



User-Based Licensing

Version 1.1

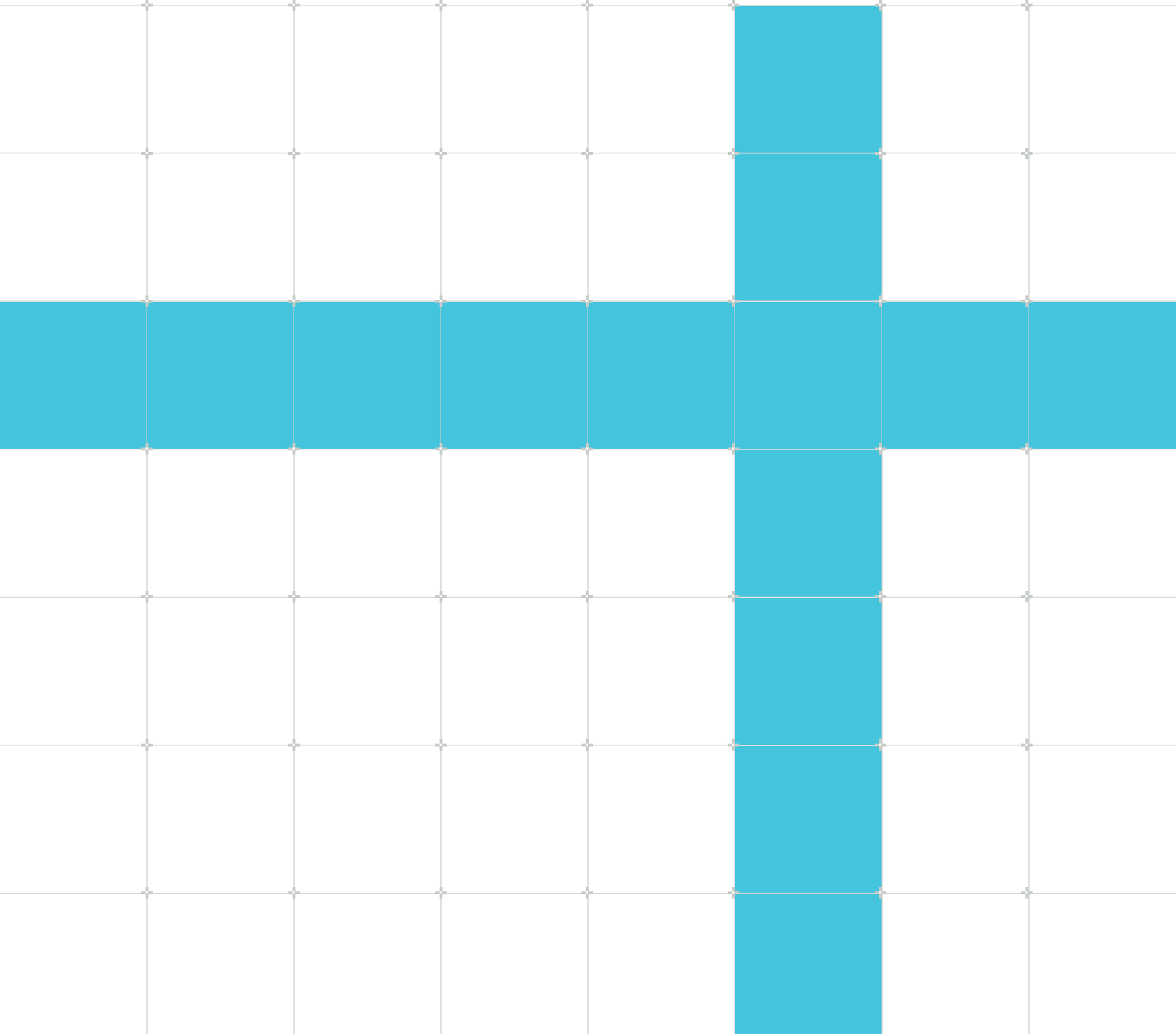
User Guide

Non-Confidential

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User-Based Licensing

User Guide

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Product Status

The information in this document is for a Beta product, that is a product under development.

Feedback

Arm® welcomes feedback on this product and its documentation. To provide feedback on the product, create a ticket on <https://support.developer.arm.com>

To provide feedback on the document, fill the following survey: <https://developer.arm.com/documentation-feedback-survey>.

