Install and Administer the License Server Service on Linux

Updated: April 20, 2023

These instructions describe how to install and configure the L3Harris License Server service for use with L3Harris Geospatial Solutions, Inc. products.

See the following:

System Requirements

Minimum hardware requirements:

- Disk: 500 MB
- RAM: 4 GB
- CPU: 2 GHz - 2 Cores

The License Server requires an Intel/AMD 64-bit processor and a Linux distribution. The License Server is developed and tested against CentOS 7. The software has also been successfully used in other distributions, such as Ubuntu 16, 18, and 21.10, Red Hat Enterprise Linux (RHEL) 7, Red Hat (RHEL) 8.4, and Debian 11. For a complete list of the platforms MongoDB Community Server supports, see https://www.mongodb.com/docs/v5.0/administration/production-notes/.

It is recommended that the machine be dedicated to the License Server. Reducing the amount of additional software installed on the machine (particularly server software) will help ensure there are no version conflicts of dependency packages. In particular, other applications that use Node.js or MongoDB Community Server might introduce version incompatibilities that could be difficult to troubleshoot, and could lead to system instability. The License Server does not require a particularly powerful machine to run; however, keeping the software running in relative isolation will minimize the chances of incompatibilities.

The License Server must be installed on a machine that is network-accessible to the client machines that will perform licensing requests. The License Server communicates using a secure and/or non-secure port. These ports may need to be appropriately configured on firewalls or other network devices to allow the required connectivity.

The License Server uses MongoDB Community Server 5.0, which requires a processor with the AVX instruction set. If you are attempting to install on a virtual machine on a processor that supports AVX instructions, you may need to update the virtual machine configuration to enable them. See the MongoDB Production Notes, https://www.mongodb.com/docs/v5.0/administration/production-notes/, for additional information.

License Administrator User Interface Requirements

The following are required to use the License Administrator user interface to manage your License Server licenses:

- Debian (Ubuntu 18.04 and above or equivalent) with the `libwebkit2gtk-4.0-37` and `libgtk-3-0` packages installed.
- Arch with the `webkit2gtk` and `gtk3` packages installed.
- Fedora (latest 2 versions) with the `webkit2gtk` and `gtk3` packages installed.

Alternately, a command line `licensing` command can also be used to manage your License Server licenses if a desktop user interface is not available for your server. For details, see the Licensing Utility section.

Root or Sudo Privileges

You need root or sudo privileges to perform the steps in this document.

Firewall Configuration

The License Server is configured to listen to ports 4080 (HTTP) and 40443 (HTTPS) concurrently by default. If a firewall is deployed on the License Server, it will be necessary to configure the firewall to allow external listening connections by the License Server computer on TCP ports 4080 and 40443.

If needed, consult your local system or network administrator for assistance in configuring your server's firewall.

Correct System Time and Date

To allow proper usage monitoring and logging, the system time and date of the License Server computer should be configured to accurately reflect the current time and date.

Install the License Server Service

The License Server requires MongoDB Community Server on the machine. The installer will perform a check to determine if it is already installed. If it is not, you will be prompted to allow installing MongoDB before proceeding to License Server installation. So that MongoDB can be installed for you, you will need to have a package manager on the machine, such as apt-get or yum. If a package manager is not available, MongoDB will need to be installed manually.

To install the L3Harris Geospatial License Server:

1. Uncompress the `setup-license_server`*`xx`*`-linux.gz` archive file that was downloaded to your computer, then unpack the file:

   ```
   gunzip setup-license_serverxx-linux.tgz
   tar -xf setup-license_serverxx-linux.tar
   ```

2. Change to the directory that has the installer script:

   ```
   cd license_serverxx
   ```

3. Start the installer:

   ```
   ./install_linux.sh
   ```

4. If prompted, allow installing MongoDB Community Server.
5. At the "Enter the name of a user account to run the service" prompt, enter one of the following:
   - `daemon`, a generic user ID available in most Linux distributions that can be used to run background services.
   - A specific user ID you have created for the purpose of running this license server.
   - Your own account name.
6. When installation is complete, activate the license by entering **Yes** at the prompt to open the License Administrator.

