Licensing Guide

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Introduction

Ansys, Inc. uses the FlexNet license manager for all its licensed products. This guide provides you with the instructions necessary to configure the client-side license manager settings.

Supported Hardware Platforms

- Linux x64 (linx64)
- Windows x64 (winx64)

For specific operating system requirements, refer to the installation guide for the platform you are running. For platform support information, see the Platform Support section of the Ansys Website.

Summary of New and Changed Features

Listed below is a summary of those licensing items that are either new or have been changed since the last release. For a list of all major new and changed features of any product, see the *Release Notes* document for that product.

- The Ansys License Manager has been updated to FlexNet Publisher client version 11.19.5.0 and server version: 11.19.5.1.
- The Ansys License Manager has been updated to OpenSSL version: 3.0.14.
- The Ansys License Manager has been updated to Java version: 17.0.13.11.
- The Ansys License Manager has been updated to Tomcat version: 10.1.28.
- The Ansys License Manager supports user specific license settings that enable users to change settings without administrator privileges.
- License server logs have been improved to include helpful diagnostic information.

1. Understanding Ansys Common Licensing

Ansys Common Licensing (ACL) creates direct communication from all Ansys applications to the FlexNet Publisher server. ACL is launched when an application makes its first licensing call and continues to run until all connected clients exit. By default, ACL uses a random port to listen to all clients. ACL can be configured to use ports from user specified range. To configure ACL to use a specific port, see Specifying a Port for Ansys Common Licensing (p. vi).

There is one ACL per process tree, meaning the parent and all the children connect to the same ACL launched by the parent.

1.1. License Sharing with Ansys Common Licensing

By default, licenses are shared in a parent/child process tree. Ansys Common Licensing follows parent/child/max logic. Here are a few examples of this logic:

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- If the parent checks out the increment "meba" and the child tries to check out the same increment "meba" then the net result is there is only one increment "meba" consumed from the license server/pool.
- If the parent checks out increment "meba" and the child tries to check out the 2 counts of the same increment "meba" then the net result is there are two tasks of "meba" consumed from the license server/pool. This is an example of max logic
- If the parent checks out 1 count of the increment "meba" N number of times, then the net result is there is only increment "meba" consumed from the licensing server/pool.

Parent/Child across machines/process tree: This process enables the parent child sharing for the specified license features with child being on a different machine.

User Host Display: This process enables applications to share the same listed features across multiple instance of the applications for a specific user tied to the host/display.

HPC Parametric Sharing: HPC parametric sharing enables applications to use a single solver license and anshpc_pack or 8 anshpc features for each additional variance. This also allows applications to share anshpc_pack increments for core checkouts from the solves started as variances of the same context. For more information on HPC Licensing, see HPC Licensing (p. 33).

Note:

Queuing is not supported in any type of license sharing.

1.2. Specifying a Port for Ansys Common Licensing

You can use the ANSYS_LICENSING_DESKTOP_PORT_RANGE keyword to configure Ansys Common Licensing to communicate using a specific port or port range. This keyword can be added as an ansyslmd.ini file entry or as environment variable.

Format:

ANSYS_LICENSING_DESKTOP_PORT_RANGE=<Min Range:Max Range>

Example:

The following example causes ACL to use a port in the range of 5000 to 5100.

```
ANSYS_LICENSING_DESKTOP_PORT_RANGE=5000:5100
```

2. Licensing Prerequisites for Running Ansys Products

When running Ansys Products Release 2025 R1 or newer, your license server must be using a minimum of Ansys License Manager Release 2024 R1.03. Additionally, the client systems must be pointing to the license server, using an FlexNet Publisher binaries equal to or greater than v11.19.5.0 on the license server.

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Chapter 1: Ansys Licensing Settings Utility

This chapter explains how to use the **Licensing Settings utility** to configure connections with both FlexNet Publisher and Elastic Licensing servers. The **Licensing Settings utility** is installed automatically when the product is installed; you do not have to take any further steps to run as a client if you have installed a product.

1.1. Understanding the ansyslmd.ini File

A number of the options in the **Ansys Licensing Settings utility** modify the `ansyslmd.ini` file that is located in the licensing directory. Because of this, it is generally a good idea to have an understanding of the contents and purpose of the file. Entries in the `ansyslmd.ini` file tell Ansys, Inc. products which license server(s) to query to find a valid license. Using this option allows all users at your site to use this setting without having to individually set the **ANSYSLMD_LICENSE_FILE** environment variable to specify the license server machine(s). It also eliminates the need to have a copy of the license file on every system at your site. Additionally, if you are using Ansys Elastic Licensing, the `ansyslmd.ini` file contains your Cloud License Server ID (CLSID) and pin (CLSPIN).

1.1.1. `ansyslmd.ini` Server Entries

The order that the SERVER lines are listed in the `ansyslmd.ini` file dictates the order in which the license servers are queried when attempting to check out a license.

You are not limited to designating one set of license server machines for your network. You can have multiple single-server or three-server (redundant triad) licensing systems on your network. In this situation, you would have certain licenses connected to a set of server machines (one or three) on the network, and other licenses connected to a different set of server machines (one or three) on the network.

Each server's specification entry in this file will typically begin with SERVER= to specify the server port numbers.

On a single server:

```
SERVER=<flexnetport>@<host>
```

For multiple single servers, each server should have its own SERVER= lines.

On redundant (triad) servers on Linux platforms:

```
SERVER=<flexnetport>@<host1>:<flexnetport>@<host2>:<flexnetport>@<host3>
```

Windows platforms use semicolons (;) instead of colons:

```
SERVER=<flexnetport>@<host1>;<flexnetport>@<host2>;<flexnetport>@<host3>
```

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Do not use commas as separators; use colons (:) on Linux machines and semicolons (;) on Windows machines.

You must use the port@host format; you cannot enter a path or a filename in place of the hostname.

Modifying the Server Order:

You can use the **ANSYSLMD_LICENSE_FILE** environment variable to supersede the existing server configuration. The servers that are defined in the **ANSYSLMD_LICENSE_FILE** environment are added to the beginning of the server path.

For example, if your ansyslmd.ini file contains the line SERVER=server1;server2 and and your **ANSYSLMD_LICENSE_FILE** environment variable contain server3 and server4, your server path will be server3, server4, server1, server2.

If you set the **ANSYSLMD_LICENSE_FILE** environment variable on a three-server (redundant) system, specify all three systems in the same order as the SERVER lines are listed in the license file. If you specify only the master and it is down, you could see a "License Server Down" or "No License Found" message and the search for a license could fail. Join redundant or multiple single server systems by separating the system names with colons on Linux systems and semicolons on Windows systems.