Inclusive language commitment

Arm values inclusive communities. Arm recognizes that we and our industry have used language that can be offensive. Arm strives to lead the industry and create change.

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

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1. Introduction

User-Based Licensing (UBL) binds the entitlement to use Arm software products to the user. This allows a single user license to be used for the same product on multiple devices.

1.1 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
<i>italic</i>	Citations.
bold	Interface elements, such as menu names. Signal names. Terms in descriptive lists, where appropriate.
monospace	Text that you can enter at the keyboard, such as commands, file and program names, and source code.
monospace bold	Language keywords when used outside example code.
monospace <u>underline</u>	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: <pre>MRC p15, 0, <Rd>, <CRn>, <CRm>, <Opcode_2></pre>
SMALL CAPITALS	Terms that have specific technical meanings as defined in the <i>Arm® Glossary</i> . For example, IMPLEMENTATION DEFINED , IMPLEMENTATION SPECIFIC , UNKNOWN , and UNPREDICTABLE .
 Caution	Recommendations. Not following these recommendations might lead to system failure or damage.
 Warning	Requirements for the system. Not following these requirements might result in system failure or damage.

Convention	Use
 Danger	Requirements for the system. Not following these requirements will result in system failure or damage.
 Note	An important piece of information that needs your attention.
 Tip	A useful tip that might make it easier, better or faster to perform a task.
 Remember	A reminder of something important that relates to the information you are reading.

1.2 Other information

See the Arm website for other relevant information.

- [Arm® Developer](#).
- [Arm® Documentation](#).
- [Technical Support](#).
- [Arm® Glossary](#).

2. User-Based Licensing overview

User-based licensing binds the entitlement to use Arm software products to the user. A user is entitled to use an Arm software product license with no limits on concurrent usage, including using the same product on multiple devices. For example, you could use a single license with a service account to automatically build and test your products with Arm software products on any number of devices.

The user can obtain a license using one of the following methods:

- Entering an activation code
- Accessing a license server that is managed by a local administrator



This approach is different from the previous Arm® licensing models; node-locked and floating licensing.

2.1 Backwards compatibility

User-Based Licensing does not apply to Arm software products released before 2022.

Releases from 2022 are going to gradually adopt user-based licensing, in addition to existing node-locked and floating licensing implementations.

2.2 Interoperability with previous software licensing implementations

You can use a combination of Arm software products with user-based and other pre-existing licensing implementations, on the same device or the same network.

Arm software products that implement user-based licensing automatically choose user-based licensing over other technologies, as long as a valid user-based license is found. Otherwise, Arm software products use pre-existing licensing implementations.

2.3 License lifecycle for user-based licensing

Configuring and using Arm software products that implement user-based licensing are split into the phases activation, use, and deactivation.

The details of these phases are:

1. Product activation. Configures licensing for a specific Arm software product and user, on a device. Activating a product creates a license in the local storage for the device. This cached license is valid for 30 days. For further details see:
 - See [Activate your product using an activation code](#)
 - See [Activate your product using a license server](#)
2. Product use. When your Arm software product runs, it checks your entitlement to use the product by connecting to the license server or activation code URL. If the product cannot connect to the license server or activation code URL, the cached license in the device local storage is used. As long as the cached license remains valid, unmet network requirements are not reported.

Each day your product runs, the product automatically attempts to renew the cached license for another 30 days.

3. Product deactivation. Removes the entitlement of a user to use an Arm software product on a device. See [Deactivate your product](#) for more details.

2.4 Network requirements for user-based licensing

Describes the network requirements for Arm user-based licensing.

The phase of the license [lifecycle](#) require network access:

- Product activation requires network access to enable delivery of a license to the device local storage
- Product use requires network access at least once every 30 days to renew the license
- Product deactivation does not require network access, as the product is only deactivated locally

The network access required depends on the type of licensing used; activation code or license server.



Users can work completely offline when using license keys, for further details see [Activate your product if your device is offline](#).

Network requirements for activation codes

Users require access to the following URLs:

- <https://api.arm.com/p-software-licensing>
- <https://arm.compliance.flexnetoperations.eu/instances>

A simple way to check whether you have access to these resources is to copy and paste the above URLs above into the address field of your web browser:

- A successful test returns a 404 Not Found error, which means the end-point responded.

- A failed test returns a non-404 error, such as, connection timeout, server unreachable, and so on. If this happens, check to see if a firewall is preventing access to these websites.

