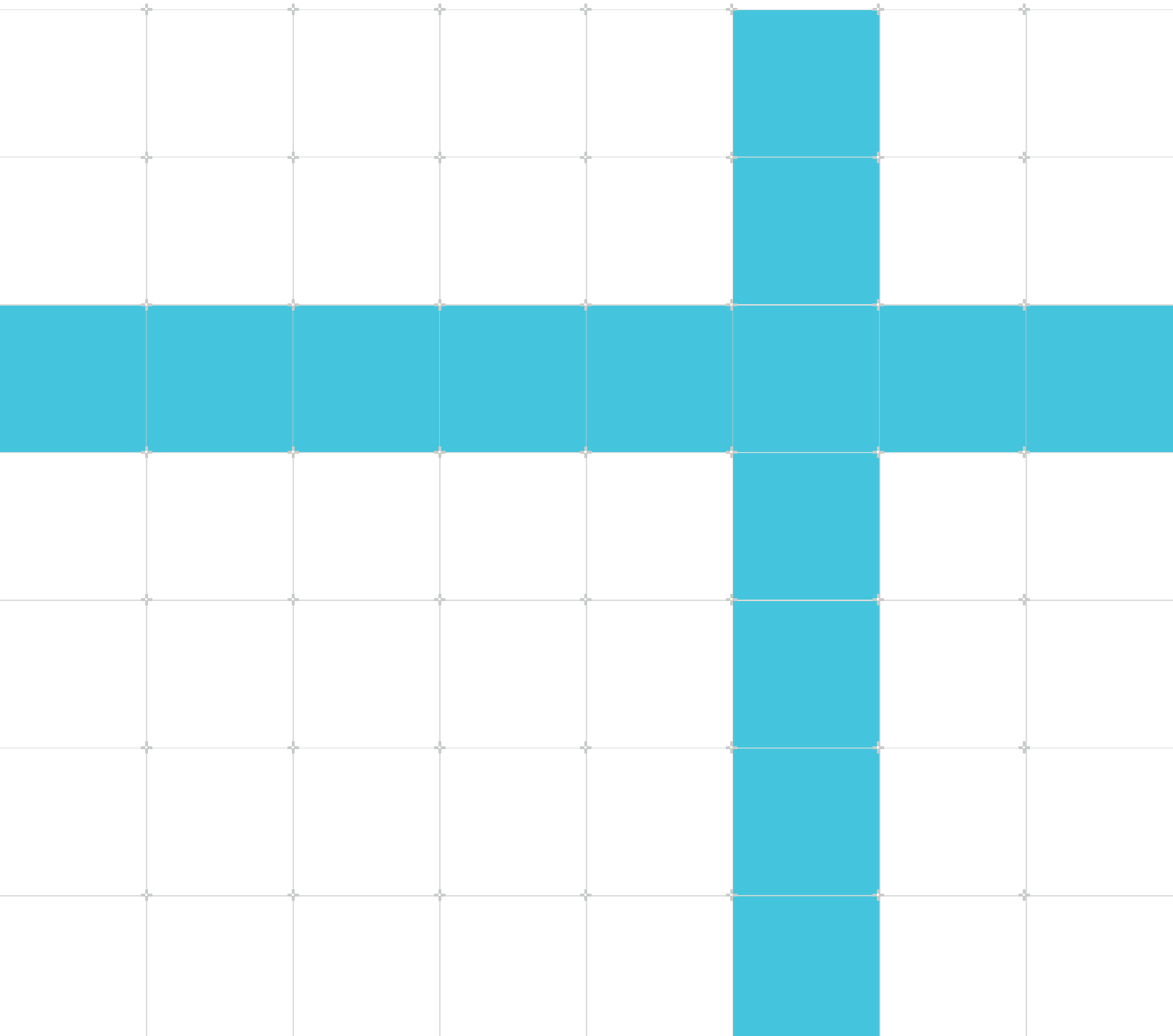
User-based Licensing

Version 1.2024500

Administration Guide

Issue 05
107573_1.2024500_05_en



User-based Licensing Administration Guide

This document (107573_1.2024500_05_en) was issued on 2025-07-31. There might be a later issue at https://developer.arm.com/documentation/107573

The product version is 1.2024500.

See also: Proprietary notice | Product and document information | Useful resources

Start reading

If you prefer, you can skip to the start of the content.

Intended audience

This document is intended for administrators responsible for providing user-based licensing licenses to Arm development tool users.

Inclusive language commitment

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We believe that this document contains no offensive language. To report offensive language in this document, email terms@arm.com.

Feedback

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Contents

1. Getting started with user-based licensing

User-based licensing (UBL) is a new licensing model from Arm, replacing previous license solutions. UBL provides benefits to both the management of the licenses within your organization, as well as usability improvements for the end-users of UBL managed tools. UBL provides a user with unlimited access to Arm development tools enabled by that license across multiple devices.


Note

The user-based licensing license server software is different from, and incompatible with, other license models used by Arm development tools, including:

- FlexNet Publisher node-locked and floating
- Keil® node-locked and floating
- Allinea node-locked and floating

Arm have providing guidance on using the user-based licensing licensing model with various use-cases in User-based Licensing Migration Guide.

Obtaining licenses

Before you can allocate licenses to users, you must have an account on the Arm user-based licensing portal. The account must have one or more products with associated licenses. If your account does not have products, you must add a product.

Types of user-based licensing deployment

UBL allows you to deploy licenses in the following ways:

- Arm Cloud License Server (CLS)

  The administrator obtains a license activation code for a single user from the Arm portal. The administrator makes the activation code available to the user, for example by email.

  A user obtains a license by activating a product using the activation code as the license source. The license allows the user to access to all tools available in the product on any device. The user keeps the license until the administrator revokes the activation code on the Arm portal.

  For more information about CLS administration, see Activation code administration.

- Local License Server (LLS)

  A license server is installed and maintained within your organization. The administrator registers the license server and populates the server with products from their account on the Arm portal. The administrator selects the number of licenses for each product that are available on the license server.

  A user obtains a license by activating a product using the license server URL as the license source. The license allows the user to access all tools available in the product on any device. Once every 24 hours, when the user starts an Arm development tool, the license is renewed.

If the user does not renew a license within 7 days, the license becomes available on the license server for other users.

For more information about LLS administration, see Installing and populating the license server and License server administration.

Which deployment is right for you?

Review the following features of LLS and CLS to decide which deployment is suitable:

- Features of CLS:
  - No internal infrastructure requirements
  - The administrator must manage each activation code
  - Requires Internet access to activate and to refresh licenses
- Features of LLS:
  - Requires internal infrastructure to manage and maintain a local license server
  - Easy to manage many licenses on a single server
  - Allows deployment of licenses to a large developer population
  - Generates local usage diagnostics

Arm recommends LLS for licensing a large number of developers and CLS for licensing a few developers. If your users are spread across multiple sites or networks, you can use both types of deployment.

Activate products in the cloud

If you are running Arm development tools in the cloud:

- For a small number of tools in cloud instances that have access to your company intranet, you can activate licenses using LLS.
- For a small number of tools in cloud instances that have access to the internet, you can activate licenses using CLS.
- For large number of cloud instances using Arm development tools, or for cloud instances that do not have access to the internet or your company intranet, you can use one of the following methods:
  - Create a license transfer file on a device using LLS or CLS. Then activate the license for Arm development tools on cloud instances using the transfer file. For more details see Proxy activation.
  - Activate the license on a device using LLS or CLS. Then do one of the following:
    - Replace the license cache in each cloud instance with the activated license cache.
    - Make the license cache available, for example on a network drive. In each cloud instance, set the ARMLM_CACHED_LICENSES_LOCATION environment variable to the location of the license cache. For more details see Change the local license cache directory.

For both methods, if the process is not repeated before the license expires, the license is deactivated. Usually the license cache expires after 7 days, but for licenses created using proxy activation, this expiry time can be longer.

User data transfer

When a user activates a product or renews a license, a request is sent to the activation service when using an activation code or the license server (local or cloud-based). The only personal data in this request is the username.

1.1 User-based licensing terminology for administrators

Describes the terms used in Arm user-based licensing documentation, including administrator-specific terms.

The following terms are used in user-based licensing documentation:

Activation

The act of fulfilling an entitlement for a specific user. When an Arm product is activated in an Arm development tool, a license to use the tool is activated.

Activation code

Sequence of letters and digits, formatted as a Universally Unique Identifier (UUI), which represents a seat of a product entitlement for a specific end-user or service account.


Note

Products can also be activated using a local license server.

Arm Cloud License Server

Used to provide activation codes for your users.

Arm license server

The Arm-hosted server contacted when a product activation code is activated or license is renewed.

Arm user-based licensing portal

A portal for managing your Arm products and licenses. Activation codes are created and licenses are allocated to license servers in the portal.

Development tool

An Arm software tool that requires a user license.

Cached license

The license information stored in the local license cache. This license is valid for 7 days but is extended when your Arm product successfully connects to the local license server or the Arm license server.

Device

Generic term for all computing devices capable of running Arm development tools. A device can be a workstation, a virtual machine, a server, or a mobile device such as a phone or a tablet.

End-user

A person interacting with the Arm development tool.

Floating

A license that is held centrally and handed out on-demand, checked out, to clients. The license is checked out for the duration that a license-managed feature is in use, and ends with the license being checked back in. A floating license is locked to a license server that serves the license to clients. This model is referred to as a concurrent licensing model, because it enforces maximum concurrent use. Unless the license is borrowed or cached, the client must maintain a network connection with the license server for the entire duration that the license-managed feature is in use.