1.1.2. `ansyslmd.ini` Elastic Licensing Entries

The ANSYS_ELASTIC_CLS entry contains your computer's CLSID and CLSPIN. This entry is appended to your `ansyslmd.ini` file when you add or update them by using the options in the **Ansys Licensing Settings utility**. For more information, see Changing the Elastic Licensing PIN .

```
ANSYS_ELASTIC_CLS=<CLSID>:<CLSPIN>
```

Alternatively, if you are comfortable modifying the text in the `ansyslmd.ini`, you can enter the CLSID and CLSPIN manually.

1.2. Using the Ansys Licensing Settings Utility

To run **Licensing Settings utility** on Windows, choose **Start> Ansys 2025 R1> Ansys Licensing Settings 2025 R1**.

To run the utility on Linux, type the following:

```
/ansys_inc/v251/licensingclient/linx64/LicensingSettings
```

Understanding the Ansys Licensing Settings Utility User Mode

The **Ansys Licensing Settings** utility contains an option to allow you to customize your settings to suit your individual needs. In the upper right-hand corner of the **Ansys Licensing Settings** utility interface is a dropdown menu with the options **Installation** and **User**.

When this menu is set to **Installation**, the **Ansys Licensing Settings** utility uses the global settings that were defined during installation.

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When set to **User**, the **Ansys Licensing Settings** utility uses the user-specific settings that have been defined and saved for an individual user. The user-specified settings are stored in a new user-specific ansyslmd.ini file created in one of the following locations:

- **Windows:** %AppData%\.ansys_licensing\ansyslmd.ini
- **Linux:** ${HOME}/.ansys_licensing/ansyslmd.ini

Ansys Common Licensing (ACL) gets a value for a given setting in this order:

1. ACL starts by attempting to retrieve the value from an environment variable.
2. If ACL does not find the value in an environment variable, it attempts to retrieve the value from the settings in the new user-specific ansyslmd.ini file.
3. If ACL does not find the value in the user-specific ansyslmd.ini file, it defaults to the value in the global installation settings.

Caution:

When switching from the **Installation** to the **User** option, the utility-wide default settings are displayed but are not active until you have selected, changed, and saved each of them. Until settings are individually selected and saved, the global settings that were defined during installation are used. Each setting is independent of all other settings and must be configured and saved individually. For example, after switching to **User** mode, the FlexNet Publisher License Servers option is displayed as disabled (not enabled) but this setting is not truly set until you either switch the option to **Enabled** and **Save** (to enable the setting) or switch the option to **Enabled** then back to **Disabled** and then **Save** (to disable the setting).

Refer to the links below for instructions on using the list of options in the utility.

1.2.1. Defining FlexNet Publisher License Servers
1.2.2. Displaying Features Usage
1.2.3. Borrowing Licensing Increments
1.2.4. Operations on Shared Web Licenses
1.2.5. Enabling Elastic Licensing
1.2.6. Configuring a Proxy Server
1.2.7. Setting License Service Priority
1.2.8. Setting HPC User Preferences
1.2.9. Gathering Diagnostics

Command Line Interface Options

Log in to and out of your Ansys ID account:

```
LicensingSettings account login
```

```
LicensingSettings account logout
```

Options:

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--help Show help [boolean]

--token Token file or string [string]

--input Login with the token file generated on the AnsysID portal

Examples:

```
LicensingSettings account login --input "path/to/file.json"
```

Login using a token from a file.

```
LicensingSettings account login --token "TOKEN STRING"
```

Login using a token string.

```
LicensingSettings account login
```

Log into your Ansys ID account. If already logged in, show logged-in user details.

```
LicensingSettings account logout
```

Log out of the currently signed in account.

1.2.1. Defining FlexNet Publisher License Servers

You are asked to specify your license server during the product installation if you have not done so during a previous product installation. If you did not specify your license server during the product installation, or if your license server has changed, use the **FlexNet Publisher > License Servers** option to define the FlexNet Publisher server, default communications port and usage order.

This information is stored in the **ansyslmd.ini** file. The information contained in this ansyslmd.ini file is used by globally by all users.

- To enable FlexNet publisher, toggle the **Enabled** option.
- To add license servers, click the "plus" icon (located below the existing servers) and enter the communications port and server hostname(s) then click **Test** to verify the configuration. If the server is available, a green check mark is displayed to the right of the server information. Click **Save** to complete this process.

  Note:

  To specify redundant triad servers, enter the hostname for each of the three servers in the spaces available.

- To remove a license server, click the "minus" icon to the left of the appropriate server and then click **Save** to complete this process.
- To adjust the order of the servers in your list, click and hold the "double arrow" icon to the left of the appropriate server and drag the selection to the new postion within your list. Click **Save** to

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complete this process. The order of the servers dictates the order in which they are queried when attempting to check out a license.

Note:

Unresponsive servers can slow the license check-out process. If a license server is likely to be offline or otherwise unresponsive for an extended time, consider removing it from the list.

Command Line Interface Options

Enable FlexNet Publisher:

```
LicensingSettings fnp enable
```

Options:

--help Show help [boolean]

Mode:

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Example:

LicensingSettings fnp enable --mode user

Disable FlexNet Publisher:

```
LicensingSettings fnp disable
```

Options:

--help Show help [boolean]

Mode:

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Example:

LicensingSettings fnp disable --mode user

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Add FlexNet Publisher license server(s) to an existing configuration:

```
LicensingSettings fnp server add
```

Options:

--help Show help [boolean]

--input Add FlexNet Publisher license server(s) to existing configuration [required]

Mode:

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Examples:

```
LicensingSettings fnp server add --input 1055@server1 --mode user
```

Adds 1055@server1 to the end of the servers list.

```
LicensingSettings fnp server add --input 1055@server1,1055@server2 --
mode installation
```

Adds 1055@server1 and 1055@server2 to the end of the servers list.

```
LicensingSettings fnp server add --input 1055@server1:server2:server3
--mode user
```

Adds the triad 1055@server1, 1055@server2, 1055@server3 to the end of the servers list.