Network requirements for license server

Users require access to the user-based licensing license server set up by your local administrator.

2.5 User-Based Licensing terminology

Describes the terms used in Arm® user-based licensing documentation.

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

Activation

The act of fulfilling an entitlement for a specific user. The output of an activation is a license.

Activation code

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

Cached license

The locally stored license information. This license is valid for 30 days but is extended when your Arm product successfully connects to the license server or activation code URL.

Device

Generic term for all computing devices capable of running Arm software products. This 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 product software.

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 software product.

License server

A local server used to activate licenses.

Node-locked

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

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 software product is installed or run.

Service account

The operating system account that coordinates the automated use of the software.

User

A generic term used to identify the entity interacting with the Arm product software; 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 software product.

3. Using user-based licensing

Describes how you can activate a user-based licensing license on a local device using an activation code or a license server. Also describes how to deactivate a license on your local device.

Arm product contain an `armlm` command-line utility to perform license management functions, like activation and deactivation. This utility is typically located with other executables for that product, for example in the `bin` directory at the product installation location.

3.1 Activate your product using a license server

To enable your Arm® software product to work with your user-based product entitlement, you must activate your product. This topic describe how to activate your product using a license server.

Before you begin

- Install your Arm product.
- The user-based licensing license server administrator must provide the URL to access the license server and the Arm product code to use.

About this task

- You can activate a product on multiple devices with the same activation code using the same username.
- Sharing the same username for more than one user is not permitted by your license agreement.

For details of activation using an activation code see [Activate your product using an activation code](#).

Procedure

Run the following command to activate a product using a code:

```
armlm activate --server <URL> --product <product_code>
```

Where:

- `<URL>` is the URL to access the license server
- `<product_code>` is the product code for the required product

Next steps

After activation, the license is bound to the username of the end-user or service account for a maximum of 30 days. Any time you use the Arm product that supports user-based licensing on the same device, the software attempts to extend the license for the next 30 days by contacting the license server. If the license cannot be extended, for example there is no connection to the license server, the product can still be used as licensed until the 30-day limit expires.

3.2 Activate your product using an activation code

To enable your Arm® software product to work with your user-based product entitlement, you must activate your product. This topic describe how to activate your product using a product code.

Before you begin

- Install your Arm product.
- For each end-user and service account, Arm or your license administrator provides you with an activation code. An activation code is a sequence of letters and digits that have the following pattern, where x represents any letter or digit:

```
xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
```

An activation code is not associated with any user or service account until its first use in the product activation process.

About this task

- You can activate a product on multiple devices with the same activation code using the same username.
- Sharing the same username for more than one user is not permitted by your license agreement.

For details of activation using a license server see [Activate your product using a license server](#) and for details of how to activate an offline device using an activation code see [Activate your product if your device is offline](#).

Procedure

Run the following command to activate a product using a code:

```
armlm activate --code <activation_code>
```



If by error, you activated the license with an incorrect username, contact your license administrator to revoke the activation code and generate a new one.

Next steps

After activation, the license is bound to the username of the end-user or service account for a maximum of 30 days. Any time you use the Arm product that supports user-based licensing on the same device, the software attempts to extend the license for the next 30 days by contacting the licensing URLs (for details see [Network requirements for user-based licensing](#)). If the license cannot be extended, for example there is no connection to the URLs, the product can still be used as licensed until the 30-day limit expires.

3.3 Activate your product if your device is offline

Your device may not be able to access the networks required for activation using an activation code or license key. In this case, you can use this process to activate an offline device using an activation code.

Before you begin

- Install your Arm product.
- For each end-user and service account, Arm or your license administrator provides you with an activation code. An activation code is a sequence of letters and digits that have the following pattern, where x represents any letter or digit:

```
xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx
```

An activation code is not associated with any user or service account until its first use in the product activation process.

About this task

- You can activate a product on multiple devices with the same activation code using the same username.
- Sharing the same username for more than one user is not permitted by your license agreement.

For details of network requirements see [Network requirements for user-based licensing](#).

Procedure

1. From another device that does meet the network requirements, generate a transfer file using the following command to create a file to transfer the license information:

```
armlm activate --code <activation_code> --as-user <user_name> --to-file  
<transfer_filename>
```

Where:

- <user_name> is the name of the user that will use the Arm product on the offline device
 - <transfer_filename> is any file name for the transfer file
2. Move the generated transfer file to the target device.
 3. Activate the product using the following command:

```
armlm import --file <transfer_filename>
```

Next steps

You must repeat this process every 30 days, otherwise the product ceases to function.