License

Output of an activation, representing an entitlement for a user. A license is also referred to as a certificate. A license is typically stored on the local file system of the device used when activating your Arm development tool.

License server

A local server used to activate products and renew licenses.


Note

You can also activate a product with an activation code.

Node-locked

A license that is locked to the device where the license-managed development tool runs. This model is referred to as a device-based licensing model.

Order

An order gives entitlement to Arm products and licenses. Orders have a unique number, start date and end date. For details of what happens when an order expires, see Order expiry.

Overdraft

Some product have an overdraft that allows you to temporarily exceed the number of licenses you own.

Product

An Arm product entitlement defining the Arm development tools a user is entitled to use. A product allows the user to use one or many Arm development tools.

Proxy activation

A method of product activation that creates a license file to copy and import onto another device. This is useful when: * A device does not meet the network requirements * Using multiple devices in an automated and parallelised workflow, such as Continuous Integration (CI)

Seat

An abstract term for counting the number of licenses that are available or purchased. Under the user-based licensing model, there is exactly one seat for each user, regardless of the number of devices on which your Arm development tool is installed or run.

Serial number

A number that is used on the Arm user-based licensing portal to add a new product with licenses or increase the number of licenses in an existing product. Serial numbers have the following format:

```
xxxxx-xxxxx-xxxxx-xxxxx-xxxxx
```

A serial number is not required if your product has been added directly into your account by Arm.

Service account

The operating system account that coordinates the automated use of development tools.

User

A generic term used to identify the entity interacting with the Arm development tool; can be an end-user or service account.

Username

The name identifying an account on an operating system. The username is associated with the operating system processes running the Arm development tool.

2. Product administration

Before you can allocate licenses to users, you must have a product with licenses in your Arm user-based licensing portal account.

2.1 Add a product and licenses

You can add products to your account on the Arm user-based licensing portal using a serial number. You can also add licenses to existing products in the same way.

About this task

When you buy products from Arm or an Arm distributor, you receive your product order in one of the following ways:

- You can receive a serial code. This topic provides details of how you use the serial code to add your product order to your account.

  For an overview of how to add a product using a serial code, watch the Accessing the Arm License Portal video tutorial (1:02 minutes).
- Arm adds your product orders directly into your account. In this case, you do not need to follow the procedure in this topic.

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. If you have multiple accounts on the user-based licensing portal, click on the required account ID.

   
   Note

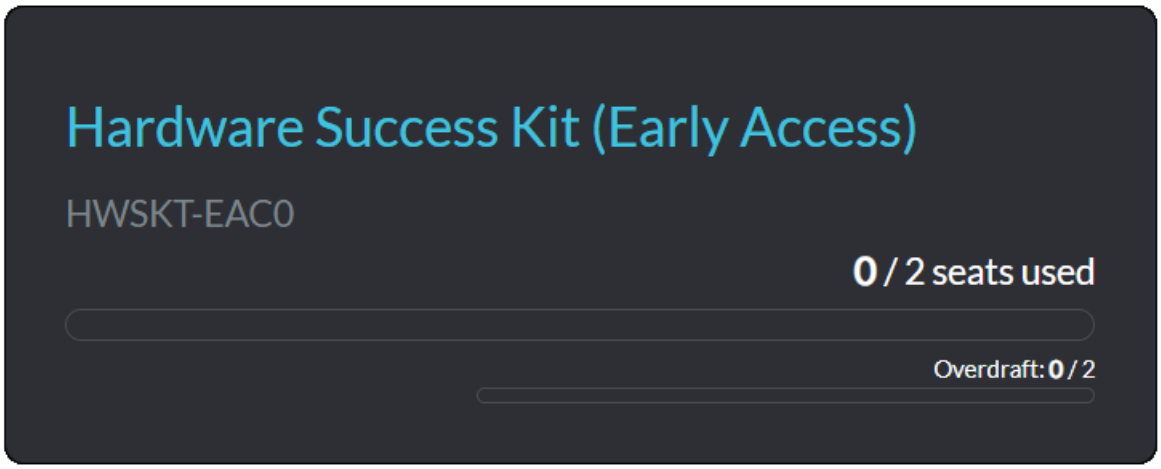
   As products can be added to any of your accounts, make sure you select the correct account ID.
3. On the **Products** tab, click **Add a product**.
4. In the resultant dialog box, enter your serial number and click **Redeem**.

Results

A banner states "Successfully redeemed serial number". The added product is displayed in the product code tiles on the **Products** tab:

- If you have not previously added licenses for the product code, a new product tile is created.
- If you have existing licenses for the product code, the licenses are added to the seats available in the product tile.

Figure 2-1: Example product tile



Related information

List products and license seats on page 11
List orders on page 12

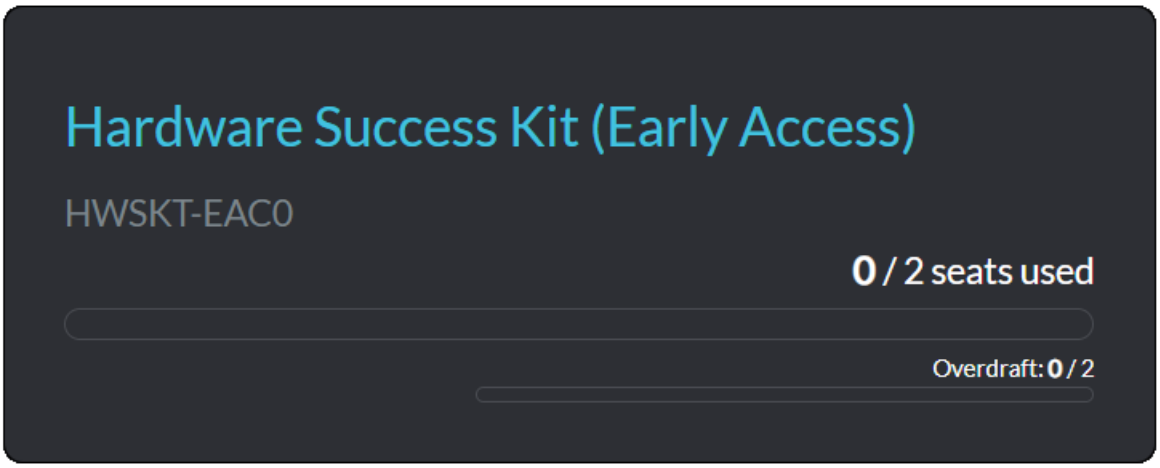
2.2 List products and license seats

List your products with the active and available license seats.

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. Select the **Products** tab.
3. A tile is displayed for each product you own. For example:

   Figure 2-2: Example product tile



A tile shows:

- The product name and code
- The number of license seats used and the number of license seats available
- If available, the number of overdraft seats used and the number of overdraft seats available

4. For details of the license usage and orders associated with a product, click on the product tile.

Figure 2-3: Example product details

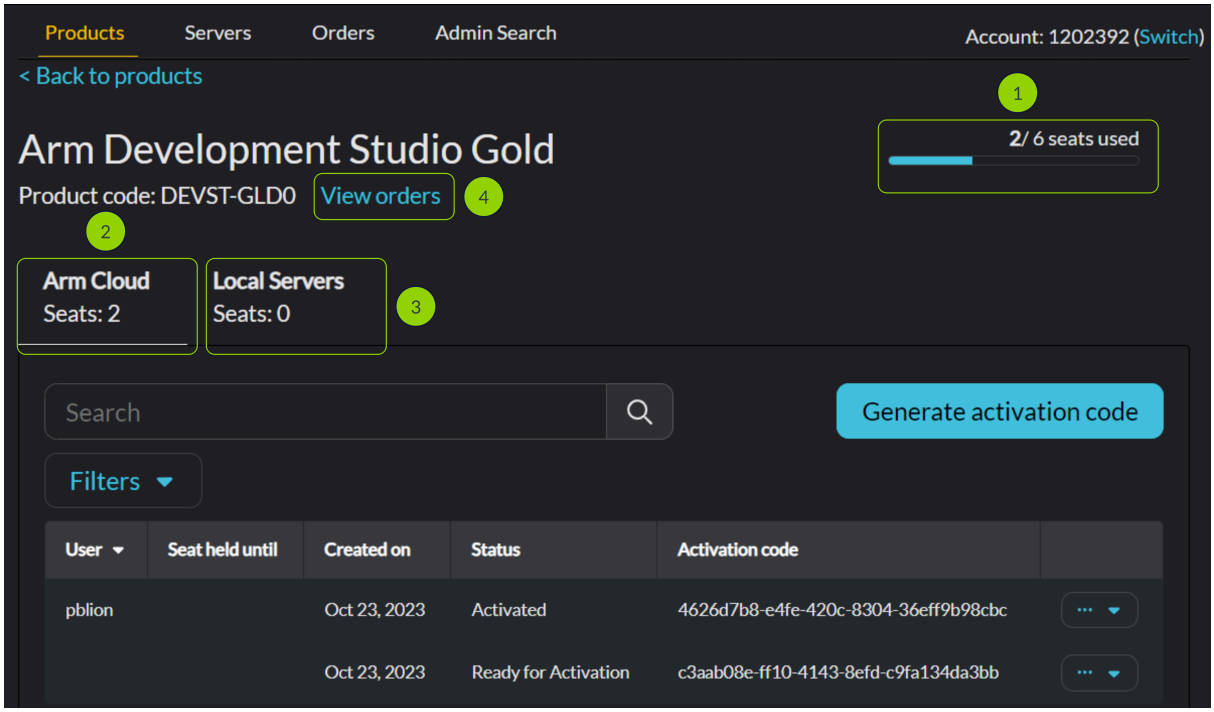


Table 2-1: Product details

1	The number of licenses seats in use and maximum number of license seats for this product.
2	The number of activation code license seats used. Click the **Arm Cloud** tab to show details of the activation code license seats in use.
3	The number of license seats used on license servers. Click the **Local servers** tab to show details of the license servers using licenses for this product. The licenses allocated to each license server are shown as **Seats allocated**.
4	Clicking **View orders** shows the orders associated with the product in the **Orders** tab. The list of orders are filtered by this product.