Remove FlexNet Publisher license server(s) from an existing configuration:

```
LicensingSettings fnp server remove
```

Options:

--help Show help [boolean]

--input The server(s) to be removed from the configuration

--all Remove all the FlexNet Publisher license servers from existing configuration

Mode:

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

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required: true

Examples:

```
LicensingSettings fnp server remove --input 1055@server1 --mode user
```

Removes 1055@server1 from the configured server list.

```
LicensingSettings fnp server remove --input 1055@server1,1055@server2
--mode user
```

Removes 1055@server1 and 1055@server2 from the configured server list.

```
LicensingSettings fnp server remove --input 1055@server1:1055@serv-
er2:1055@server3 --mode user
```

Removes the triad 1055@server1, 1055@server2, 1055@server3 from the configured server list.

```
LicensingSettings fnp server remove --all
```

Removes all servers from the list.

List configured FlexNet Publisher license server(s):

```
LicensingSettings fnp server list
```

Options:

--help Show help [boolean]

Set FlexNet Publisher license server(s), removing the previous configuration:

```
LicensingSettings fnp server set
```

Options:

--help Show help [boolean]

--input Set FlexNet Publisher license server(s), removing any previous configuration [string] [required]

Mode:

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Examples:

```
LicensingSettings fnp server set --input 1055@server1 --mode user
```

Sets 1055@server1 as license server.

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```
LicensingSettings fnp server set --input 1055@server1,1055@server2 --
mode installation
```

Sets 1055@server1 and 1055@server2 as license servers.

```
LicensingSettings fnp server set --input 1055@server1:server2:server3
--mode user
```

Sets the triad of 1055@server1, 1055@server2, 1055@server3 as license server.

1.2.1.1. Defining FlexNet Publisher User-Specific License Servers

In cases where you require user-specific license server, you can create a new user-specific ansyslmd.ini file that supports this information. To do this:

1. Open the **Ansys Licensing Settings utility** and select the **License Servers** option.
2. Set the dropdown menu, located in the upper right-hand corner of the display to **User**.
3. Click the "plus" icon (located below the existing servers) and enter the communications port and server hostname(s) then click **Test** to verify the configuration. If the server is available, a green check mark is displayed to the right of the server information.
4. Click **Save** to complete this process.

A new user-specific ansyslmd.ini file is created in the following location:

- **Windows:** %AppData%\.ansys_licensing\ansyslmd.ini
- **Linux:** ${HOME}/.ansys_licensing/ansyslmd.ini

When using the FNP server path settings - if using ANSYSLMD_LICENSE_FILE as env then one of the ini settings are also considered, either the user ini or the global ini.

1.2.2. Displaying Features Usage

Click the **FlexNet Publisher > Features in Use** option to display all features that are currently being used. This option displays:

- The license server name
- Current license file in use
- Available license features
- Available licenses per feature
- Licenses used per feature

Command Line Interface Options

Get license feature status:

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```
LicensingSettings fnp server in-use
```

Options:

--help Show help [boolean]

1.2.3. Borrowing Licensing Increments

Click the **FlexNet Publisher > Borrowing** option to display a drop-down menu containing a list of borrowable licensing increments (available only on Windows machines). License borrowing allows you to take a license for use while not connected to the network.

Note:

This feature is available after defining a FlexNet server.

To borrow license increments:

1. From the **Borrowing** page, select the license increments you wish to borrow from the **Borrowable Increments** drop-down menu.
2. Set the return date for each increment.
3. When you have finished selecting your increments and setting the dates for each, click **Borrow**.
4. When you are finished with the license increments, return to the **Borrowing** page and click **Return** for the appropriate increment or **Return All** to return all increments.

Command Line Interface Options

Borrow a License Increment from the License Server List:

```
LicensingSettings fnp borrow checkout
```

Options:

--help Show help [boolean]

--input Specify the increments to borrow from license server [required]

--expiry Expiration/return date [required]

Mode

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Example:

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```
LicensingSettings fnp borrow checkout --input
"cfd_solve_level1","cfd_solve_level2" --expiry 2022-10-03 --mode user
```

Borrows the increments "cfd_solve_level1" and "cfd_solve_level2" from license the server.

Return a license increment from the license server list:

```
LicensingSettings fnp borrow checkin
```

Options:

--help Show help [boolean]

--input Specify the borrowed increments to return to license server

--all Return all borrowed increments to license server

Example:

```
LicensingSettings fnp borrow checkin --input
"cfd_solve_level1","cfd_solve_level2"
```

Returns "cfd_solve_level1" and "cfd_solve_level2" to license the server.

Get a list of currently borrowed increments:

```
LicensingSettings fnp borrow in-use
```

Options:

--help Show help [boolean]

List increments available for borrowing:

```
LicensingSettings fnp borrow list
```

Options:

--help Show help [boolean]

1.2.4. Operations on Shared Web Licenses

Click the **Web Licensing > Shared** option to display a list of Shared Web product licenses. Products are displayed along with the related "customers" (accountid). Multiple products with the same name, but with different customers, can be displayed.

License roaming allows you to take a license for use while not connected to the network. It is similar to Borrowing with FlexNet Publisher licenses.

To roam with Shared Web product licenses:

1. From the **Shared** page, select the **Roaming** option.
2. A list of available Shared Web product licenses is displayed. Click the **Check Out** button for the appropriate product.

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3. A dialog box is displayed, allowing you to select the number of product licenses you require and the return date for the licenses.
4. When you have selected the number of licenses and the return date, click **Check Out**.
5. Perform the above steps for all Shared Web product licenses you wish to roam with.
6. When you are finished with the licenses, return to the **Shared** page and click **Return** for the appropriate licenses or **Return All** to return all licenses.

JSON File Property Specifications

accountId: The customer account to which this product is entitled.

available: The quantity of this product available to be checked out for the logged in Ansys ID account.

id: A unique identifier for a particular license entitlement. Can be used to checkout or checkin a specific product from a specific customer account.

name: Product name

partNumber: Product SKU

total: The maximum quantity potentially available for the logged in Ansys ID account.

version: The maximum version of client software this product license supports.

Command Line Interface Options

Enable Shared Web licensing:

```
LicensingSettings web shared enable
```

Options:

--help Show help [boolean]

Disable Shared Web licensing:

```
LicensingSettings web shared disable
```

Options:

--help Show help [boolean]

Roaming with a Shared Web Licenses:

```
LicensingSettings web shared products checkout
```

Options:

--help Show help [boolean]

--input Check out products specified in file

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--name Name of the product to checkout

--count Count of the product to checkout, mandatory for each product name

--expires Expiry of the products in ISO8601 format date or duration [string]

Examples:

```
LicensingSettings web shared products checkout --name "Example Name 1"
--count 234 --name "Example Name 2" --count 24 --expires "P3DT4H59M"
```

Checkout products using the CLI.