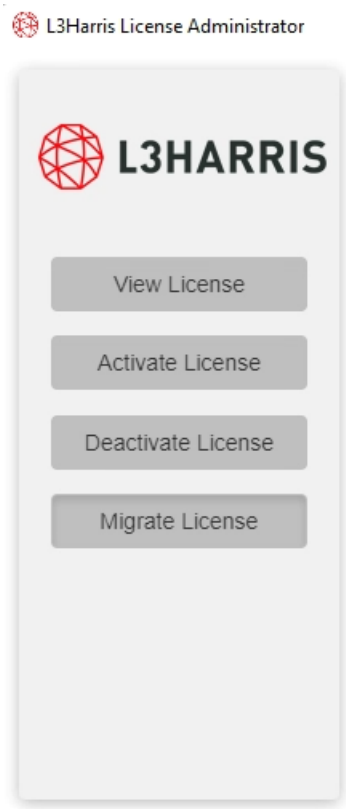
   Optionally, if you have a `license.dat` file, you can skip the activation process and place the file in the *`INSTALL_DIR`*`/license_server/license` directory.

You can also activate licenses from the command line using the Licensing utility described in this document.

License Administrator

You will be prompted to open the License Administrator after installation is complete. To start the License Administrator at other times (e.g., to deactivate a license), run the `license_administrator.sh` file located in the *`INSTALL_DIR`*`/license_server/bin` directory.

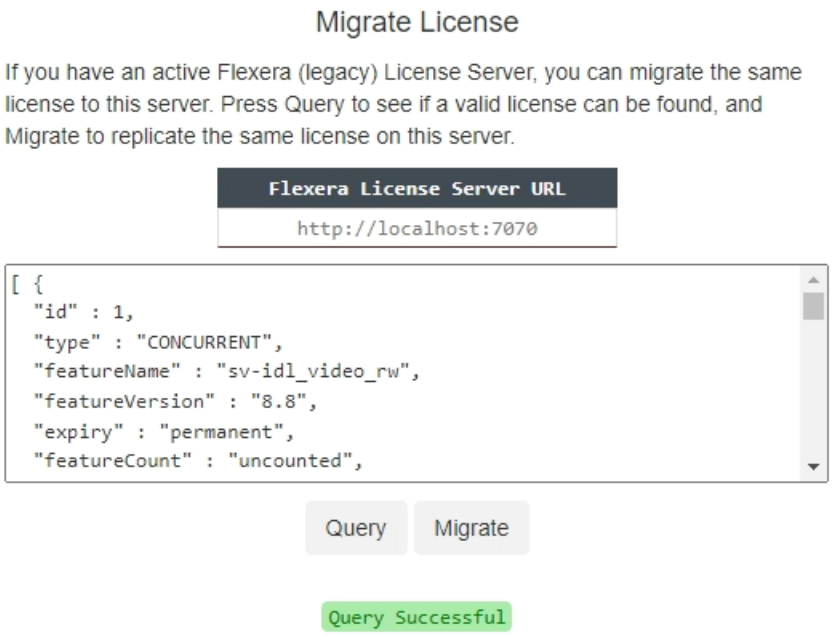
Use the License Administrator to activate, deactivate, and view ENVI and IDL licenses on the License Server.



Migrate Licenses

This version of the License Server uses a new licensing engine. If you were previously hosting licenses on the legacy licensing engine, you can migrate the licenses from the old licensing engine to the new one using the following:

1. When the License Administrator appears, click the **Migrate License** button.
2. The License Administrator will show the URL for the legacy License Server.



3. Click the **Query** button to view the license features on the legacy License Server. Ensure that you will be migrating what you need to the new licensing engine.
4. Click **Migrate**. When the migration is complete, the message **Migration Successful** appears.
5. Click the **View License** button to see the migrated licenses.

