



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

Cisco Catalyst 3560-CX Series compact switches ship with the IP Base license and can be upgraded to use the IP Services license. Cisco Catalyst 2960-CX Series compact switches ship with the LAN Base license level.



Note On Cisco Catalyst 2960-CX Series, the base license level is bound to the hardware model and cannot be changed.

Add-On Licenses

On Cisco Catalyst 3560-CX Series compact switches, the following add-on licenses are available:

- DNA Essentials
- DNA Advantage

On Cisco Catalyst 2960-CX Series compact switches, 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.
- For the Cisco Catalyst 3560-CX Series: When you order the IP Base + DNA Advantage combination, only three virtual networks are available with SDA.
- For the Cisco Catalyst 2960-CX Series: 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.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **license boot level addon *addon-license***
4. **license accept end user agreement force**
5. **show license right-to-use usage**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	configure terminal Example:	Enters global configuration mode.

	Command or Action	Purpose
	Device# <code>configure terminal</code>	
Step 3	license boot level addon <i>addon-license</i> Example: Device(config)# <code>license boot level addon dna-essentials</code>	Specifies the add-on license level. The following options are available: <ul style="list-style-type: none"> • DNA Essentials • DNA Advantage
Step 4	license accept end user agreement force Example: Device(config)# <code>license accept end user agreement force</code>	Enables acceptance of the end-user license agreement (EULA). Note 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.
Step 5	show license right-to-use usage Example: Device(config)# <code>show license right-to-use usage</code>	Displays detailed usage information. Other options are available with the show license right-to-use command .

Activating an Image Based Add-on License on Cisco Catalyst 3560-CX Series

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

SUMMARY STEPS

1. `enable`
2. `configure terminal`
3. `license right-to-use [activate | deactivate] [addon { dna-essentials | dna-advantage }] {subscription | evaluation} [acceptEULA]`
4. `show license right-to-use usage`

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> <code>enable</code>	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	configure terminal Example: Device# <code>configure terminal</code>	Enters global configuration mode.

	Command or Action	Purpose
Step 3	<p>license right-to-use [activate deactivate] [addon { dna-essentials dna-advantage }] { subscription evaluation } [acceptEULA]</p> <p>Example:</p> <pre>Device(config)# license right-to-use activate ipbase acceptEULA</pre> <pre>Device(config)# license right-to-use activate addon dna-essentials subscription acceptEULA</pre>	<p>Activates the specified license level on a switch and enables acceptance of the end-user license agreement (EULA).</p> <p>To configure an add-on license, EULA acceptance is not mandatory.</p>
Step 4	<p>show license right-to-use usage</p> <p>Example:</p> <pre>Device(config)# show license right-to-use usage</pre>	<p>Displays detailed usage information.</p> <p>Other options are available with the show license right-to-use command.</p>

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.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **license right-to-use deactivate** [license-level] slotslot-num
4. **license right-to-use activate** [license-level]slot-num [**acceptEULA**]

DETAILED STEPS

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

Command or Action	Purpose
Example: Device(config)# license right-to-use activate dna-essentials slot 2	

Monitoring Licenses

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

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

Example: Displaying a summary of the license information

```

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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CONSTITUTES YOUR FULL ACCEPTANCE OF THE FOLLOWING TERMS.YOU MUST NOT PROCEED
FURTHER IF YOU ARE NOT WILLING TO BE BOUND BY ALL THE TERMS SET FORTH HEREIN.

```

```

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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 Information About Licensing

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

