

Smart Licensing

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Information About Cisco Smart Licensing

Cisco Smart Licensing is a flexible licensing model that provides you with an easier, faster, and more consistent way to purchase and manage software across the Cisco portfolio and across your organization. And it's secure – you control what users can access. With Smart Licensing you get:

- Easy Activation: Smart Licensing establishes a pool of software licenses that can be used across the entire organization—no more PAKs (Product Activation Keys).
- Unified Management: My Cisco Entitlements (MCE) provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- License Flexibility: Your software is not node-locked to your hardware, so you can easily use and transfer licenses as needed.

To use Smart Licensing, you must first set up a Smart Account on Cisco Software Central (software.cisco.com).

For a more detailed overview on Cisco Licensing, go to cisco.com/go/licensingguide.

Figure 1: Relationship Between Ownership, Smart Account, and Usage



Note Starting with Cisco IOS XE Gibraltar 16.12.1, the Cisco Catalyst 9800 Series Wireless Controller does not support satellite server for licensing reporting. You should use the Cisco Smart Software Manager (CSSM) for any licensing reporting.

Once your product is registered in CSSM, you will be able to view the license usage using your Smart Account or Virtual Account for every eight hours.

Note

- Smart Licensing registration is lost when the device switches from controller to autonomous mode and back. In such instances, you should re-register the controller to CSSM to restore licenses authorization.
- After adding new license in the Cisco Smart Software Manager (CSSM) for customer virtual account, run the **license smart renew auth** command on the controller to get the license status changed from Out OF Compliance to Authorised.



Note You need to execute the write memory command once in the following cases:

- When the Standby becomes Active after the first switchover.
- When the license de-registers after the switchover.

Access points support the following AIR licensing levels:

- AIR Network Essential (AIR-NE)
- AIR Network Advantage (AIR-NA)
- AIR DNA Essential (AIR-DNA-E)
- AIR DNA Advantage (AIR-DNA-A)

Note The AIR-DNA-A and AIR-DNA-E are the available license levels on the controller.

The AIR-DNA-A is the default mode.

You can configure as *AIR-DNA-A* or *AIR-DNA-E* license level and on term expiry, you can move to the Network Advantage or Network Essentials license level, if you do not want to renew the DNA license.

Smart Licensing Reservation Types

License reservation is a mechanism to reserve node locked licenses and install them on the controller.

The following are the license reservation types:

- Permanent License Reservation (PLR)-All licenses are reserved.
- Specified License Reservation (SLR)—Only specific licenses are reserved. Supports term licenses.

The controller supports four different entitlement registration or reporting on Smart Licensing or service reservation. Every connecting AP requires a Cisco DNA Center License to leverage the unique value properties of the controller.



Note

The controller boots up with AIR-DNA-A as the default. Any change in the license level requires a reboot.

Entitlement Reporting

Entitlement reporting is nothing but reporting the number of access points on the controller to the Cisco Smart Software Manager (CSSM).

The entitlement reporting is based on the configured AIR license level on the controller.



Note Two types of entitlement reporting occurs when you are in *AIR-DNA-E* and *AIR-DNA-A* levels. For instance, if your controller reports 100 APs as count, your entitlement reporting displays *100 AIR-NE* and *100 AIR-DNA-E*. Similarly, it also displays *100 AIR-NA* and *100 AIR-DNA-A* to CSSM.

Creating a Smart Account

Procedure

 Step 1
 Navigate to the Cisco Software Central web page:

 https://software.cisco.com/#

 The Cisco Software Central page is displayed.

 Step 2
 From the Important News pop-up window, click Get a Smart Account.

(Or)From the Administration area, click Request a Smart Account.Follow the process to create a Smart Account.Note You need to have a Smart Account to use Smart Licensing.