3.4 Deactivate your product

Deactivating a product removes the license for your Arm® software product from a device.

About this task

Deactivating is required when you want to activate a different product with overlapping capabilities, for example when upgrading from an evaluation to a full product. Deactivating might also be required to investigate license configuration issues.



- There is no need to deactivate your product when using your Arm product on a different device. The license is associated with the user and not the devices the license is used on.
- Deactivating a license is an activity local to your device. It does not affect the reservation of the corresponding license seat on the license server.

Procedure

You can deactivate your license using an activation code or the product code:

- Deactivate an activation code license using the following command:

```
armlm deactivate --code <activation_code>
```

- Deactivate a license server license using the following product code:

```
armlm deactivate --product <product_code>
```



You can find your product code using the `armlm inspect` command.

4. Diagnose licensing issues with user-based licensing error codes

Arm software products enabled by user-based licensing might report errors. Each error related to user-based licensing has a corresponding unique error code as described in the following sections.

Error codes allow you to troubleshoot a problem with your license. Using the various error codes and their descriptions, you can quickly determine a solution for your licensing problem.



When contacting Arm support, include the output of `arm1m inspect` from your console.

4.1 100 - No license found

License information for your application could not be found. License information for other products might also be present.

You must activate your product using the information that was sent to you.

If you did not receive the instructions, then contact your license administrator or support representative for information.

4.2 101 - Product activation conflict

Product activation conflict detected when renewing licenses in your local storage.

A license for another Arm software product with overlapping capabilities is present in the local storage. This overlap can happen when the license definition is updated by Arm and now conflicts with the product that you activated.

To resolve this error, contact your support representatives.

4.3 200 - Expired cached license

The cached license information expiry date for the license has elapsed and could not be refreshed from the license server. This error occurs when the network requirements are not met for the preceding 30 days.

To resolve this error, ensure that you meet the network requirements and restart your Arm-licensed product.

For license key users, if your device cannot meet the network requirements, you can activate the license using another networked device. For details see [Activating on a device which cannot meet the network requirements](#).

4.4 201 - Support and maintenance contract expired

You cannot use this specific version of the Arm software product because your support and maintenance entitlement has expired.

To resolve this error, renew your support and maintenance contract through your usual sales channel.

4.5 202 - Expired license

You can no longer use the Arm software product because the associated product entitlement has expired.

To resolve this error, renew your product entitlement through your usual sales channel.

4.6 300 - Corrupted license

The cached license information on your workstation is corrupted or has been tampered with.

This issue is caused when the licensing information that is cached on your workstation is corrupted. The licensing file can also be corrupted if unauthorized editing of the license file is attempted.

To resolve this issue, reactivate your product.

If reactivating your product does not solve your issue, then contact your license administrator or support representative.

4.7 301 - Corrupted license storage

Your local license storage is corrupted or has been tampered with.

To resolve this error:

1. Find the location of the local license storage directory. By default, it is in the `user` home location, under the `.arm1m` directory.



You might have overridden the default location by setting the `ARMLM_CACHED_LICENSES_LOCATION` environment variable.

2. Make a backup copy of the local license storage directory.
3. Delete the local license storage directory.
4. Reactivate your Arm software product.

If reactivating your product does not solve your issue, then contact your support representative with the backup copy of your local license storage directory.

4.8 400 - Unauthorized user

The `username` associated with the runtime process of your Arm software product does not match the information in the cached license. This mismatch can happen if you copied the local license storage from another user. It can also occur if you changed the default location by setting the `ARMLM_CACHED_LICENSES_LOCATION` environment variable to a directory populated with license information for another user.

To resolve this error:

1. Find the location of the local license storage directory. By default, it is in the `user` home location, under the `.arm1m/` directory.
2. Make a backup copy of the local license storage directory.
3. Delete the local license storage directory.
4. Reactivate your Arm software product.

4.9 500 - Unexpected error

Your application has encountered an unexpected error with licensing.

Diagnostic messages and logs accompanying this error can help you investigate the issue.

Contact your license administrator or support representative with any diagnostic message or log file.

4.10 501 - Library communication error

Your application has encountered a licensing library communication error.

Reinstall your application to resolve this issue.

If you still have issues, contact your license administrator or support representative for help with this error.