```
LicensingSettings web shared products checkout --input 'path/to/in-
put/file.json'
```

Checkout products listed in a file.

The file should be a valid of valid JSON structure with following format:

```
{
  "products": [
    {
      "name": "Example Name",
      "count": 23
    },
    {
      "partNumber": "PARTNUMBER",
      "count": 343
    },
    {
      "id": "ID",
      "count": 23
    }
  ],
  "expires": "ISO8601 format date or duration"
}
```

The 'expires' field is optional; if not specified, existing checkout date will be used, in absence of which the default duration from the server will be used.

If multiple 'expires' are specified, the last one will be used for the checkout.

Return a Shared Web License:

```
LicensingSettings web shared products checkin
```

Options:

--help Show help [boolean]

--input Check in products specified in file

--all Check in all products of specified type

--name Check in products by name

--type Specify the type of products to checkin [choices: "roaming", "on-demand"]

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Mode

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Example:

```
LicensingSettings web shared products checkin --name "Example Name 1"
--name "Example Name 2" --type roaming
```

Check in some products of type 'roaming'.

```
LicensingSettings web products checkin --name "Example Name 1" --name
"Example Name 2" --type roaming --licenseModel "Named User" --mode user
```

Check in all roaming products.

```
LicensingSettings web products checkin --all --type roaming --mode user
```

Check in all on-demand products.

```
LicensingSettings web products checkin --type on-demand --all --mode
user
```

Check in products specified in input file, of type roaming.

The file should be a valid of valid JSON structure with following format:

```
{
  "products": [
    {
      "name": "Example Name"
    },
    {
      "partNumber": "PARTNUMBER"
    },
    {
      "id": "ID"
    }
  ]
}
```

Note that the file used for checkout can also be used here, but 'count' will not be honored.

Get a List of Shared Web Licenses:

```
LicensingSettings web shared products in-use
```

Options:

--help Show help [boolean]

--type Product usage type [string] [required] [choices: "roaming", "on-demand", "all"] [default: "all"]

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List Shared Web Licenses Available:

```
LicensingSettings web shared products list
```

Options:

--help Show help [boolean]

--output Get products list in the specified file [required]

Example:

The output would have product information in JSON structure with following format:

```
{
  "id": "Unique identifier for this license asset",
  "partNumber": "Product SKU",
  "accountId": "Customer account this product is entitled to",
  "name": "Product name",
  "version": "Maximum version of client software this product license supports",
  "available": "Quantity of this product available to be checked out for the logged in Ansys ID account",
  "total": "Maximum quantity potentially available for the logged in Ansys ID account"
}
```

1.2.5. Enabling Elastic Licensing

Click the **Elastic Licensing** option to enable elastic licensing and import your Elastic License Server and Elastic License Server PIN.

To enable elastic licensing:

1. Toggle the **Enabled** option.
2. Click **Import CLS ID and CLS Pin** and browse to the directory containing json file supplied by your elastic licensing administrator.
3. Select the file and click **Open**.
4. Click **Save**.

   This information is saved to your `ansyslmd.ini` file.

To disable elastic licensing:

1. Toggle the **Enabled** option.
2. Click **Save**.

To import new elastic server information:

If license administrator changes the PIN for the Elastic License Server, client-side users should perform the following steps.

1. From the **Elastic** page, click the **Import CLS ID and CLS Pin** button.
2. Browse to the directory containing json file supplied by your elastic licensing administrator.

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3. Select the file and click **Open**.
4. Click **Save**.

   Your `ansyslmd.ini` file is updated, and the ID and PIN are displayed in the **Ansys Licensing Settings utility**.

Command Line Interface Options

Enable Elastic Licensing:

```
LicensingSettings web elastic enable
```

Options:

--help Show help [boolean]

Mode

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Disable Elastic Licensing:

```
LicensingSettings web elastic disable
```

Options:

--help Show help [boolean]

Mode

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Print Elastic Licensing Settings:

```
LicensingSettings web elastic list
```

The output can be passed into the 'set' command.

Options:

--help Show help [boolean]

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Mode

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Example:

```
LicensingSettings web elastic list > tmp.json --mode user
```

Configuring Elastic Licensing Settings:

```
LicensingSettings web elastic set
```

Configure Elastic Licensing settings via specified input file.

Options:

--help Show help [boolean]

Example:

```
LicensingSettings web elastic set --input tmp.json
```

1.2.6. Configuring a Proxy Server

Click the **Web Licensing** > **Proxy** option to display the proxy server configuration window.

To use the local machine proxy settings on the Windows platform, enable the **Use machine proxy settings (Windows only)** option.

To specify a proxy server, enable the **Use specified proxy server** option and the enter the **Proxy Server Address**, **Username** and **Password** for the server.

Command Line Interface Options

Displaying current proxy settings:

```
LicensingSettings web proxy list
```

Options:

--help Show help [boolean]

Define Proxy Settings:

```
LicensingSettings web proxy set
```

Options:

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--help Show help [boolean]

--server Proxy server to be set (Example: https://localhost:8080). Use 'windows' to use Windows proxy settings. [required]

Examples:

```
LicensingSettings web proxy set --server windows
```

Set windows proxy as proxy server.

```
LicensingSettings web proxy set --server "http://<proxyserver>:<port>"
```

Set a proxy server via a URL (no authentication).

```
LicensingSettings web proxy set --server "http://<username>:<pass-
word>@<proxyserver>:<port>"
```

Set a proxy server via a URL (with authentication).

Test Proxy Settings:

```
LicensingSettings web proxy test
```

Options:

--help Show help [boolean]

--server Proxy server to test (Example: https://localhost:8080). Use 'windows' to test Windows proxy settings. [string] [required]

Examples:

```
LicensingSettings web proxy test --server windows
```

Test the windows proxy.

```
LicensingSettings web proxy test --server "http://<proxyserver>:<port>"
```

Test a proxy server via a URL (no authentication).