Activate a License

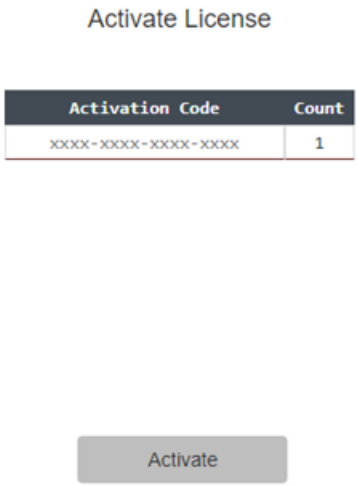
To activate licenses, click the **Activate License** button.

1. Enter (or paste) the activation code that was provided to you in **Activation Code** column.
2. By default, a license is activated with a count of 1. You can optionally specify a different count (if available for that license) in the **Count** column.

   You cannot change the count after the license is added. To change the count, you will

need to deactivate the code, then re-add it with the new count.

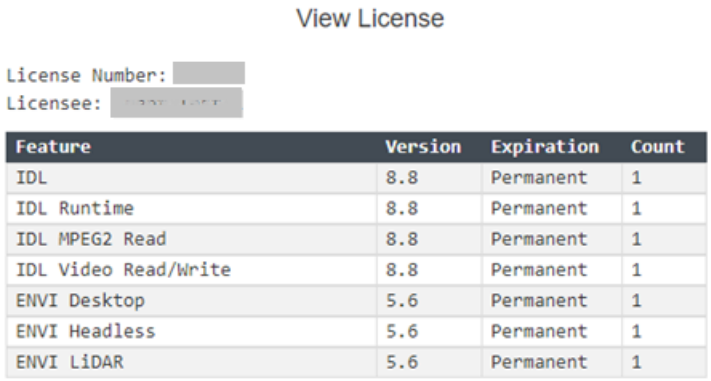
3. Click the **Activate** button below the table.



The License Administrator table refreshes to show the activated license.

View Licenses

You can view all activated licenses for the License Server when you click the **View License** button. Details for each license include the license feature, version, expiration date, and license count.



Feature	Version	Expiration	Count
IDL	8.8	Permanent	1
IDL Runtime	8.8	Permanent	1
IDL MPEG2 Read	8.8	Permanent	1
IDL Video Read/Write	8.8	Permanent	1
ENVI Desktop	5.6	Permanent	1
ENVI Headless	5.6	Permanent	1
ENVI LiDAR	5.6	Permanent	1

Deactivate Licenses

To deactivate licenses, click the **Deactivate License** button.

- To deactivate all licenses, select the check box at the top of the table, then click the **Deactivate** button below the table.
- To deactivate a specific license, select the check box next to the activation code, then click the **Deactivate** button.

Connect a Client to the License Server

Clients can connect to the License Server using the License Administrator tool that is installed with their ENVI and IDL software.

To open the License Administrator tool:

- **Windows:** From the Start menu, select the **License Administrator** under the shortcut group for the product installation. Administrator privileges are required.
- **Linux:** From a terminal window, launch the `harrislicense` command from the *`INSTALL_DIR`*`/idl`*`xx`*`/bin/` directory for IDL installations, or from the *`INSTALL_DIR`*`/envi`*`xx`*`/idl`*`xx`*`/bin/` directory for ENVI installations. Sudo or root permissions are required.
- **Mac:** From a Finder window, double-click the `LicenseAdminstrator.app` icon located under the *`INSTALL_DIR`*`/idl`*`xx`* directory for IDL installations, or the *`INSTALL_DIR`*`/envi`*`xx`*`/idl`*`xx`* directory for ENVI installations. Administrator privileges are required.

This version of the License Server uses a new licensing engine. If you are hosting licenses that were migrated from the legacy licensing engine to the new licensing engine, clients will need to confirm reconnecting to the localhost.

