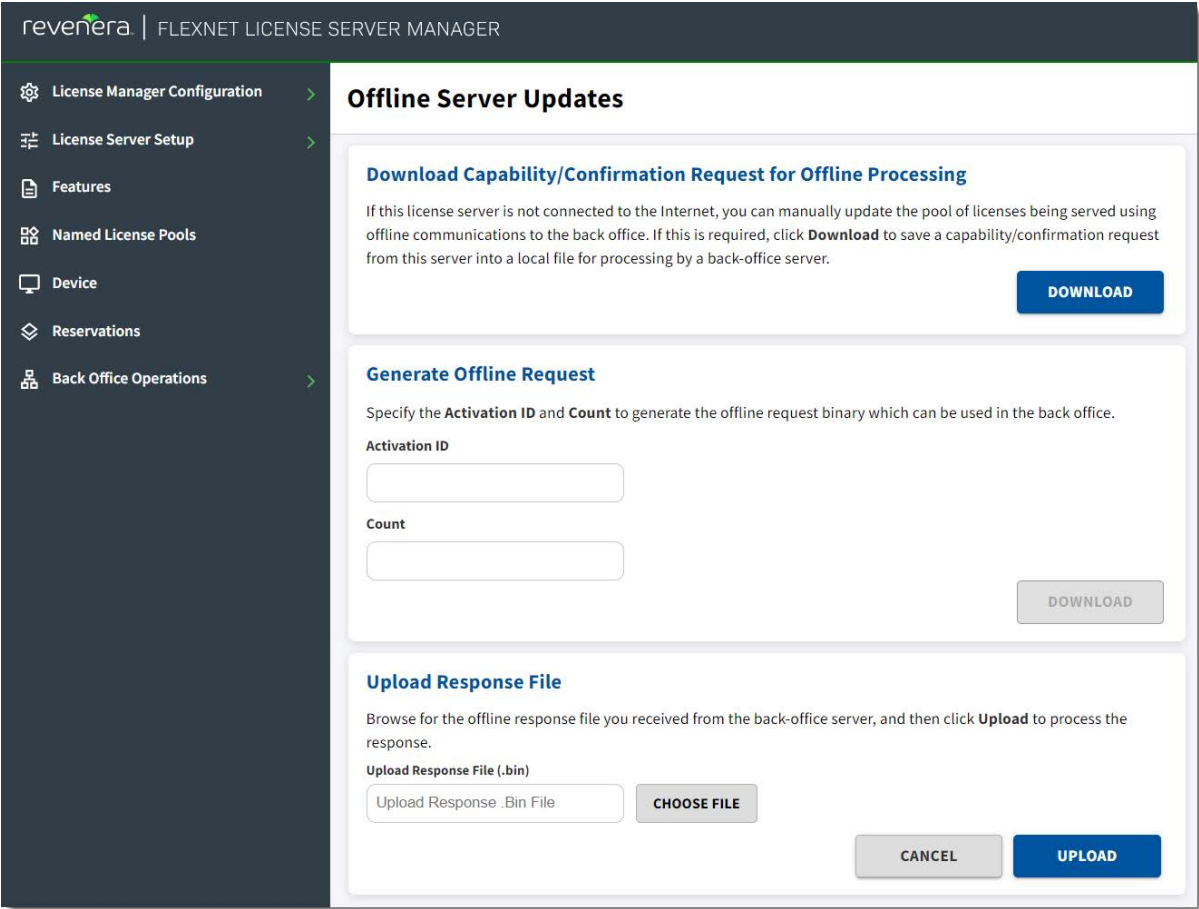


Figure 16: Offline Server Updates view for performing offline capability exchanges with the back office

Client Key Operations View

The **Client Key Operations** view (available from the **Back Office Operations** menu) provides a means of uploading a file containing a client-side RSA public key (2048-bit DER-encoded) in octet-stream format to the license server. The producer will provide details about obtaining and uploading this key should such a key be required. License-server administrator credentials are required to use this option.

To upload the file, click **Choose File** to browse for and select the appropriate file, and then click **Upload**.

Client Key Operations

Browse for the client public key (2048-bit DER RSA) file, and then click **Upload** to post the file contents.

Upload Client Public Key File

No file Chosen **CHOOSE FILE**

CANCEL **UPLOAD**

Figure 17: Client Key Operations view for uploading a public key from the client