```
LicensingSettings web proxy test --server "http://<username>:<pass-
word>@<proxyserver>:<port>"
```

Test a proxy server via a URL (with authentication.)

Remove Proxy Settings:

```
LicensingSettings web proxy remove
```

Options:

--help Show help [boolean]

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1.2.7. Setting License Service Priority

Click the **Preferences > License service priority** option to display the order in which the licenses are utilized.

- To change the license service priority, click and hold the "double arrow" icon to the left of the appropriate license service and drag the selection to the new position within your list. **Elastic web** is always last and cannot be moved. After you have modified your list, click **Save** to retain your changes.

Command Line Interface Options

View the Current Priority of Licensing Services:

```
LicensingSettings preferences service list
```

Options:

--help Show help [boolean]

Set the Licensing Service Priority:

```
LicensingSettings preferences service set
```

Options:

--help Show help [boolean]

--input Set order of licensing services [choices: "FlexNet Publisher","Shared web","Elastic web"] [required]

Mode

description: 'Specify the LSU mode'

choices: ["user", "installation"]

type: "string"

required: true

Examples:

```
LicensingSettings preferences service set --input "Shared web","FlexNet
Publisher","Elastic web" --mode user
```

Set the order of licensing services.

Resetting Licensing Service Priority:

```
LicensingSettings preferences service reset
```

Options:

--help Show help [boolean]

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1.2.8. Setting HPC User Preferences

Click the **Preferences > HPC priority** option to display the HPC products that are available and the order in which HPC licenses are checked-out.

- To change the license priority, click and hold the "double arrow" icon to the left of the appropriate license and drag the selection to the new position within your list. After you have modified your list, click **Save** to retain your changes.
- To disable an HPC license, disable the check box to the left of the appropriate license and then click **Save**.

Command Line Interface Options

Enable an HPC License:

```
LicensingSettings preferences hpc enable
```

Options:

--help Show help [boolean]

--input HPC preference to enable [choices: Ansys HPC Pack,Ansys HPC,Ansys Discovery Ultimate Enterprise CPU Core Extension] [required]

Example:

```
LicensingSettings preferences hpc enable --input "Ansys HPC"
```

Enables “Ansys HPC”.

Disable an HPC Licensing:

```
LicensingSettings preferences hpc disable
```

Options:

--help Show help [boolean]

--input HPC preference to disable [choices: Ansys HPC Pack,Ansys HPC,Ansys Discovery Ultimate Enterprise CPU Core Extension] [required]

Example:

```
LicensingSettings preferences hpc disable --input "Ansys HPC"
```

Disables “Ansys HPC”.

List HPC License Priority:

```
LicensingSettings preferences hpc list
```

Options:

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--help Show help [boolean]

Set the HPC License Priority:

```
LicensingSettings preferences hpc set
```

Options:

--help Show help [boolean]

--input HPC preference to enable [choices: Ansys HPC Pack,Ansys HPC,Ansys Discovery Ultimate Enterprise CPU Core Extension] [required]

Example:

```
LicensingSettings preferences hpc set --input "Ansys HPC","Ansys HPC
Pack","Ansys Discovery Ultimate Enterprise CPU Core Extension"
```

Reset HPC License Priority:

```
LicensingSettings preferences hpc reset
```

Resets the HPC preferences to default state and order.

Options:

--help Show help [boolean]

Example:

```
LicensingSettings web elastic set --input tmp.json
```

1.2.9. Gathering Diagnostics

Clicking the **Diagnostics** option and then clicking **Generate** gathers various licensing-related files, logs and related information about your license client system and places them in a single directory as well as a compressed file. This feature is useful if you want to easily review the files from a single location, or if you need to send them to a technical support representative.

Command Line Interface Options

Gather Diagnostics:

```
LicensingSettings diagnostics
```

Options:

--version Show version

--help Show help [boolean]

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Chapter 2: End-User Configuration

This section contains licensing configuration instructions for Ansys Workbench and client environment variable settings used to modify licensing behavior on indivdual machines.

2.1. Migrating Custom User Licensing Preferences

For Ansys Workbench users, customized user licensing preferences (if present), are automatically migrated when you install a new Ansys release. For example, if you already have Ansys release 2024 R2 installed on your computer and you upgrade to release 2025 R1, your customized user licensing preferences (if present), are automatically migrated to the new version.

If you are using an Ansys product other than workbench, you can manually migrate your customized user licensing preferences by running the ansysli_util.exe file.

To run the ansysli_util.exe, follow the steps for your platform below:

Windows:

Where <Installation Directory> represents the path to the latest Ansys Product install, open an administrator command prompt window and issue the following command:

```
"<Installation Directory>\<Version Number>\licensingclient\winx64\ansysli_util.exe" -updateuserprefs -fromrevn <previous release>
```

Example:

```
"C:\Program Files\ANSYS Inc\v251\licensingclient\winx64\ansysli_util.exe" -updateuserprefs -fromrevn 251
```

Linux:

Where <Installation Directory> represents the path to the latest Ansys Product install, open a command line window and issue the following command:

```
"<Installation Directory>/<Version Number>/licensingclient/linx64/ansysli_util" -updateuserprefs -fromrevn <previous release>
```

Example:

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```
"/ansys_inc/v251/licensingclient/linx64/ansysli_util" -updateuserprefs -
fromrevn 251
```

Note:

For both the automatic and the manual user licensing preferences migration, ansysli_util reads the ansyslmd.ini file or the ANSYSLMD_LICENSE_FILE environment variables to determine the correct license server.

2.2. Ansys Workbench Licensing Methods

Ansys Workbench users can specify which of two licensing methods to use:

- Share a single license between applications (shared mode). The **Share a single license between applications if possible** is enabled by default in Ansys Workbench.
- Use a separate license for each application (separate mode) by disabling the **Share a single license between applications if possible** option in Ansys Workbench.

Single License Sharing

Ansys Workbench allows you to work across multiple instances of the same applications while consuming only one of a single type of license per user per session. Using shared licensing, the active application holds the license, preventing other applications that are sharing that same license increment/key from using it during that time. For example, trying to do multiple solves of same type at the same time would be a concurrent event.

Sharing licenses is tied to the license keys the application is using. For example, if the application is using license key "meba" then you cannot run other application instances or applications sharing the license key "meba" at the same time.

Single license sharing allows you to progress through your analysis, from specifying engineering data through building, setup, solving, and finally, reviewing your results, all under the same licenses. The application holding the license must close or issue a PAUSE command or receive an automatic release request to release the license and allow another application to use it. Licenses cannot be released while an application is actively performing a concurrency event (for example, an application cannot release a license in the middle of a solve operation because the license cannot be released until the solve operation is completed).

Single license sharing applies only to licenses of the same type (for example, Ansys Mechanical Enterprise). Choosing this option does not affect your ability to use licenses of different types simultaneously (for example, Ansys Mechanical Enterprise for one task and ANSYS CFD for another).

Because this method is the default, you do not have to take any action to run this way.

Explanation of License Type and Examples

License type is primarily by license increment. It is possible to use different license increments based on the operations performed within a single Ansys Workbench session. For example, Geometry import, meshing and solving will checkout different license keys based on the capabilities the application is requesting. For all applications, ANSYS licensing will first look at what other licenses

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are opened within this session: if any other licenses being used within this session fulfill the needed capabilities Ansys licensing will share an existing license. If not, a new, different license is checked out.