To connect a client to the License Server:

1. Click the **Use License Server** button.
2. The default port number is 4080. To use a secure port (HTTPS), enable the **Secure** check box. The port number will change to 40443, the default for a secure port.
3. Enter the name or IP address of the server.
4. Click the **Connect** button.
5. Click **Close** to close the dialog.

Licensing Utility

Use the `licensing` command-line utility to do the following from the command line:

- Activate one or more licenses (`activate`)
- Deactivate one or more licenses (`deactivate`)
- Migrate licenses from the legacy licensing engine to the new licensing engine (`migrate`)
- Print the binding keys for the license (`get bindings`)
- Print the license information (`show license`)

To use the Licensing utility, open a terminal window and change to the *`INSTALL_DIR`*`/license_server/bin` directory.

Activate Licenses

To activate a license (requires Internet access):

```
./licensing activate <activation_code>
```

where *`<activation code>`* is in the format 0000-0000-0000-0000. Submitting the activation code contacts the licensing portal with machine binding information. The portal returns a license, which will then be installed.

- You can call `activate` multiple times to add more codes to the existing license, without needing to deactivate.
- By default, a license is activated with a count of 1. You can optionally specify a different count by using a slash `/`. For example:

  ```
  ./licensing activate <activation_code>/2
  ```

- You cannot change the count after the license is added (the same code cannot be activated multiple times). To change the count, you must deactivate the code, then re-add it with the new count.

- You can also enter multiple activation codes of varying counts. For example:

  ```
  ./licensing activate <activation_code1> <activation_code2>/5
  ```

  where *<activation_code1>* will be activated with the default count of 1 and *<activation_code2>* will be activated with a count of 5.

Deactivate Licenses

Deactivate licenses before uninstalling the License Server from the machine. To deactivate a license (requires Internet access):

- To deactivate all licenses:

  ```
  ./licensing deactivate
  ```

- To deactivate a specific license:

  ```
  ./licensing deactivate <activation_code>
  ```

  where *<activation_code>* is in the format 0000-0000-0000-0000.

Migrate Licenses

This version of the License Server uses a new licensing engine. If you were previously hosting licenses on the legacy licensing engine, you can migrate them to the new licensing engine using the following:

To migrate licenses using the default localhost URL:

```
./licensing migrate
```

The following option can be used to specify a different localhost:

```
-urlURL
```

Print Binding Keys

To print the machine's key binding to the screen:

```
./licensing get bindings
```

Print License Details

To print license details to the screen:

```
./licensing show license
```

Other Options with the License Utility

The following options can also be used with the `licensing` command-line utility:

- To use a proxy server:

  `-proxy_server`: The proxy server host name or IP address.

  `-proxy_port`: The proxy server TCP port.

  `-proxy_username`: The proxy server username.

  `-proxy_password`: The proxy server password.

- The Licensing utility automatically detects the licensing folder in the folder hierarchy, but if the folder is in a different location, override with the following:

  `-path`: The license file path.

- The following options are available for logging:

  `-log`: To specify the name of the log file.

  `-loglevel`: To specify the level of logging information. The default level is `INFO`, but for troubleshooting purposes, you may be instructed by L3Harris Geospatial Solutions Technical Support to change this setting.

  `-verbose`: To enable more verbose logging.

- To specify a file to direct all output to:

  `-output`

  If not specified, output is written to `sdtout`.

License Server Configuration

Default configuration settings for the License Server are set in the *`INSTALL_DIR`*`/license_server/config/production.json` file.