2.3 List orders

List the orders that provided your product licenses.

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. Select the **Orders** tab.
3. The orders are listed with the following details:
   - **Order ID**
   - **Product** name
   - **Product code**
   - **Start date**
   - **Expiry date**
   - **Status** (Valid, Expired, or Not started)
   - **Seats**
   - **Overdraft**
   - **Used Overdraft**
4. You can filter the orders by clicking **Filters** and selecting a **Product** or **Status** to filter by. The filter item is displayed as a tile next to the **Filters** button.
   You can add multiple filters, for example to list orders with statuses of **Expired** and **Not started**.

   You can remove a filter by clicking on the **X** in the filter tile or remove all filters by clicking **Clear filters**.

2.4 Order expiry

All orders have an expiry date. After the expiry date, the products and licenses in an order are no longer available. This has the following effects:

- For Cloud License Server (CLS) deployments, activation code licenses associated with the expired order are moved to orders that have available license seats. Licenses are moved first to orders with the most recent expiry date.

  If there are not enough available license seats in a product after the order expires, your users cannot activate new products or renew cached licenses for the product.
- For Local License Server (LLS) deployments, the number of licenses available for the product on the license server is reduced. This reduced number can mean that some users are unable to activate new products or renew cached licenses for the product.

To check how many licenses are valid and how many licenses have expired, use the following license server command:

```
armlm_list_products --show-expired
```

In the portal, if the number of licenses available for a product exceeds the number of activation codes or licenses allocated to license servers:

- The product tile has a warning that there are more activation codes or allocated seats than valid seats.
- The product details page gives a warning that includes the number of over-allocated licenses for the product. For activation codes, if you have enough overdraft license seats available for the product, you can use these by clicking on **Use <number> overdraft seats**, where `<number>` is the number of over-allocated licenses.
- You are unable to create new activation codes or allocate licenses to a license server.

License grace period

Your user Arm development tool licenses have an expiry date based on the expiry date of the order providing the license. Licenses have a grace period, where products work for a short period after a license expiry date. This grace period should be used to make more licenses available.

Making more licenses available

If you do not have enough licenses in your product, you can make more licenses available by:

- Purchasing an order for the required products and licenses.
- Reducing the number of allocated licenses by:
  - Revoking activation codes
  - Reducing the number of licenses allocated to license servers

2.5 Reduce allocated licenses

If you need to make more licenses available, you can reduce the number of allocated licenses:

- For activation code users that are no longer active, revoke the user activation codes.
- For local license servers, if you have unused licenses on a license server, you can reduce the number of licenses allocated to a license server.

3. Activation code administration

Describes how you can administer the Arm user-based licensing activation codes.

3.1 Create an activation code

Create an activation code for a user of Arm development tools under the user-based licensing model.

Before you begin

- You must have an account on the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
- Your portal account must have at least one product with available licenses. For more information see List products and license seats.
- If your account does not have the required product, you must add the product. For more information see Add a product and licenses.
- For an overview of how to create, activate, and revoke activation codes, watch the Cloud-based Licenses and Activation Codes video tutorial (1:39 minutes).

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. Select the **Products** tab and then select the **Arm Cloud** tab.
3. Click **Generate Activation Code**:
   - If you have seats available for this product, a banner appears at the top of the page stating **Activation code <activation code> generated successfully**. The activation code appears in the list of activation codes with a status of **Ready for activation**.

     The license seat is taken from the order that has non-overdraft seats available and expires first.
   - If you have no seats available but you do have overdraft seats available, you are shown a warning dialog about overdraft usage. Click **Confirm** to create the activation code. A banner appears at the top of the page stating **Activation code <activation code> generated successfully**. The activation code appears in the list of activation codes with a status of **Ready for activation**.

     The license seat is taken from the order that has overdraft seats available and expires first.
   - If you have no seats or overdraft seats available for this product, the **Generate Activation Code** button is unavailable.
4. Copy the activation code to the clipboard by clicking  on the required activation code and selecting **Copy activation code**.

5. Make the activation code available to the user. For example, by sending an email containing the activation code to the user.

Results

For details of how a user can activate their activation code see Activate products using an activation code. In some circumstance, you or the user will need to activate the activation code using another method:

- Proxy activation can be used for:
  - Users that do not have internet access
  - Users requiring a license activation period of longer than 7 days
  - Workflows that require license activation on many devices for the same user. Continuous integration is an example of this type of workflow.
- Changing the local license cache directory is required if the user is running the Arm development tool on a device where:
  - There is no local drive
  - The user does not have a home directory
  - The user does not have enough disk space on the local drive

After activation, the product license is bound to the user for at least 7 days. Subsequent use of any Arm development tool that supports user-based licensing on the same device by that user renews the license for the next 7 days by contacting the Arm license server. For details of the network requirements for accessing the Arm license server, see Requirements for user-based licensing.

Related information

View activation codes on page 16
Revoke an activation code on page 17

3.2 View activation codes

View the activation codes created for a product.

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. Select the **Products** tab and then select the **Arm Cloud** tab.
3. All activation codes that have been created and not been deleted are listed. An activation code can have the following status:
   - **Ready for activation**: The code has not been activated by a user.
   - **Activated**: The code has been activated by a user.
   - **Revoked**: An activated code has been revoked but cached licenses have not expired. After all cached licenses expire, the code is deleted. Usually, cached licenses can take up to 7 days to expire, but this can be longer for licenses created using proxy activation.

Note

The license seats associated with the listed activation codes are not available to create another activation code. A license seat becomes available when an activation code is deleted and is no longer listed. For further details see Revoke an activation code.

4. You can filter the activation codes by clicking **Filters** and selecting a status to filter by. The filter item is displayed as a tile next to the **Filters** button.
   You can add multiple filters, for example to list orders with statuses of **Ready for activation** and **Activated**.

   You can remove a filter by clicking on the **X** in the filter tile or remove all filters by clicking **Clear filters**.

3.3 Revoke an activation code

Revokes an activation code for a user of Arm development tools under the user-based licensing model.

About this task

The license seat for a revoked activation code can take up to 7 days to become available. For products activated by proxy activation, this could be even longer.

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. Select the **Products** tab and then select the **Arm Cloud** tab.
   The activation codes are listed. The **Seat held until** column shows the date that a revoked activation code will be deleted and become available for other users.
3. Click  on the required activation code and select **Revoke activation code**.

Results

The activation code is deleted immediately if:

- The activated code has a status of **Ready for activation**.
- The activated code has a status of **Activated** and the **Seat held until** column for the activation code is empty. This column is empty if the user has not used any Arm development tool for the time a cached license is valid.

If the activated code has a status of **Activated** and there is a date in the **Seat held until** column, the status of the activation code changes to **Revoked**. The user can no longer activate licenses on new devices using the revoked activation code, and previously cached licenses are not renewed. The activation code is deleted on the date shown in the **Seat held until** column in the **Arm Cloud** tab.


Note

The license seat only becomes available for other users when an activation code is deleted.

If required, the newly available licenses seats can be added to a license server:

- If you are creating a new license server, see Installing and populating the license server.
- If you are updating the number of licenses on an existing license server, see Modify number of licenses.

Related information

Create an activation code on page 15

4. Installing and populating the license server

Describes how to install, configure, and register the license server for Arm products licensed under the user-based licensing model. The license server is then populated with product licenses.

4.1 Hardware and software requirements

The hardware and software requirements presented in this section are for the Arm user-based licensing license server software. In a typical deployment setup, the license server software runs on a dedicated license-managed device, separate from Arm development tools running on client devices.

Hardware requirements

The license server has the following minimum hardware requirements:

- Processor: A dual core 64-bit x86 2GHz processor (or equivalent)
- Memory: 4GB
- Storage: 500MB

The license server is supported on the following virtual machines:

- Amazon EC2
- Citrix XenServer 7.2
- Google Compute Cloud
- Microsoft Hyper-V 6.3 on Windows Server 2016
- Oracle VirtualBox 6.1.18
- Parallels 15.1.2
- QEMU-KVM 2.7
- VMware ESXi 6.5
- VMware Workstation 14.1.5

The licenses generated for a license server are locked to the hostid of the license server. Therefore, your hardware must have at least one hostid that is constant and stable. For example, the stable hostid must not change when restarting the license server host or when switching between wired and wireless networks.

In the current license server implementation, the hostid is the MAC address of one of the available network adapters on the host machine. To ensure a stable hostid on a virtual machine, you must configure the virtual machine to have a fixed number

of ethernet adapters, each with a static MAC address. These MAC addresses must remain static when the virtual machine is power-cycled.