Using Smart Licensing

Before you begin

Follow the procedure given below to cover the high-level steps on how to use smart licensing:

Procedure

Step 1	Configure your device for smart licensing.		
Step 2	Login	to CSSM customer Smart Account > Virtual Account to generate a token.	
Step 3	Execu	te the following command on your device:	
	Devic	e# license smart register idtoken <token-id></token-id>	
	Note	You can get the <i>token-id</i> from the CSSM web portal.	
	Note	You can use the license smart register idtoken token-id force command to register the device again	

even if the same device was registered with CSSM earlier.

Reregister a License (GUI)

Step 1	Choose Administration > Licensing.
Step 2	In the Registration Status field, click Reregister link. The Registration dialog box is displayed.
Step 3	Select the Register this product instance if it is already registered check box to forcefully register the product.
Step 4	Click Finish .

Using Specified License Reservation (SLR)

Procedure

Step 1	configure terminal		
	Example:		
	Device# configure terminal		
	Enters global configuration mode.		
Step 2	license smart reservation		
	Example:		
	Device(config)# license smart reservation		
	Enables specified license reservation mode on the controller.		
Step 3	license smart reservation request local		
	Example:		
	Device(config)# license smart reservation request local		
	Generates a request code.		
	Note Enter this request code in the Cisco Smart Software Manager portal:		
	CB-ZL-AIR-9500C-K9:9J4FVHMBXCO-BjSeUVwmn-D8		
Step 4	end		
	Example:		

Device(config)# end

Returns to privileged EXEC mode. Alternatively, you can also press Ctrl-Z to exit global configuration mode.

Enabling Smart Software Licensing

Step 1	Navigate to the Cisco Software Central web page using the following link:
	https://software.cisco.com/#
	The Cisco Software Central page is displayed.
Step 2	From the License tab, click Smart Software Licensing.
	The Smart Software Licensing page is displayed.

Step 3	Click the Inventory tab to view Virtual Account: Accounting page details.				
Step 4	Click New Token to register the product instances to this virtual account.				
	The C	reate Registration Token page is displayed.			
Step 5	In the	Description field, enter a description for the ID token.			
Step 6	Check the Allow export-controlled functionality on the products registered with this token checkbox to enable export-controlled functionality.				
Step 7	Click Create Token.				
	Note	Licenses cannot be purchased with the wireless controller. All licenses can be purchased with access points.			

Enabling Smart Call Home Reporting

Procedure

Step 1	configure terminal
	Example:
	Device# configure terminal
	Enters global configuration mode.
Step 2	call-home reporting contact-email-addr email-address http-proxy proxy-server port-number
	Example:
	Device(config)# call-home reporting contact-email-addr sample@cisco.com http-proxy 120.20.2.2 5
	Enables Call Home reporting.
	• <i>port-number</i> —The valid range is from 1 to 65535.
Step 3	end
	Example:
	Device(config)# end
	Returns to privileged EXEC mode. Alternatively, you can also press Ctrl-Z to exit global configuration mode.
	For more information on Smart Call Home, see:

https://www.cisco.com/c/en/us/td/docs/switches/lan/smart_call_home/book/SCH31_Ch3.html

Configuring AIR License Level (GUI)

Procedure

Step 1	Choose Administration > Licensing.		
Step 2	Click Change Wireless License Level. The Change Wireless License Level dialog box is displayed.		
Step 3	Select the License Level using the drop-downs.		
Step 4	After changing the New Level values, click Save & Reload (Or) Save without Reload . Alternatively, you can click Reload to reload the device. During this time, you will lose network connectivity to the device. If you wish to continue, click Yes .		
Step 5	Click refresh icon to refresh the device.		

Configuring AIR License Level (CLI)

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example: Device# configure terminal	
Step 2	<pre>license air level {air-network-advantage air-network-essentials} Example: Device(config)# license air level air-network-advantage Device(config)# license air level air-network-essentials</pre>	 Configures AIR license level. air-network-advantage—Is the AIR network advantage license level. air-network-essentials—Is the AIR network essential license level.
Step 3	<pre>end Example: Device(config)# end</pre>	Returns to privileged EXEC mode. Alternatively, you can also press Ctrl-Z to exit global configuration mode.