You will need to restart the License Server service after you edit the License Server configuration file.

```
{
  "http": {
    "port": 4080
  },
  "https": {
    "port": 40443,
    "key": "certs/key.pem",
    "cert": "certs/cert.pem"
```

```
  },
  "license": {
    "path": "license"
  },
  "logging": {
    "daysToKeep": 30,
    "level": "info",
    "path": "logs"
    "allowDownloads": true
  },
  "dashboard": {
    "show": true
  }
}
```

http

The port the License Server listens to for HTTP. The default is 4080. HTTP and HTTPS ports are supported concurrently; however, if you will not use both ports, you can remove the unused one from the configuration file.

https

The port the License Server listens to for HTTPS. The default is 40443. HTTPS allows the License Server to encrypt all communications to and from clients accessing the server. It is recommended for security best practices for all deployed systems. HTTP and HTTPS ports are supported concurrently; however, if you will not use both ports, you can remove the unused one from the configuration file.

The key and certificate should be generated and signed by your organization, but you can use a self-signed certificate. Default self-signed `key.pem` and `cert.pem` certificates are located under the `certs` folder in the *`INSTALL_DIR`*. You can also replace the default certificates provided by L3Harris Geospatial Solutions with ones purchased from and signed by a Certificate Authority.

Note: Web browsers and other command-line clients will warn about self-signed certificates, and you will have to bypass their security features to use a self-signed certificate.

If you are using certificates that were purchased from and signed by a Certificate Authority, be sure to copy the `key.pem` and `cert.pem` files to the `certs` folder before you restart the License Server service.

license

The relative or absolute path of the `license` folder that contains the License Server's `license.dat` file.

logging

License server log configuration settings include the following:

- How many `daysToKeep` log files before purging them.
- The `level` of data to include in the log. The default method is `info`. Change the logging level only if you are instructed to do so by L3Harris Geospatial Solutions Technical Support. The logging levels are:
  - `fatal`: Logs when the application encountered an event or entered a state in which one of the essential functions is no longer working.
  - `error`: Logs issues that prevent one or more functions in the application from working properly.
  - `warn`: Logs when something unexpected occurred in the application.
  - `info`: Logs information about application activity that occurs.
  - `debug`: Logs information that may be needed for diagnosing issues and troubleshooting. It is less detailed than `trace` logging.
  - `trace`: A verbose log of what is occurring in the application and the 3rd-party applications it uses.
- The `path` where the logs will be stored.
- Set `allowDownloads` to **`true`** to enable viewing and downloading the log files from the Dashboard. If set to **`false`**, viewing and downloading log files from the Dashboard will be disabled.

If setting a path, ensure that the user who is running the License Server has write permissions for the directory.

The `license_server.log` file is located in *`INSTALL_DIR`*`/license_server/logs`.

dashboard

The `show` setting enables or disables showing the Administrator Dashboard. If set to `false`, the License Server's client users will see an 'HTTP 404 Not Found' message when they select **View Licenses > Show Dashboard** in the License Administrator.

Start/Stop/Restart the Service

Open a terminal window and use the following commands to start or stop the service:

```
sudo INSTALL_DIR/node/bin/node INSTALL_DIR/service start

sudo INSTALL_DIR/node/bin/node INSTALL_DIR/service stop

sudo INSTALL_DIR/node/bin/node INSTALL_DIR/service restart
```

Uninstall the License Server Service

You can use a script to uninstall the License Server, or you can uninstall it manually.

To use the uninstall script:

An uninstall script is located in *INSTALL_DIR*`/license_server/scripts/uninstall_linux.sh`. The script deactivates licenses on the server, stops the server, and removes the License Server.

To run the script, enter the following at the command prompt:

```
sudo <install_location>/scripts/uninstall_linux.sh
```

To manually uninstall:

1. Navigate to the License Server installation directory (*INSTALL_DIR*`/license_server`).
2. If the license was activated with a code, deactivate the license (skip this step if using a `license.dat` file):

   ```
   sudo bin/licensing deactivate
   ```

3. Stop the service:

   ```
   sudo ./service.js remove
   ```

4. Remove the License Server:

   ```
   sudo rm -rf install_location
   ```

Contact Us

If you need assistance, visit our website to find worldwide contact information for technical support.