Restrictions for Single License Sharing:

You cannot run two concurrency events simultaneously (for example, you cannot solve two models of the same type simultaneously) with one license.

If you are using a license for one application, other applications may still not be able to share that license if those applications require capabilities not supported by the license. For example, you cannot share a Mechanical Enterprise license with a Fluent application.

Single License Sharing in Ansys Workbench Applications

Ansys Workbench applications handle single license sharing differently:

Mechanical:

You can launch the Mechanical application and move between its components (such as Meshing, Setup, and Solve). The active component will control the license while completing its operations and will release the license as soon as the operation is completed. For example, when you mesh, the meshing component will control the license during the meshing operation and then immediately release the license when the operation is completed. During the meshing operation you cannot use the meshing increment in any other systems under Ansys Workbench until the first system mesh is done and the license is released. The other meshing component, if present in the subsequent systems, will go into read-only mode while the first system mesh is still in progress.

Note:

Applications in read-only mode because of shared licensing do not refresh their license status automatically. Once the shared license is released by the editor that had consumed it, you must trigger Mechanical to query the license status. The most straightforward way to do this is click outside the Mechanical application window and then click back in the window to cause the license availability to be rechecked.

Mechanical APDL:

This application consumes a license as soon as you launch it and retains that license until it is finished. If you launch the Mechanical APDL application interactively, the license is retained until you either close the application or issue a **PAUSE** command at the Mechanical APDL command line. **PAUSE** allows you to temporarily release the license for another application to use. No other operation other than **SAVE** or **EXIT** is permitted while **PAUSED**. When the second application has finished and releases the license, issue an **UNPAUSE** command from the Mechanical APDL command line to resume its use of the license.

CFX, Fluent, Autodyn, Polyflow:

These applications consume a license when launched and retain the license until they receive a request from another application to release it. For example, when you open CFX-Pre, it will obtain and control the license. It will retain the license until you close the application or until another application (such as the CFX solver) requests it.

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Autodyn and Polyflow Classic also provide a manual **PAUSE** increment that allows you to interrupt Autodyn or Polyflow Classic and release the license, temporarily, for another application to use.

Electronics:

Electronics applications do not support license sharing.

Separate Licenses

By using the separate-licenses method, Ansys Workbench requires a separate license for each application. By using this method, you can move freely between the many applications that you might require during an analysis in Ansys Workbench if you have sufficient licenses. You can leave each application running and easily move between them at any point during the analysis, even if one of the applications is actively using the license (such as during a solve process). The disadvantage to this method is that you could potentially consume many licenses.

To activate the separate licenses method, open Ansys Workbench and click **Tools>Options**. From the **Project Management** view, disable the **Share a single license between applications if possible** option. After disabling this option, close options dialog box and restart Ansys Workbench.

Examples of Using Separate Licenses

You have two "ansys" increments. When you open and solve a model in the Mechanical application, you consume one "ansys" increment. If you link that Mechanical analysis to a Mechanical APDL system, you would consume a second "ansys" increment when you launch the Mechanical APDL application, if you have not closed out of the Mechanical application. Neither of these licenses would then be available for other users until you closed out of one or both applications.

2.3. Client Environment Variable Settings

You can set the following environment variables on individual machines to control their behavior, especially if you need it to be different from the general site configuration. These settings are especially useful for situations where you are testing a new product installation/license manager installation on a single machine before full site deployment, or other similar situations.

ANSYSLMD_LICENSE_FILE

Can be used to identify a license server machine or license file. If set, this specification is used before any other license path information. The default port number assigned to Ansys, Inc. is 1055. Therefore, if your server has the hostname alpha1 and the IP address of 10.3.1.69, you can identify the server to use as 1055@alpha1 or 1055@10.3.1.69.

ANS_FLEXLM_DISABLE_DEFLICPATH

Indicates that the default license path should not be searched when determining the licensing path in the Ansys product. When this environment variable is set:

- Only **ANSYSLMD_LICENSE_FILE** environment variable setting is used.
- Only the **ANSYSLMD_LICENSE_FILE** environment variable setting is required.
- Settings in the `ansyslmd.ini` file will NOT be used. It will ignore the local server and will ignore the Specify the License Server setting.

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ANSYSLI_TIMEOUT_CONNECT

Used to specify the amount of time that elapses before the client times out if it cannot connect to the server. Default is 20 seconds. Minimum timeout period you can specify is 5 seconds and the maximum is 60 seconds. If the client determines that a server is not available in less time, it will cancel immediately.

ANSYSLI_TIMEOUT_FLEXLM

Increases the amount of time ansyscl will wait for the FNP checkout from 5 (the default) to "N" seconds.

ANSYSLI_TIMEOUT_TCP

Used to specify the amount of time that elapses before the client times out if it cannot get a response from the server. This setting applies only when the license server is running but is responding slowly (generally because of network issues or server load). Default is 60 seconds. Minimum timeout period you can specify is 30 seconds and the maximum is 300 seconds.

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Chapter 3: HPC Licensing

Ansys, Inc. offers multiple high performance computing license options, described below.

When using FlexNet Publisher (FNP) based licenses, the HPC license options cannot be combined with each other in a single solution; for example, you cannot use both AnsysHPC and Ansys HPC Packs in the same analysis solution. However, Ansys HPC **OR** Ansys HPC Packs can be combined with Ansys Elastic Licenses (AEC) in the same analysis solution. Note that Elastic Licensing does not support Ansys HPC Packs, therefore, any Ansys HPC type request from an application is converted into Ansys HPC when using Elastic Licensing.

See the applicable product documentation for instructions on configuring and running a distributed solution.

3.1. Ansys HPC

These physics-neutral licenses can be used to run a simulation across multiple cores and work with most Ansys applications. Some Ansys applications can utilize any combination of CPU and GPU processors. Other applications are limited to CPU processors only. Contact your Ansys sales representative for a complete list of products that can be used with Ansys HPC.

Most Ansys applications allow you to use four cores without using any HPC licenses; Ansys HPC licenses add to this base functionality. For example, an Ansys CFD Enterprise user using twelve cores will consume only eight Ansys HPC licenses. Contact your Ansys sales representative for a complete list of applications with this option.

Note:

HPC licenses and HPC Pack licenses cannot be combined within the same solution. Additionally, HPC licenses do not participate in license borrowing.

