



## Information About Licensing

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## Restrictions for Licensing

- 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

The following sections provide information on 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 switch is shipped with a LAN Lite base license.




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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 follow add-on licenses are available:

- DNA Essentials
- DNA Advantage

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 email alerts, to be notified of expiring add-on licenses that you want to renew.

## 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.

```
Device# show licenseIndex 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: A license level without an expiration date. The basic license type for the switch is determined by the model and is always permanent.
- Term: A license level 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).



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**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.

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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 Licensing

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)# license boot level addon dna-essentials	Specifies the add-on license level. The following options are available: <ul style="list-style-type: none"> <li>• DNA Essentials</li> <li>• DNA Advantage</li> </ul>
<b>Step 4</b>	<b>license accept end user agreement force</b> <b>Example:</b> Device(config)# license accept end user agreement force	Enables acceptance of the end-user license agreement (EULA). <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</b> command.

## 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</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</b>	Displays detailed information about usage for all licenses in the switch stack.

## Configuration Examples for Licensing

The following sections provide examples for configuring license levels.

### 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 show how to display a summary of the license information:

## Example: Displaying the End User License Agreement

```

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

Device# 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

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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 Licensing

This table provides release and related information for features explained in this module.

These features are available on all releases subsequent to the one they were introduced in, unless noted otherwise.

Release	Feature	Feature Information
Cisco IOS Release 15.2(7)E3k	Licensing	This chapter describes about licensing.

Use Cisco Feature Navigator to find information about platform and software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>.