Supported operating systems

The license server is supported on the following operating systems:

- Red Hat Enterprise Linux or CentOS 7
- Red Hat Enterprise Linux or CentOS 8
- Ubuntu 20.04 LTS
- For license server version 1.2024010.0 and later, Ubuntu 22.04 LTS

Required system software

The license server and utilities require the following software to be installed and, where applicable, running:

- Common Linux utilities: `bash`, `tar`, `sed`, `getopt`, `uname`, `sleep`, and `grep`
- `Systemd` Linux service manager
- Python 3.6 or later. For license server version 1.2023060.0 or earlier, you must install the PyYAML module.
- One of the following Java Virtual Machine (JVM) implementations:
  - Oracle Java SE 8
  - OpenJDK 8
  - OpenJDK 11

4.2 Install your license server

To install the license server, use the following procedure.

Before you begin

- You must have an account on the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based:
  - Your portal account must have at least one product with available licenses. For more information see List products and license seats.
  - If your account does not have the required product, you must add the product. For more information see Add a product and licenses.
- If you have previously installed a license server for Arm products licensed under the user-based licensing model, you must first uninstall that server:
  - If you are upgrading your license server and want to retain the existing licenses, you must keep all existing license server data. For details, see Upgrade the license server.

- If you are installing a new license server on a device, you must delete all existing license server data after the licenses have been removed. For details, see Obsolete a license server. License data for all users of the device must be removed.

For security reasons, Arm recommends the license server runs as the `flexnetls` user and group. Arm recommends against changing this user to `root`. If you require a different user and group, create them before starting the installation.

- Arm advises against running Arm development tools on the same machine as the license server, because this affects server performance.

  If you have a limited number of machines for deploying Arm development tools, use activation codes. If you only use activation codes for licensing, you do not require a license server.
- For an overview of how to install and populate a local license server, watch the Local License Server Setup video tutorial (2:23 minutes).

About this task

The installation requires elevated privileges to:

- Create a new group and user for the license server service.

  The default user created is `flexnetls`. This user has limited access to the host and does not have a home directory, making the user less of a security risk.
- Create the installation directory (`/opt/flexnetls-armlmd` by default) using the `root` user.

  This ensures that files in the installation directory cannot be modified by other users and processes. Using the `root` user to install also allows the license server to be registered as a `systemd` service. This allows the license server to be started and shut down automatically as the host starts up and shuts down.
- Create the data storage directory (`/var/opt/flexnetls-armlmd` by default).
- Register the license server service with `systemd` and start the service.

- The `root` user is required for any action that starts or stops the license server.
- Following security best practice, all other license server commands should be run by a non-root user. Any command that modifies the license server configuration or discloses sensitive information about the host requests the license server `admin` password.

Procedure

1. Download the license server Linux installation package from https://lm.arm.com/downloads.
2. From the command line, change directory to the directory containing the downloaded software bundle and then extract it using the following command:

```
tar -xf flexnetls-armlmd-<version>.tar.gz
```

The extraction creates the installer directory, `flexnetls-armlmd-<version>`.


Note

The `flexnetls-armlmd-<version>` installation directory can be placed in any disk location and can be deleted after the installation process has completed.

3. Install the license server by running the following command as root:

```
sudo [-E] flexnetls-armlmd-<version>/install_license_server [--port <port>]
 [--install-dir <installation_directory>] [--data-dir <data_directory>] [--user
 <user>] [--group <group>]
```

Where:

- The `-E` parameter preserves the environment of the current user when running the command as root. This might be required if the location of the Java Virtual Machine (JVM) relies on the JAVA_HOME environment variable set in the environment of the current user.
- `<port>` specifies the TCP network port that the license server listens on. If the `--port` parameter is not specified, the port defaults to *7070*.


Caution

You cannot specify a port number of 1024 or lower because this port range is reserved for processes running as `root`.

- `<installation_directory>` is the installation directory for the license server software. If the `--install-dir` parameter is not specified, the installation directory defaults to `/opt/flexnetls-armlmd`.
- `<data_directory>` is the directory used to store the license server state files and logs. If the `--data-dir` parameter is not specified, the data directory defaults to `/var/opt/flexnetls-armlmd`.
- `<user>` is the username that the license server runs under. If the `--user` parameter is not specified, the license server runs as the `flexnetls` user.
- `<group>` is the group name that the license server runs under. If the `--group` parameter is not specified, the license server runs as the `flexnetls` group.

The license server is automatically started after the installation process completes. The license server also starts automatically when the server device is restarted.

4. Check that the license server is running.
After the license server is installed, it should start automatically. If the server does not start, this can indicate problems with the installation. Check the server status using the following command:

```
armlm_check_server_status
```

If the license server is running, you see:

```
License server running and ready to accept requests at http://<external server
 name or IP address>:7070
```

If the license server is not running, try to start it using the following command:

```
sudo systemctl start flexnetls-armlmd
```

If the server does not start with this command, check for errors in the `systemctl` logs. For example, use the following command to print all license server service events logged since the operating system started:

```
journalctl -u flexnetls-armlmd.service -b
```

Results

The license server is running. The license server service is configured to start and stop automatically with the operating system.

The installation directory has the following content:

- `bin` contains the administration utilities.
- `etc` contains the `paths` text file detailing the paths to the data and server directories.
- `server` contains the license server daemon and related configuration files.
- `license_terms` contains the software license agreement.
- `VERSION` text file details the license server version.

Next steps

Configure your license server

4.3 Configure your license server

After the license server has been installed, you must configure the server.

Before you begin

You must Install your license server.

Procedure

1. Set the `PATH` environment variable on the license server device to include the `bin` directory in the license server installation directory. For example:

   ```
   export PATH=/opt/flexnetls-armlmd/bin:$PATH
   ```

2. You must change the default installed administrator user (`admin`) password because you cannot use this password to perform administration tasks. Run the `armlm_change_admin_password` command to change the password.


Caution

You should ensure that the administrator password is not lost, because it is difficult to reset the password. See Reset the administrator password for more information.

The new password must meet the following criteria:

- Between 8 and 64 characters in length
- At least one digit
- At least one uppercase character
- At least one special character (for example, ^*$-+?_&=!%{}/#@)
- No whitespace characters.

The password change tool asks you to confirm the new password by entering it again.

The following is output when the administration password is successfully changed:

```
Administrative account password changed successfully
```

3. When you install the license server, the installation process selects a hostid. Several other hostids could be available, depending on the hardware configuration of the host. You must check that the selected hostid is appropriate, for example to ensure the most stable hostid is used.


Note

- The licenses generated for a license server are locked to the hostid of the license server. You cannot change the license server hostid after you have registered your license server.
- The hostid of the license server must be constant and stable. For example, the hostid must not change when restarting the license server host or when switching between wired and wireless networks.

Use the following command to review the selected hostid:

```
armlm_show_hostid
```

The password for `admin` is requested. The output shows the selected hostid and the available hostids. For example:

```
{
  "selected" : {
    "hostidType" : "ETHERNET",
    "hostidValue" : "0800270AA6FF"
  },
```

```
  "hostids" : [ {
    "hostidType" : "ETHERNET",
    "hostidValue" : "0800270AA6FF"
  }, {
    "hostidType" : "ETHERNET",
    "hostidValue" : "080027503FFF"
  } ]
}
```

If you want to change the hostid used by the license server:

a) Edit the `<installation_directory>/server/local-configuration.yaml` file, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.
b) Uncommon the following line:

```
#active-hostid:
```

c) Add one of the hostids identified by `armlm_show_hostid` command as the `active-hostid` value in the format `<hostid>/ETHERNET`. For example:

```
active-hostid: 080027503FFF/ETHERNET
```

d) Restart the license server using the following command:

```
sudo systemctl restart flexnetls-armlmd
```

4. During installation, you can set the license server port number. If not set during installation, the port number defaults to `7070`. You can change the port number as follows:
   a) Edit the `<installation_directory>/server/local-configuration.yaml` file.
   b) Change the `port` value. For example:

```
port: 7071
```

   c) Restart the license server using the following command:

```
sudo systemctl restart flexnetls-armlmd
```

Next steps
Register your license server

4.4 Register your license server

You must register your license server on the Arm licensing portal.

Before you begin
You must Configure your license server.

Procedure
1. Make sure the license server is running using the following command:

```
armlm_check_server_status
```

If the server is not running, start it using the following command:

```
sudo systemctl start flexnetls-armlmd
```

Note

If the license server fails to start, you can check for errors in the systemctl logs. For example, use the following `journalctl` command to print all `flexnetls-armlmd` service events that have been logged since the operating system was last started:

```
journalctl -u flexnetls-armlmd.service -b
```

2. Create an identity file for the license server, in your current directory, using the following command:

```
armlm_generate_server_identity --identity-file identity.bin
```

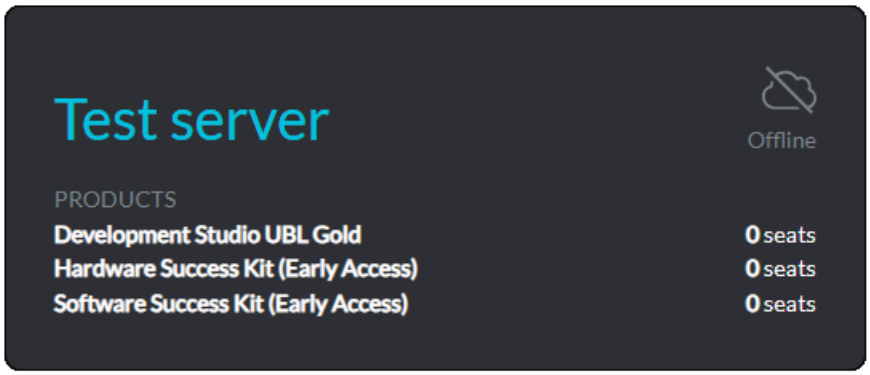
The password for `admin` is requested.