3.1.1. Ansys HPC Pack Licenses

Ansys HPC Pack Licenses can be used to run a simulation across multiple cores and work with most Ansys applications. Contact your Ansys sales representative for a complete list of applications that can be used with Ansys HPC Pack Licenses. Individual HPC Pack Licenses cannot be split between multiple users or between multiple analyses.

Products with Included Cores

Application/Module	Included Parallel Cores	GPU Support	HPC Per GPU
Additive Print	4 (2)	No	N/A

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Application/Module	Included Parallel Cores	GPU Support	HPC Per GPU
Ansys Rocky	4	Yes	8 (3)
Aqwa	4	No	N/A
Autodyn	4	No	N/A
CFX	4	No	N/A
Chemkin	4	No	N/A
Circuit	4	Yes	8
Discovery	0 (5)	Partial	N/A (6)
EMIT	4	Yes	8
Explicit	4	No	N/A
FENSAP	4	No	N/A
Fluent	4	Yes	1 (4)
Forte	4	No	N/A
HFSS	4	Yes	8
Icepak	4	No	N/A
LS-DYNA	1 (1)	No	N/A
Maxwell	4	Yes	8
Mechanical APDL	4	Yes	1
Motion	1	No	N/A
Polyflow Classic	4	No	N/A
Q3D	4	No	N/A
RBD	4	No	N/A
SIwave	4	No	N/A
Speos	4	Partial (only Preview)	N/A

1. Ansys LS-DYNA HPC needed
2. Maximum 12 cores
3. Requires Ansys Rocky HPC
4. A maximum of 50% of the HPC tasks can be used to enable GPUs, for example 2 HPC Packs enables a total of 36 cores and a maximum of 18 can be used for GPUs.
5. HPC solves are provided by the underlying physics solver license.
6. Discovery offers GPU-based solves in Explore mode, which does not cost any HPC packs.

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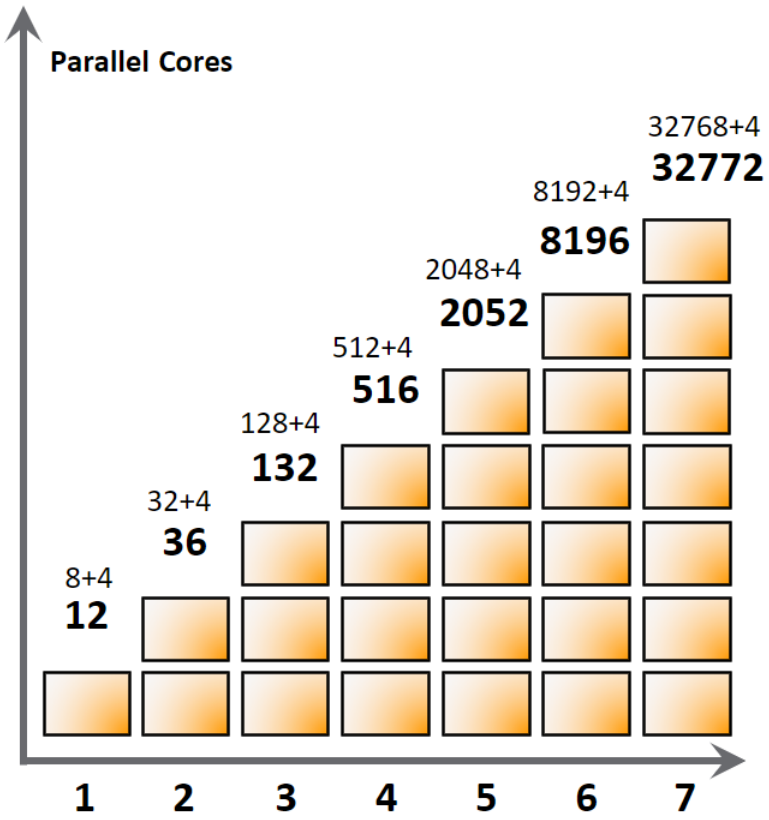
HPC Packs per Simulation



You may only borrow one Ansys HPC Pack license at a time.

3.1.2. HPC License Sharing (System Coupling)

When running a system coupling calculation using multiple solvers. Each solver has to check out its own HPC licenses. For example: A system coupling calculation where Fluent is using six cores and Mechanical eight cores would require the simultaneous checkout of the following licenses.

Fluent: Requires the base CFD solver enabling the license plus either a HPC Pack, or 2 additional Ansys HPC licenses

Mechanical: Requires the base mechanical solver enabling the license plus either a HPC Pack, or 4 additional Ansys HPC licenses

3.1.3. HPC Licensing with Hyperthread Cores

For Ansys HPC licensing, a hyperthread core is treated as being the same as a physical CPU core. If you run a 24 core Ansys solution on a CPU with 12 physical and 12 hyperthread, you will consume the number of HPC licenses required to enable a total of 24 cores. Typically, the 12 Hyperthread cores will enable little or no speedup to the calculations and therefore hyperthreading is not recommended.

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3.2. Shared HPC Licensing for Concurrent Parametric Variations

Starting with Ansys release 2020 R2, HPC licenses may be used for concurrent simulation of parametric variations, allowing you to leverage standard HPC licenses instead of extra solver licenses. Each variation, after the first, requires 8 HPC increments or 1 HPC Pack increment. Similar to non-parametric simulations, each variation provides 4 included parallel cores per variation. Additional HPC parallel cores are shared across all variations, using the same HPC rules. All licenses that are consumed during a concurrent parametric simulation are held for the duration of the simulation, based on the max count of each license required for a given variation.

You can use the Ansys Parametric Licensing Calculator (https://ansys.com/parametric) to determine the number of HPC Workgroup or HPC Pack licenses required.

When Upfront License Checkout option, is enabled in Ansys Workbench (see Using Upfront License Checkouts for Design Point Updates), a different algorithm is used to calculate the number of HPC Increments that should be checked out upfront of the parametric update.

In the case where upfront license checkout is enabled, the number of HPC increments checked out at start of parametric update=(k*(max(0,((i*j) -4)))) + ((k -1)*8).

i=number of solver and preppost enabling licenses pre-selected

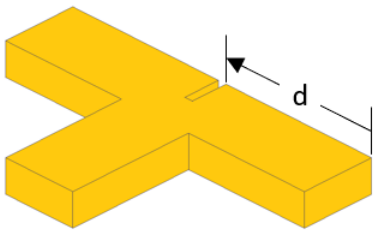
j=number of cores required per simultaneous task

k=number of simultaneous tasks requested

HPC Parametric Example

6 Parametric Variations, 24 Cores/Variation

Example: Position slot at various distances from right end of tee.



