



## Information About Licensing

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## Restrictions for Configuring Licenses

- Members of a switch stack must run the same license level (base license level and add-on). If the license level is different with a mismatched base license, the switch will not join the stack until it is changed and rebooted from the active stack. Mismatched add-on licenses are automatically synced by the active stack.
- A permanent license can be moved from one device to another. To activate a license, you must reboot your switch.
- An expired evaluation license cannot be reactivated after reboot.

## Information About Licensing

### Overview of License Levels

Software features on the switch are available with base (also known as feature sets) and add-on license levels. Their validity duration determines the license type.

- **Base license levels** for a switch are indicated by the switch model number. They are always permanent licenses, without an expiration date.
- **Add-on license levels** provide Cisco innovations on the switch, as well as on the Cisco Digital Network Architecture Center (Cisco DNA Center). Add-on licenses may be ordered only with a term license type, for a three, five, or seven year period.

## Base Licenses

The following base license levels are available:

- LAN Lite
- LAN Base

The model number is an indicator of the license level. See the last suffix in the model number. -L indicates a LAN Base model, and -LL indicates a LAN Lite model. For example:

Catalyst 2960X-48FPD-L has a LAN Base image

Catalyst 2960X-24TS-LL has a LAN Lite image



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**Note** The base license level is bound to the hardware model and cannot be changed.

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## Add-On Licenses

The DNA essentials add-on license is available.

The following guidelines apply to Add-on Licenses:

- A Reboot is not required when you configure an add-on license.
- Add-on licenses may be ordered for a three, five, or seven year period.
- You must set up Cisco SSM to receive daily e-mail alerts, to be notified of expiring add-on licenses that you want to renew.
- Only the DNA Essentials add-on license is available. (Although visible on the CLI, the DNA Advantage license level is not available).

## License States

You can also access the license information by using the **show license** command in the privileged EXEC mode.

**Table 1: Right-to-use license states**

License State	Description
Active, In Use	EULA was accepted and the license is in use after device reboot.
Active, Not In Use	EULA was accepted and the switch is ready to use when the license is enabled.
Not Activated	EULA was not accepted.

The following example shows how to display the license level of the switch. The example shows LAN Base as the active license and as the one that is in use.

```

Switch# show license

Index 1
  License Name      : lanlite
  Period left       : 0 minute 0 second
  License Type: Permanent
  License State: Inactive
Index 2
  License Name      : lanbase
  Period left       : 0 minute 0 second
  License Type: Permanent
  License State: Active, In use

Index 3
  License Name      : dna-essentials
  Period left       : CSSM Managed
  License Type      : Subscription
  License State     : Active, In use

Index 4
  License Name      : dna-advantage
  Period left       : CSSM Managed
  License Type      : Subscription
  License State     : Not Activated

```

Guidelines to follow when monitoring your image based license state:

- A purchased permanent license is set to Active, In Use state only after a switch reboot.
- If more than one license was purchased, a reboot will activate the license with the highest feature set. For instance, the LAN Base license is activated and not the LAN Lite license.
- The remaining licenses purchased after switch reboot, stay in Active, Not In Use state.

## Guidelines for License Types

Licenses may be of the permanent or term type only.

- Permanent: For a license level, and without an expiration date. The basic license type for the switch is determined by the model and is always permanent.
- Term: For a license level, and for a three, five, or seven year period. Add-on licenses (DNA Essentials and DNA Advantage) may be ordered only with a term license type.

## Ordering with Smart Accounts

We recommend that you use Smart Accounts to order devices as well as licenses. Smart Accounts enable you to manage all of your software licenses for switches, routers, firewalls, access-points or tools from one centralized website. To create Smart Accounts, use the Cisco Smart Software Manager (Cisco SSM).



### Note

This is especially relevant to the term licenses that you order, because information about the expiry of term licenses is available only through the Cisco SSM website.

For more information about Cisco SSM, see: <http://www.cisco.com/c/en/us/buy/smart-accounts/software-licensing.html>

## License Activation for Switch Stacks

LAN Base models can stack with LAN Base models only.

The active stack is activated with a license from its active console. The license level for members in the stack can be activated at the same time.

To change the license level, do not disconnect a newly added stack member if the stack cables are connected. Instead, use the active console to set the new member's license level at the same license level as an active stack and reboot the new member to join the stack.

Reboot is required only for the base license; not when you configure an add-on license

## How to Configure Add-On License Levels

The following sections provide information on how to configure Add-on License Levels.

### Activating an Image Based Add-on License

The following steps can be used to activate an image based license.

#### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>  <b>Example:</b>  Device> <b>enable</b>	Enables privileged EXEC mode. Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b>  <b>Example:</b>  Device# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>license boot level addon <i>addon-license</i></b>  <b>Example:</b>  Device(config)# <b>license boot level addon dna-essentials</b>	Specifies the add-on license level. The following options are available: <ul style="list-style-type: none"><li>• DNA Essentials</li></ul>
<b>Step 4</b>	<b>license accept end user agreement force</b>  <b>Example:</b>	Enables acceptance of the end-user license agreement (EULA).

	Command or Action	Purpose
	Device(config)# license accept end user agreement force	<b>Note</b> To configure an add-on license EULA acceptance is not mandatory, but you will not be able to use or configure the DNAC features until you complete this step.
<b>Step 5</b>	<b>show license right-to-use usage</b>  <b>Example:</b> Device(config)# show license right-to-use usage	Displays detailed usage information.  Other options are available with the <b>show license right-to-use command</b> .

## Rehosting a License

To rehost a license, you have to deactivate the license from one device and then activate the same license on another device. The following steps can be used to rehost a license.

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>  <b>Example:</b>  Device> enable	Enables privileged EXEC mode.  <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b>  <b>Example:</b>  Device# configure terminal	Enters global configuration mode.
<b>Step 3</b>	<b>license right-to-use deactivate [license-level] slotslot-num</b>  <b>Example:</b>  Device(config)# license right-to-use deactivate dna-essentials slot 1	Deactivates the license on one device.
<b>Step 4</b>	<b>license right-to-use activate [license-level]slot-num [acceptEULA]</b>  <b>Example:</b>  Device(config)# license right-to-use activate dna-essentials slot 2	Activates the license on another device.

## Monitoring Licenses

Use the following commands in the privilege EXEC mode to monitor license information:

Command	Purpose
<b>show license right-to-use default</b>	Displays the default license information.
<b>show license right-to-use detail</b>	Displays detailed information of all the licenses in the switch stack.
<b>show license right-to-use eula</b>	Displays the end user license agreement.
<b>show license right-to-use slot slot-number</b>	Displays the license information for a specific slot in a switch stack.
<b>show license right-to-use summary</b>	Displays a summary of the license information on the entire switch stack.
<b>show license right-to-use usage [ slot slot-number ]</b>	Displays detailed information about usage for all licenses in the switch stack.

## Configuration Examples for License Levels

The following sections provide examples for configuring license levels.

### Reference

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### Example: Displaying the detailed license information

The following examples shows how to display the detailed information of all the licenses in a stack using the **show license right-to-use detail** command.

```
Device# show license right-to-use detail
Index 1
  License Name      : Advanced Enterprise Services
  Period left       : Lifetime
  License Type       : permanent
  License State      : Active, In use
Index 2
  License Name      : dna-essentials
  Period left       : CSSM Managed
  License Type       : Subscription
  License State      : Not Activated
Index 3
  License Name      : dna-advantage
  Period left       : CSSM Managed
  License Type       : Subscription
  License State      : Active, In use
```

### Example: Displaying a summary of the license information

The following examples shows how to display a summary of the license information using the **show license right-to-use summary** command.

```

Device# show license right-to-use summary
License Name                               Type                Period left
-----
lanlite                                   Permanent           0 minute 0 second
lanbase                                   Permanent           0 minute 0 second
dna-essentials                           Subscription        CSSM Managed
-----

```

```

License Level In Use: lanbase  addon: dna-essentials
License Level on Reboot: lanbase  addon: dna-essentials

```

Example: show license right-to-use usage

```

FEX-0#show license right-to-use usage
slot      License Name                               Type                In-use    EULA
-----
0          lanlite                                   Permanent           yes       yes
0          lanbase                                   Permanent           yes       yes
          dna-essentials                           Subscription        yes       yes
          dna-advantage                             Subscription        no        yes

```

## Example: Displaying the end user license agreement

The following example shows how to display the end user license agreement.

```

Device# show license right-to-use eula subscription
Feature name      EULA Accepted
-----
dna-essentials    yes
dna-advantage     no
PLEASE READ THE FOLLOWING TERMS CAREFULLY. INSTALLING THE LICENSE OR
LICENSE KEY PROVIDED FOR ANY CISCO SOFTWARE PRODUCT, PRODUCT FEATURE,
AND OR SUBSEQUENTLY PROVIDED SOFTWARE FEATURES (COLLECTIVELY, THE ?SOFTWARE?),
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electronically or by any other means available. While Cisco may provide alerts, it is
your sole responsibility to monitor your usage of any such term Software feature to
ensure that your systems and networks are prepared for a shutdown of the Software feature.
To memorialize your acceptance of these terms and activate your license to use the Software,
please execute the command "license accept end user agreement force".

```

## Feature History for Information About Licensing

Release	Modification
Cisco IOS Release 15.2(6)E1	This feature was introduced.