3. Register your license server with Arm:
   a) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
   b) Select the **Servers** tab.
   c) Click **Register a server** and, in the new dialog box:
      1. Type in a name for the server into the **Server name** field.
      2. Add the `identity.bin` file by dragging the file onto the **Choose or drag & drop your identity file here** area or by clicking in the area and selecting the file.
      3. Click **Upload file & register server**.

Results

After a short while, you are returned to the **Servers** tab. A new license server tile is created. For example:

Figure 4-1: Example license server tile



Next steps

Allocate products to the license server

4.5 Allocate products to the license server

After you have registered your license server, allocate your product licenses to the server.

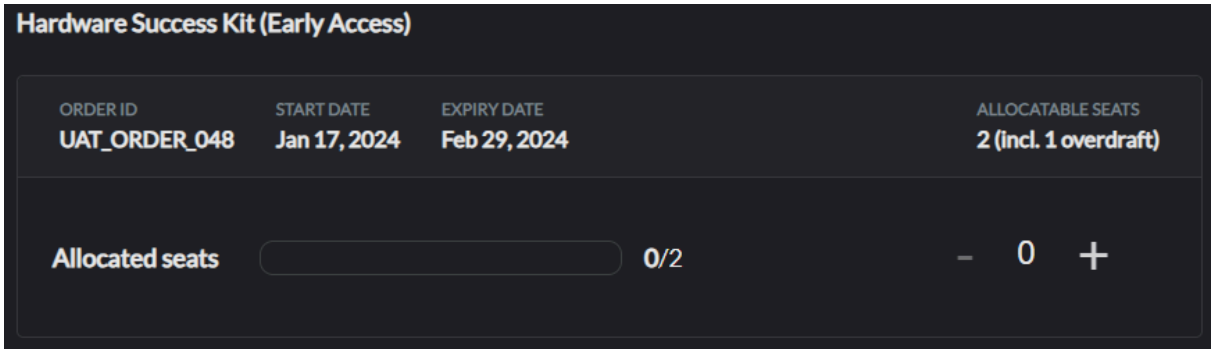
Before you begin

- You must Register your license server.
- You must have administrator access to the license server.
- If you want to make a license available that is associated with an existing active activation code, you must revoke the activation code. If the activation code license has been used recently, the license will not be immediately available to add to the license server. For more details see Revoke an activation code.

Procedure

1. Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
2. Select the **Servers** tab.
3. Click on the required license server tile. The products you own are shown on the server details page, including the number of **Allocatable seats**. For example:

   Figure 4-2: Example product displayed in license server



4. Add licenses for products by clicking on **+** in the product.
5. When you have added the required number of licenses, click **Confirm changes**. A **Confirm changes** dialog box displays the changes to license numbers.

Warning

Do not confirm the changes if you do not have administrator access to the license server. If you confirm the changes without access to the license server, you will lock the licenses. The licenses cannot be returned to your account because you cannot add the licenses to the server and then free up the licenses by removing them from the license server.

If licenses are locked, you can only unlock the licenses by submitting a support case to https://services.arm.com/support/s/contactsupport.

If the changes are correct, click **Confirm changes**.

A banner confirms you have applied the changes successfully.

6. Download a license file by clicking **Manage Server** and then selecting **Download licenses**. The file downloads to your default download area with the following filename:
   `licenses-<server_ID>-<timestamp>.bin`

   Where `<server_ID>` is the identifier of the server and `<timestamp>` is the time the file was created.
7. If required, transfer the product license file to the license server device.
8. Load the product licenses using the following command on the license server device:

   ```
   armlm_update_licenses --data-file <license_file>
   ```

   Where `<license_file>` is the name of the product license file. The password for `admin` is requested.

   The following output confirms that no further action is required:

   ```
   Licenses have been successfully updated. No confirmation is required.
   ```

Next steps

User license activation

Related information

Create an access control list on page 38
List licenses and usage on page 32
Modify number of licenses on page 33

4.6 User license activation

After the license server has been registered, you must inform your users how to activate the licenses for their Arm products. In this case, a user could be a human using an Arm development tool or an automated process. Users can license a development tool by activating their product using a license server.

In some circumstance, you or the user will need to activate the activation code using another method:

- Proxy activation can be used for:
  - Users that do not have internet access.

    - Users requiring a license activation period of longer than 7 days.
    - Workflows that require license activation on many devices for the same user. Continuous integration is an example of this type of workflow.
- Changing the local license cache directory is required if the user is running the Arm development tool on a device where:
    - There is no local drive
    - The user does not have a home directory
    - The user does not have enough disk space on the local drive

After activation, the product license is bound to the user for 7 days. Subsequent use of any Arm development tool that supports user-based licensing on the same device by that user renews the license for the next 7 days by contacting the local license server. If you cannot extend the product license, you can still use the product as licensed until the 7-day limit expires. This could occur if your device cannot contact the license server.

License server URL

The server URL that you send to users to activate their product license must:

- Include the `http://` or `https://` protocol prefix.
- Include the port number, unless the port number is a default port number. The default port numbers are `80` for `http://` and `443` for `https://`.

This is the only license server port that users require access to.

- Not include a path after the address or port number. For example, `http://myserver:5999` is a valid server URL, but `http://myserver:5999/api/1.0/instance/~` is not valid.

Licensing using environment variable

Using an environment variable for licensing is unsuitable when many devices request license activation in a short period. For example, this could happen in a Continuous Integration (CI) workflow. This type of workflow floods the license server with requests, which can cause the server to reject license requests. For this type of workflow, you should use Proxy activation to activate the license once and then import the resultant license file on all devices.

Users can obtain a product license from the license server by setting the `ARMLM_ONDEMAND_ACTIVATION` environment variable to `<product_code>@<server_URL>`.

Before setting this environment variable, the user must use the following command to check that the license server URL is valid and the required product license is available:

```
armlm inspect --server <license server URL>
```

If the user can connect to the server, this command returns the different product licenses available on the license server and the licenses used by the user on the device.

Activating licenses on multiple devices

The product license assigned to a user can be used on multiple devices using one of the following methods:

- The user can activate the license for an Arm development tool on other devices as usual.
- Proxy activation can be used to create a license activation file on one device and then use that file to provide licenses on one or many other devices for the same user. For more details see Proxy activation.
- The cached Arm product license details are stored in the `.armlm` directory. You can make this license cache directory available to other devices for the same user. For more details see Activate a license on multiple devices.

4.7 License server release history

The following table describes the versions of the user-based licensing license server that have functional changes. To find the license server version, see License server version location.

For details of how to update to the latest version of the license server, see Upgrade the license server.

Table 4-1: Changes for user-based licensing utilities

License server version	Functional changes
1.2022001.0 (document version 1.2022010)	First product release.
1.2023060.0 (document version 1.2023600)	Configuration available to modify the number of license requests the license server processes in a given time. For more details see Change the maximum number of license server requests.
1.2024010.0 (document version 1.2024100)	• Support for Ubuntu 22.04 LTS • Usernames are now treated as case-insensitive. • PyYAML is no longer a requirement
1.2024050.0 (document version 1.2024500)	You can use an access control list to allow or deny access to a user-based licensing license server for specified users. For more details see Create an access control list.

5. License server administration

Describes how you can administer the Arm user-based licensing license server, including the available license server commands.

5.1 Stop the license server

The license server is automatically started after installation and when the server device is restarted.

Procedure

Stop the license server with the following command:

```
sudo systemctl stop flexnetls-armlmd
```

Related information

Find the license server status on page 32
Start the license server on page 31

5.2 Start the license server

The license server is automatically started after installation and when the server device is restarted.

Before you begin

The license server has been stopped by the administrator.

Procedure

Start the license server with the following command:

```
sudo systemctl start flexnetls-armlmd
```


Note

If the license server fails to start, you can check for errors in the systemctl logs. For example, use the following `journalctl` command to print all `flexnetls-armlmd` service events that have been logged since the operating system was last started:

```
journalctl -u flexnetls-armlmd.service -b
```

Related information

Find the license server status on page 32

5.3 Restart the license server

Restart the license server.

Before you begin
The license server must be running.

Procedure
Restart the license server using the following command:

```
sudo systemctl restart flexnetls-armlmd
```

Note

If the license server fails to start, you can check for errors in the systemctl logs. For example, use the following `journalctl` command to print all `flexnetls-armlmd` service events that have been logged since the operating system was last started:

```
journalctl -u flexnetls-armlmd.service -b
```

Related information
Find the license server status on page 32

5.4 Find the license server status

Find the status of your license server.

Procedure
Check the license server service status using the following command:

```
armlm_check_server_status
```

Related information
Restart the license server on page 31
Stop the license server on page 31
Start the license server on page 31

5.5 List licenses and usage

List the product licenses and their usage on your license server.

Before you begin
The license server must be running.