Variation	d
1	2 cm
2	3 cm
3	4 cm
4	5 cm
5	6 cm
6	7 cm

HPC Workgroup		
Solver		1 Solve
Parallel	6 variations x 24 cores	120 HP
4 Included Cores	*- 6 variations x 4 cores*	
Parametric	6 variations	40 HP
TOTAL		**1 Solve** **160 HP**

HPC Pack		
Solver		1 Solve
Parallel	6 variations x 24 cores	3 HPC Pa
4 Included Cores	*- 6 variations x 4 cores*	
Parametric	6 variations	5 HPC Pa
TOTAL		**1 Solve** **8 HPC Pa**

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3.3. HPC Licensing Frequently Asked Questions

This section lists common questions you may have while setting up licensing.

Which files contain the HPC license preferences?

HPC license preferences determine whether an HPC Pack or individual HPC licenses are used first. The preferences are stored in a .xml file.

Linux:

```
~/.ansys/v251/licensing/license.preferences.xml
```

Windows:

```
%appdata%\Ansys\v251\licensing\license.preferences.xml
```

To set the HPC Licenses preferences, see Setting HPC User Preferences (p. 25).

Why do multiple core Ansys LS-DYNA calculations fail when I appear to have HPC Pack or Ansys HPC licenses available?

Standard Ansys HPC licenses such as anshpc and anshpc_pack, cannot be used with Ansys LS-DYNA. Ansys LS-DYNA uses Ansys LS-DYNA, dysmp, licenses to enable multiple core calculations.

How many HPC license are used when I run Ansys LS-DYNA on multiple cores?

When run on multiple cores, Ansys LS-DYNA will consume dysmp licenses. These licenses are available for purchase in different quantities, as Ansys LS-DYNA HPC, Ansys LS-DYNA HPC-8, 16, 32,64,128 and 256. The licenses can then be added together, to enable the total number of cores requested by a calculation. A calculation run on <n> cores, will consume a base Ansys LS-DYNA license (dyna), plus <n-1> Ansys LS-DYNA HPC licenses (dysmp).

Does the number of CUDA cores on a GPU card change the number of HPC licenses used?

The number of HPC license consumed when using GPU cards to accelerate an Ansys solution depends on the number of GPU cards used and the number of separate GPU engines on each card. The number of HPC licenses consumed, does not depend on the number of CUDA cores, supplied by each separate GPU engine.

Is there any disadvantage to not renewing TECS on my perpetual HPC license?

If you do not renew TECS on perpetual HPC licenses, the HPC licenses can only be used to enable multiple core calculations for Ansys solvers that were released before the date of expiry, of the TECS.

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Chapter 4: Troubleshooting

This section contains information that may be useful when working with Ansys customer support.

4.1. Getting Additional License Debug Information

Use the following suggestions to display or generate additional error messages and debugging information.

- View the `licdebug` file. The `licdebug` file is generated when you run an Ansys, Inc. application and resides in the `.ansys` subdirectory under the directory specified by the **TEMP** environment variable (Windows) or in the $HOME directory (Linux). The `licdebug` filename will vary depending on the product but will follow the format `licdebug.<product>.251.out`. For example:

  If a `licdebug` file already exists and is dated today, the information is appended. If it is dated before today, the existing file will be renamed with a `.old` extension and a new file will be started.

  - Mechanical APDL (Ansys): `licdebug.ANS_SOLVER.251.out`
  - Ansys Workbench: `licdebug.ANS_WB.251.out`
  - Mechanical: `licdebug.MECH.251.out`
  - Ansys Fluent: `licdebug.FLUENT_SOLVER.251.out`
  - Ansys Polyflow Classic: `licdebug.POLYFLOW.251.out`
  - Ansys CFX-Pre: `licdebug.CFX_PRE.251.out`
  - Ansys CFX Solver: `licdebug.CFX_SOLVER.251.out`
  - Ansys CFD-Post: `licdebug.CFD_POST.251.out`.
  - Ansys ICEM CFD (includes AI*Environment): `licdebug.ICEM_AM.251.out`
  - Ansys Icepak: `licdebug.ICE_PAK.251.out`
  - Ansys LS-DYNA: `licdebug.DYNA_SOLVER.251.out`
  - Connection functionality: `licdebug.ANS_PM.251.out`

  Note:

  The license debug file names include the current release of the application. Because not all applications are updated with each release, it is possible to have lic\debug file names that are appended with older release numbers. For example, it is possible to be running

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Ansys Release 16.1 but still have a product license debug log file name include 160 as in **licedbug.POLYFLOW.160.out**.

The directory specified by the **TEMP** environment variable may be hidden on your system. To view the directory and file, click My Computer. Choose **Tools** from the menu, and then click **Folder** options. Click the **View** tab and select **Show hidden files and folders**. Click **OK**.

If after following these suggestions, the resulting debug information does not make sense, try these suggestions:

- Confirm that the license manager was restarted or the license file was reread after any changes were made to the license file. If you did not make any changes to the license file for the server, check the date/time that it was last changed. Get the relevant path information from the debug output. Also, confirm that the same path is being used.
- Try restarting the license manager and then attempt to run again. See if the same situation occurs.
- If you installed a new license file but are not seeing it even after restarting the license manager, confirm that the correct license file is being used to start the license manager. In this case, neither the client application nor the license manager is using the changed file. Also confirm that if site or user license preferences were set, the preferences were updated with the new license information.
- If the `ansyslmd.lic` file is at the end of the path and it is a license file that uses the license manager daemon/service, then confirm that the license manager is started with the same path as the `ansyslmd.lic` file's path. The license manager could be looking at one file in the client application but the license manager daemon/service was started with another file.

4.2. Application Fails to Start

This section contains information that may be useful when addressing licensing issues on the Linux platforms.

4.2.1. Application fails when initializing licensing on Linux Platform

When running Ansys applications on server versions of Red Hat 7x and CentOS 7x, Security-Enhanced Linux (SELinux) can block ansyscl communications.

To correct this issue, make sure to establish rules within SELinux to allow Ansys applications (ansyscl) to communicate with ansyslmd.

4.2.2. Mechanical application fails to start

A new preference is now available in Mechanical Workbench: **Close Mechanical During Launch If No License** in the **Tools > Options** dialog, under the **Mechanical** category. If selected, this preference terminates opening the application and displays a message if no license is available in the queue or if the license checkout process fails. Selecting this preference can save time since otherwise the application opens in read-only mode, which can be a lengthy process for large projects. You can obtain license failure information in the licensing debug file.

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