Procedure

List the product licenses on your license server using the following command:

```
armlm_list_products [--show-expired | -e] [--utc]
```

Where:

- `--show-expired` and `-e` are optional parameters. By default, the output from this command lists:
  - Active products
  - Products that have expired in the last 30 days

  If you specify the `--show-expired` or `-e` parameter, the output also lists all expired products.
- `--utc` is an optional parameter. By default, the output displays time in the local time zone. If you specify this parameter, the output displays the time in UTC time.

Results

The following is an example of the output from this command:

```
3 product(s) found on license server

Hardware Success Kit Standard, HWSKT-STD0, 60 seat(s), 33 seat(s) used
  Order 273591004, valid until: 2023-02-24, 50 seat(s), 28 seat(s) used
  Order 273591034, valid until: 2023-12-31, 10 seat(s), 5 seat(s) used

Keil MDK Professional, KEMDK-PRO0, 20 seat(s), 12 seat(s) used
  Order 273591003, valid until: 2023-02-15, 20 seat(s), 12 seat(s) used
```

Related information

List users on page 37

5.6 Modify number of licenses

Modify the number of product licenses available on the license server.

Before you begin

The license server must be running.

If you want to make an activation code license available for the license server, you must revoke the activation code. If the activation code license has been used recently, the license will not be immediately available to add to the license server. For more details see Revoke an activation code.

About this task

You should not reduce the number of licenses below the number of active users, because some of your users will be unable to renew their license.

Procedure

1. On the Arm user-based licensing portal, modify the number of product licenses allocated to the license server as follows:
   a) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
   b) Select the **Servers** tab.
   c) Click on the required license server tile.
   d) Add or remove licenses by clicking on **+** or **-** in the required products.
   e) Click **Confirm changes**. A **Confirm changes** dialog box displays the changes to license numbers. If the changes are correct, click **Confirm changes**.
   A banner confirms you have applied the changes successfully.

   
   Note

   If licenses have been removed, the test server status changes to **Awaiting synchronization**. You cannot make changes to the number of license on the server until a confirmation file has been uploaded.

   f) Download a license file by clicking **Manage Server** and then selecting **Download licenses**. The file downloads to your default download area with the following filename:
   `licenses-<server_ID>-<timestamp>.bin`

   Where `<server_ID>` is the identifier of the server and `<timestamp>` is the time the file was created.
2. Transfer the file to the license server device and use the following license command to load the modified license data:

   ```
   armlm_update_licenses --data-file licenses-<server_ID>-<timestamp>.bin
   ```

   The password for `admin` is requested. The output determines if further action is required:

   - If licenses are removed, the following output confirms that further action is required:

     ```
     Licenses have been successfully updated. A confirmation file needs to be
      generated to complete this process.
     Please run the "armlm_generate_server_confirmation" command and upload the
      generated file to the licensing portal.
     ```

   - If licenses are added, the following output confirms that no further action is required:

     ```
     Licenses have been successfully updated. No confirmation is required.
     ```

3. If licenses have been removed, a confirmation is required:
   a) Use the following license server command to generate a confirmation file:

   ```
   armlm_generate_server_confirmation --confirmation-file confirmation.bin
   ```

   The password for `admin` is requested. The output from the command confirms the name and location of the confirmation file. For example:

   ```
   Activation response written to /home/user/confirmation.bin
   ```

b) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
c) Select the **Servers** tab and click on the required license server tile.
d) Click **Manage Server** and select **Upload confirmation**. In the new dialog box:
    1. Add the confirmation file by dragging the file onto the **Choose or drag & drop your confirmation file here** area or by clicking in the area and selecting the file.
    2. Click **Upload confirmation file**.

    A banner confirms you have uploaded the confirmation successfully.

Related information

List licenses and usage on page 32

5.7 Update licenses for new product versions

When Arm releases new versions of licensed development tools, Arm product licenses are modified for the new development tool functionality. If your users are going to install the new versions of the development tool you should update the license server with the latest version of the licenses.

Before you begin

The license server must be running.

About this task

If the licenses are not updated, your users may see errors stating their product is not supported with their license. For example:

```
armclang: error: FuSa versions of the Product is not supported with this license
```

Note

If you need to add or remove licenses when update the licenses, you should modify the number of licenses instead of using this process.

Procedure

1. On the Arm user-based licensing portal, download the license file:
    a) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
    b) Select the **Servers** tab.
    c) Click on the required license server tile.
    d) Download a license file by clicking **Manage Server** and then selecting **Download licenses**. The file downloads to your default download area with the following filename:
    `licenses-<server_ID>-<timestamp>.bin`

    Where `<server_ID>` is the identifier of the server and `<timestamp>` is the time the file was created.
2. Transfer the file to the license server device.

3. Load the modified license data using the following command:

```
armlm_update_licenses --data-file licenses-<server_ID>-<timestamp>.bin
```

   The password for `admin` is requested. The following output confirms that no further action is required:

```
Licenses have been successfully updated. No confirmation is required.
```

Next steps

Your users must update their licenses:

- Users with proxy-activated licenses need to activated their licenses by proxy.
- The licenses for other users of the license server will automatically update when the license renews. A license renews once every 24 hours but if the license is needed sooner, the user can renew their license manually by extending the license.

5.8 Migrate licenses to a new license server

Migrate licenses from an existing license server to a new license server.

Before you begin

The license server must be running.

Procedure

1. Obsolete the license server using the instructions in Obsolete a license server.
2. Create a new license server. Follow the instructions in:
   - Install your license server
   - Configure your license server
   - Register your license server
   - Allocate products to the license server

Next steps

- If you have changed the license server URL, you must inform your users that they need to activate their product again using the new license server URL:
  1. If your users activate their product using the ARMLM_ONDEMAND_ACTIVATION environment variable, they must update the value of ARMLM_ONDEMAND_ACTIVATION to include the new URL, `<existing_product_code>@<new_server_URL>`.
  2. Your users must activate their product using the new URL.
- If you have not changed the license server URL, users should not be affected. When the user starts the Arm development tool, the existing license is recognized as broken due to an incorrect hostid. The development tool automatically contacts the license server to obtain a new license that has the correct hostid.

5.9 List users

List the users on your license server and their associated products. The output also includes the date that the license would be available for other users, if it is not renewed.

Before you begin

The license server must be running.

Procedure

List the users on your license server using the following command:

```
armlm_list_users [--csv] [--utc]
```

Where:

- `--csv` is an optional parameter. By default, this command formats the output as a table. If you specify this parameter, the command formats the output as comma-separated values (CSV).
- `--utc` is an optional parameter. By default, the output displays time in the local time zone. If you specify this parameter, the output displays the time in UTC time.

Results

The following is an example of the output from this command in table format:

```
User    Product Code  Product Name          Last Access                Held Until
----    ------------  ------------          -----------                ----------
adlxho  HWSKT-STD0    Hardware Success Kit  2022-Apr-19 10:13:19 UTC   2022-Apr-26
hxyiso  HWSKT-STD0    Hardware Success Kit  2022-Apr-14 09:08:38 UTC   2022-Apr-21
jxycot  HWSKT-STD0    Hardware Success Kit  2022-Apr-12 09:58:42 UTC   2022-Apr-19
jxyche  HWSKT-STD0    Hardware Success Kit  2022-Apr-03 00:25:09 UTC   2022-Apr-10
```

Related information

List licenses and usage on page 32

5.10 Tracking license activations and failures

You can track license activations, license failures, and the number of available licenses in the license server logs.

About this task

Product activation requests are logged in the `<data_directory>/flexnetls.log` file, where `<data_directory>` is the data directory that was set up when the license server was installed. If no data directory was specified during installation, the logs are stored in `/var/opt/flexnetls-armlmd/logs/flexnetls.log`.

Procedure

You can track licenses by searching the `<data_directory>/flexnetls.log` log file for lines containing the `request preview` and `count=` strings. For example, the following log shows one user

successfully activating a license and one user failing to activate a license, as there are no licenses available:

```
2024-11-13T12:00:00,000Z INFO - [<user> request preview] Successfully handled
 acquire request for feature xxxxxxxxxxxxxxxxxxxxxxxxxxx-x 2025.09 count=1
 correlationID=xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
2024-11-13T12:00:01,000Z INFO - [<user> request preview] Successfully handled
 acquire request for feature xxxxxxxxxxxxxxxxxxxxxxxxxxx-x 2025.09 count=0
 correlationID=xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
```

Where `<user>` is the user trying to activate a license.

These lines can provide information on:

Failed license activations

You can see failed license activations by searching for lines that include `request preview` and `count=0`.

Successful license activations

You can see successful license activations by searching for lines that include `request preview` and `count=<*>`, where `<*>` is a wildcard for an integer of 1 or greater.

Number of available licenses

You can track the number of available licenses by searching for activation request lines that include `request preview` and `count=`. The value of `count=` is the number of available licenses before the activation request. For example:

- If the `count=` value is 9, 8 licenses are available after the request is successfully processed.
- If the `count=` value is 0, there are no licenses available.

5.11 Create an access control list

An access control list is used to allow or deny access to a user-based licensing license server for specified users. A user that does not have access to the license server cannot use the license server to activate a product or renew a license.

Before you begin

- You must have licenser server version 1.2024050.0 or later. If you have an earlier version, you must Upgrade the license server.
- For an overview of how to create an access control list, watch the Access control lists video tutorial (2:11 minutes).

About this task

Access control lists allow you to restrict access to your user-based licensing licenses. For example:

- You can allow only specified users to use the licenses available on your license server.
- You can stop specified users from using the licenses on your license server. For example, this is useful if you have given activation code licenses to some users and want to make sure that these users do not take another license from the server license.

Procedure

1. Create an access control list file. The content of this file must have the following format:

```
model "userAccessList" {
  on hostid(<users>) {
    use "default"
    <list_type>
  }
  on any() {
    <reverse_list_type>
  }
}
```

   Where:

   - `<users>` is a comma-separated list of users. Each user is specified as `<username>/USER`, where `<username>` is case-insensitive.
   - `<list_type>` must be one of the following:
     - `accept` creates an allow list that allows the specified `<users>` to access the license server. All other users are denied access to the license server.
     - `deny` creates a deny list that denies the specified `<users>` access to the license server. All other users can access the license server.
   - `<reverse_list_type>` must be:
     - `deny` if `<list_type>` is `accept`.
     - `accept` if `<list_type>` is `deny`.

   Examples of access control list files are provided in the `<installation_directory>/templates` directory, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.

   In the following example of an access control file, only the `jasmine`, `ciuser`, and `anyuser` users are allowed to access the license server to activate products and renew licenses:

```
model "userAccessList" {
  on hostid("jasmine/USER", "ciuser/USER", "anyuser/USER") {
    use "default"
    accept
  }
  on any() {
    deny
  }
}
```

2. Load the access control list file onto the license server using the following command:

```
armlm_set_acl --acl-file <ACLfile>
```

   Where `<ACLfilename>` is the full path to the access control list file. The password for `admin` is requested.

Results

If the access control list is successfully imported, the license server returns:

```
ACL set successfully
```

The access control configuration in the access control list file replaces any previous access control list configuration on this license server.

When you update the access control list to deny access to a user, the user cannot renew their license or activate a new product. However:

- The user can still use the Arm development tools on devices that have active licenses. Licenses are deactivated on a device after 7 days have passed since the license was renewed on the device. For products activated using proxy activation, a license can be active for up to 365 days.
- The license is unavailable for other license server users whilst a license is still active. You can see user license release dates by listing users and reviewing the **Held Until** date for each user.

Related information

Show user access control list on page 40
Remove user access control list on page 41

5.12 Show user access control list

Show the user access control list currently used by your license server.

Before you begin

The license server must be running.

About this task

An access control list is used to allow or deny access to a user-based licensing license server for specified users. A user that does not have access to the license server cannot use the license server to activate an Arm product or renew a license.

Procedure

Show the access control list on your license server using the following command:

```
armlm_show_acl [--password <admin_password>]
```

If `--password <admin_password>` is not specified, the password for `admin` is requested.

Results

The following is an example of the output from this command:

```
model "userAccessList" {
  on hostid("jasmine/USER", "ciuser/USER", "anyuser/USER") {
    use "default"
    accept
  }
  on any() {
    deny
  }
```

```
}
```

This example shows that the `jasmine`, `ciuser`, and `anyuser` users are allowed to access the license server to activate products and renew licenses. All other users cannot access the license server.

Related information

Create an access control list on page 38
Remove user access control list on page 41

5.13 Remove user access control list

Allow all users to access the license server by removing your license server user access control list.

Before you begin

The license server must be running.

About this task

An access control list is used to allow or deny access to a user-based licensing license server for specified users. A user that does not have access to the license server cannot use the license server to activate an Arm product or renew a license.

Procedure

Load the access control list default template file:

```
armlm_set_acl --acl-file <installation_directory>/templates/default.dsl
```

Where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.

The password for `admin` is requested.

Results

If the access control list is successfully imported, the license server returns:

```
ACL set successfully
```

All user can now access the license server to activate an Arm product or renew a license.

Related information

Show user access control list on page 40
Create an access control list on page 38

5.14 License server version location

The license server version number is provided in the `<installation_directory>/VERSION` file, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.

5.15 Change the administrator password

You can change the administrator password from the command line.

Before you begin

The license server must be running.

Procedure

1. From the command line, run the `armlm_change_admin_password` command.
2. Enter the existing password.


Note

If you have forgotten the administrator password, you can reset the password using the instructions in Reset the administrator password.

3. Enter the new password. The new password must meet the following criteria:
   - Between 8 and 64 characters
   - At least one digit
   - At least one uppercase character
   - At least one special character (for example, ^*$-+?_&=!%{}/#@)
   - No whitespace characters
4. Confirm the new password by entering it again.

Results

The following is output when the administration password is successfully changed:

```
Administrative account password changed successfully
```

5.16 Reset the administrator password

Reset the administrator password if the original password was lost. If you know the original password, use the Change the administrator password procedure instead.

Before you begin

The license server is unavailable during the password reset procedure. This can take some time as you must uninstall the server, re-install the server, and load the licenses back into the server. You should schedule this procedure accordingly and let your users know when the license server will be unavailable.

Procedure

1. Create a file containing the latest license data:
   a) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
   b) Select the **Servers** tab and click on the required license server tile.
   c) Download a license file by clicking **Manage Server** and then selecting **Download licenses**. The file downloads to your default download area with the following filename:
   `licenses-<server_ID>-<timestamp>.bin`

   Where `<server_ID>` is the identifier of the server and `<timestamp>` is the time the file was created.
   d) If the license file was not downloaded to the license server device, transfer the file to this device.

   Note

   You must not save the license data file in either of the following directories on the license server device, because these directories are deleted when the license server is uninstalled:

   - The license server installation directory (`/opt/flexnetls-armlmd` by default)
   - The data storage directory (`/var/opt/flexnetls-armlmd` by default)

2. Backup the `<installation_directory>/server/local-configuration.yaml` file, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.
3. Uninstall the license server using this instructions in Uninstall the license server. You must use the `--delete-storage` parameter to delete all license data.
4. Re-install the license server using the instructions in Install your license server. This procedure creates a new administrator password.
5. Overwrite the `<installation_directory>/server/local-configuration.yaml` file with your backup copy and Restart the license server.
6. Load the license data using the following command:

   ```
   armlm_update_licenses --data-file <license_file>
   ```

   Where `<license_file>` is the name of the license file. The password for `admin` is requested.

The output from the command is as follows, confirming no further action is required when adding licenses:

```
Licenses have been successfully updated. No confirmation is required.
```

5.17 Monitor the license server

Log files for the Arm user-based licensing license server are stored in the `<data_directory>/logs` directory, where `<data_directory>` is the data directory that was set up when the license server was installed. If no data directory was specified during installation, the logs are stored in `/var/opt/flexnetls-armlmd/logs`.

5.18 Obsolete a license server

When the license server is no longer required, you must delete the product licenses on the license server device and in the Arm user-based licensing portal. This process ensures that your Arm product licenses become available for other servers or for creating activation codes.

Before you begin

- The license server must be running.
- If your Arm users accessing the license server to be deleted still require Arm products, you must set up an alternative license server. For details, see Install your license server.
- For an overview of the process of making a license server obsolete, watch the Removal of Licenses and Decommissioning Server video tutorial (1:24 minutes).

Procedure

1. Review the product licenses on the license server. For more details see List licenses and usage.
2. Remove all Arm product licenses from the license server, including uploading confirmation files into Arm user-based licensing portal for all products on your server.
   For more details, see Modify number of licenses.
3. Delete the license server on the user-based licensing portal:
   a) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
   b) Select the **Servers** tab and click on the required license server tile.
   c) Click **Manage Server** and select **Obsolete Server**.
   d) In the resultant dialog box, click **Confirm** to delete the server from the Arm user-based licensing portal.
   e) To delete the server, click **Confirm** in the new dialog box.
4. Uninstall the license server using the instructions in Uninstall the license server.

5.19 Recover a license server

Your license server could become unavailable, for example if the license server server administrator leaves the company and you cannot access the license server. In this case, you cannot return your Arm user-based licensing licenses to your allocation on the Arm user-based licensing portal and must ask Arm support to do this for you.

Before you begin

You must have access to your company account on the Arm user-based licensing portal that was used to populate the licenses on the unavailable license server. If you do not have access to this account, log an Arm support case on https://services.arm.com/support/s/contactsupport requesting access to the account.

Procedure

1. Make sure you have the correct name for the license server:
   a) Access the Arm user-based licensing portal on https://developer.arm.com/support/licensing/user-based.
   b) Select the **Products** tab and click on the required product tile.
   c) Select the **Local Servers** tab and the license server names are listed in the **Server name** column.
2. Log an Arm support case on https://services.arm.com/support/s/contactsupport requesting that the license server is obsoleted by support.
3. When the server is obsoleted, the licenses that were on the obsoleted server become available.
4. Install a new server and allocate products with licenses. For more details see Installing and populating the license server.

5.20 Upgrade the license server

To upgrade your existing license server for Arm products licensed under the user-based licensing model to a later version of the license server, use the following procedure.

Before you begin

You must have previously installed a license server for Arm products licensed under the user-based licensing model.

About this task

For details of functionality introduced in license manager versions see License server release history.

You must not use the `--delete-storage` option when upgrading the license server.

Procedure

1. Download the latest version of the license server Linux installation package from https://lm.arm.com/downloads.
2. Backup the `<installation_directory>/server/local-configuration.yaml` file, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.
3. From the command line, change directory to a directory that is not in one of the following directories:
   - The license server installation directory (`/opt/flexnetls-armlmd` by default)
   - The data storage directory (`/var/opt/flexnetls-armlmd` by default)
4. Uninstall the license server using the following command:

   ```
   sudo <installation_directory>/bin/armlm_uninstall_license_server
   ```

   Where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.

   
   Caution

   You must not use the `--delete-storage` option when upgrading the license server.

5. Follow the instructions in Install your license server to install the license server upgrade.

   
   Caution

   - You must keep the data storage directory used in the previous installation (`/var/opt/flexnetls-armlmd` by default).
   - You must keep the hostid used in the previous installation.

6. Overwrite the `<installation_directory>/server/local-configuration.yaml` file with your backup copy and Restart the license server.
7. Confirm that your existing licenses are available. See List licenses and usage.

Related information

Install your license server on page 20

5.21 Uninstall the license server

Uninstall the license server including, optionally, the license data.

Before you begin

If you are not going to re-install the license server after uninstalling it, you must recover the Arm product licenses so they can be reused on other license servers or for creating activation codes. For details of how to do this, see Obsolete a license server.

Procedure

1. From the command line, change directory to a directory that is not in one of the following directories:
   - The license server installation directory (`/opt/flexnetls-armlmd` by default)
   - The data storage directory (`/var/opt/flexnetls-armlmd` by default)
2. Uninstall the license server using the following command:

   ```
   sudo <installation_directory>/bin/armlm_uninstall_license_server [--delete-storage]
   ```

   Where:

   - `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.
   - `--delete-storage` is an optional parameter. When set, the uninstall process also deletes all license data, including the allocated licenses, administrator password, and license server configuration.

     - You must not use `--delete-storage` when upgrading the license server.
     - You must use `--delete-storage` when you Obsolete a license server.

5.22 Move license server directories

Moving the license server installation and data directories.

Before you begin

The license server must be running.

About this task

If you need to move the installation and data directories, you cannot use `mv` or `cp` to move these directories. You must uninstall and re-install the license server.

Procedure

1. Backup any files that you require later:
   - The license server configuration file `<installation_directory>/server/local-configuration.yaml`, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.
   - If you have created an access control list, save details of the access control list. You can do this by running the `armlm_show_acl` command and saving the output to a file. For example:

     ```
     armlm_show_acl --password myadminpassword > /safe/acl_save
     ```

   - Any required log files in the `<data_storage_directory>/logs` directory, where `<data_storage_directory>` is the data storage directory. If you did not change the data storage directory during installation, this directory defaults to `/var/opt/flexnetls-armlmd`.
2. Obsolete the license server.
3. Install the license server and populate it with licenses. During the installation process you can change the default installation directory and the default data directory to the required locations for the installation and data directories.
4. Use the previously saved access control file to create your access control list.
5. Overwrite the `<installation_directory>/server/local-configuration.yaml` file with your backup copy.
6. Restart the license server.

5.23 Change the maximum number of license server requests

The license server rate limit is the number of license requests the license server processes in a given time. If the server receives more requests than the rate limit, the additional license requests are rejected with an error code that instructs the client to wait a defined time and then retry. If the rate limit is constantly exceeded, the license server response time degrades and license requests fail as requests exceed the client timeout.

Before you begin

The license server must be running.

About this task

By default, the license server rate limit is 10 license requests per second. If you are finding that your users are having problems with the time to process license requests or are having license requests rejected, you can:

- Modify the method of licensing. For example, if you have many devices trying to access the license server in a short time-period, use a transfer file that requires only one license server request. For further details see Proxy activation.
- For license server versions of 1.2022120.2 and later, you can change the rate limit as described in the following procedure.


Note

- Arm recommends that you do not change this default value. A sustained rate of more than 10 requests per second indicates unexpected behavior. You should investigate the cause of this behavior before changing the rate limit.
- Increasing the volume of requests can create a performance problem for the license server.

Procedure

1. Open the `<installation_directory>/server/local-configuration.yaml`, where `<installation_directory>` is the license server installation directory. If you did not change the installation directory during installation, this directory defaults to `/opt/flexnetls-armlmd`.
2. Modify the `rate-limit` parameter to change the rate limit. The default rate limit is `10` requests per second.
3. Save and exit the file.
4. Restart the license server.

Related information

Restart the license server on page 31

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Product and document information

Read the information in these sections to understand the release status of the product and documentation, and the conventions used in Arm documents.

Product status

All products and services provided by Arm require deliverables to be prepared and made available at different levels of completeness. The information in this document indicates the appropriate level of completeness for the associated deliverables.

Product completeness status

The information in this document is Final, that is for a developed product.

Revision history

These sections can help you understand how the document has changed over time.

Document release information

The Document history table gives the issue number and the released date for each released issue of this document.

Document history

Issue	Date	Confidentiality	Change
1.2024500-05	31 July 2025	Non-Confidential	Documentation update 5 for v1.2024500
1.2024500-04	30 April 2025	Non-Confidential	Documentation update 4 for v1.2024500
1.2024500-03	30 November 2024	Non-Confidential	Documentation update 3 for v1.2024500
1.2024500-02	30 September 2024	Non-Confidential	Documentation update 2 for v1.2024500
1.2024500-01	31 July 2024	Non-Confidential	Documentation update 1 for v1.2024500

Issue	Date	Confidentiality	Change
1.2024500-00	30 May 2024	Non-Confidential	Updated document for v1.2024500
1.2024100-02	26 April 2024	Non-Confidential	Documentation update 2 for v1.2024100
1.2024100-01	28 March 2024	Non-Confidential	Documentation update 1 for v1.2024100
1.2024100-00	27 February 2024	Non-Confidential	Updated document for v1.2024100
1.2023600-05	29 January 2024	Non-Confidential	Documentation update 5 for v1.2023600
1.2023600-04	21 November 2023	Non-Confidential	Documentation update 4 for v1.2023600
1.2023600-03	27 October 2023	Non-Confidential	Documentation update 3 for v1.2023600. The document name changed from User-based Licensing License Server Administration Guide to User-based Licensing Administration Guide.
1.2023600-02	30 September 2023	Non-Confidential	Documentation update 2 for v1.2023600
1.2023600-01	24 August 2023	Non-Confidential	Documentation update 1 for v1.2023600
1.2023600-00	29 June 2023	Non-Confidential	Updated document for v1.2023600
1.2022122-00	18 May 2023	Non-Confidential	Updated document for v1.2022122
1.2022121-01	28 April 2023	Non-Confidential	Documentation update 1 for v1.2022121
1.2022121-00	29 March 2023	Non-Confidential	Updated document for v1.2022121
1.2022120-01	24 February 2023	Non-Confidential	Documentation update 1 for v1.2022120

Issue	Date	Confidentiality	Change
1.2022120-00	27 January 2023	Non-Confidential	Updated document for v1.2022120
1.2022110-00	28 November 2022	Non-Confidential	Updated document for v1.2022110
1.2022012-01	28 October 2022	Non-Confidential	Documentation update 1 for v1.2022012
1.2022012-00	23 September 2022	Non-Confidential	Updated document for v1.2022012
1.2022011-00	22 July 2022	Non-Confidential	Updated document for v1.2022011
1.2022010-00	21 June 2022	Non-Confidential	New document for v1.2022010 Beta

Change history

The functional changes to the User-based licensing license server are described in License server release history.

Conventions

The following subsections describe conventions used in Arm documents.

Glossary

The Arm Glossary is a list of terms used in Arm documentation, together with definitions for those terms. The Arm Glossary does not contain terms that are industry standard unless the Arm meaning differs from the generally accepted meaning.

See the Arm Glossary for more information: developer.arm.com/glossary.

Typographic conventions

Arm documentation uses typographical conventions to convey specific meaning.

Convention	Use
italic	Citations.
bold	Interface elements, such as menu names. Terms in descriptive lists, where appropriate.

Convention	Use
`monospace`	Text that you can enter at the keyboard, such as commands, file and program names, and source code.
`monospace underline`	A permitted abbreviation for a command or option. You can enter the underlined text instead of the full command or option name.
`<and>`	Encloses replaceable terms for assembler syntax where they appear in code or code fragments. For example: `MRC p15, 0, <Rd>, <CRn>, <CRm>, <Opcode_2>`
SMALL CAPITALS	Terms that have specific technical meanings as defined in the *Arm® Glossary*. For example, **IMPLEMENTATION DEFINED**, **IMPLEMENTATION SPECIFIC**, **UNKNOWN**, and **UNPREDICTABLE**.

We recommend the following. If you do not follow these recommendations your system might not work.

Your system requires the following. If you do not follow these requirements your system will not work.

You are at risk of causing permanent damage to your system or your equipment, or harming yourself.

This information is important and needs your attention.

A useful tip that might make it easier, better or faster to perform a task.

A reminder of something important that relates to the information you are reading.

Useful resources

This document contains information that is specific to this product. See the following resources for other useful information.

Access to Arm documents depends on their confidentiality:

- Non-Confidential documents are available at developer.arm.com/documentation. Each document link in the following tables goes to the online version of the document.
- Confidential documents are available to licensees only through the product package.

Arm product resources	Document ID	Confidentiality
User-based Licensing at Arm Developer	-	Non-Confidential
User-based Licensing Migration Guide	109727	Non-Confidential
User-based Licensing User Guide	102516	Non-Confidential
User-based Licensing: Access control lists video tutorial	-	Non-Confidential
User-based Licensing: Accessing the Arm License Portal video tutorial	-	Non-Confidential
User-based Licensing: Cloud-based Licenses and Activation Codes video tutorial	-	Non-Confidential
User-based Licensing: Local License Server Setup video tutorial	-	Non-Confidential
User-based Licensing: Removal of Licenses and Decommissioning Server video tutorial	-	Non-Confidential