Configuring AIR Network Essentials License Level

Procedure

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
	Device# configure terminal	
Step 2	license air level network-essentials addon air-dna-essentials	Configures AIR network essentials license level.
	Example: Device(config)# license air level network-essentials addon air-dna-essentials	
Step 3	end Example: Device(config)# end	Returns to privileged EXEC mode. Alternatively, you can also press Ctrl-Z to exit global configuration mode.

Configuring AIR Network Advantage License Level

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example: Device# configure terminal	
Step 2	license air level air-network-advantage addon air-dna-advantage	Configures AIR network advantage license level.
	Example: Device(config)# license air level air-network-advantage addon air-dna-advantage	
Step 3	end Example: Device(config)# end	Returns to privileged EXEC mode. Alternatively, you can also press Ctrl-Z to exit global configuration mode.

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Enabling High-Performance License

From Cisco IOS XE Amsterdam 17.1.1s onwards, you can increase the capacity of the Cisco Catalyst C9800-L-K9 Wireless Controller using a high- performance license.

This high- performance license increases the capacity of the controller from 250 APs and 5000 clients to 500 APs and 10000 clients, and throughput from 5 Gbps to 10 Gbps.

Use the following procedure to increase the support of APs, clients, and throughput.

Before you begin

- License activation should be completed during bootup.
- Any change in the license configuration requires reboot of the controller. Ensure that you save the configuration before reload.
- Two licenses are required for the high-availability controllers.

	Command or Action	Purpose
Step 1	configure terminal	Enters global configuration mode.
	Example:	
Step 2	license wireless high-performance	Increases the scale from 250 APs and 5000
	Example:	clients to 500 APs and 10000 clients, and throughput from 5 Gbps to 10 Gbps.
	Device(config)# license wireless high-performance	Use the no license wireless high-performance command to unconfigure the high-performance license.
		Note Reboot the controller for the performance license to take effect.
Step 3	end	Returns to privileged EXEC mode.
	Example: Device(config)# end	
Step 4	show license summary	(Optional) Displays the summary of licenses.
·	Example: Device# show license summary Smart Licensing is ENABLED Registration: Status: REGISTERED Smart Account: BU Production Test Virtual Account: NplusOne Export=Controlled Functionality:	

I

	Command or Action ALLOWED Last Renewal Attempt: SUCCEEDED Next Renewal Attempt: Apr 02 02:51:15 2020 IST License Authorization: Status: REGISTERED Last Communication Attempt: SUCCEEDED Next Communication Attempt: Oct 10 22:55:34 2019 IST License Usage: License Entitlement tag Count Status C9800-L performance (LIC_C9800L_PERF)			Purpose	
Step 5	show wireless summary		(Optional) Displays the number of access points, radios, and wireless clients known to the		
	Device# show wireless	summar	У		controller.
	Max APs supported Max clients supported	:	500 10000		
	Access Point Summary				
	Т	otal	Up	Down	
	802.11 2.4GHz	0	0		
	0 802.11 5GHz	0	0		
	802.11 dual-band	0	0		
	0 802.11 rx-dual-band 0	0	0		
	Client Serving(2.4GHz) 0	0	0		
	Client Serving(5GHz)	0	0		
	Monitor	0	0		
	Sensor O	0	0		
	Client Summary				
	Total Clients : 0 Excluded : 0 Disabled : 0 Foreign : 0 Anchor : 0 Local : 0				
Step 6	show license usage				(Optional) Displays license usage information.
•	Example:				

Command or Action	Purpose
Device# show license usage	
License Authorization:	
Status: AUTHORIZED on Oct 04 14:47:22	
2019 IST	
C9800-L performance license	
(LIC_C9800L_PERF):	
Description: C9800-L higher	
performance license	
Count: 2	
Version: 1.0	
Status: AUTHORIZED	
Export status: NOT RESTRICTED	

Verifying Smart Licensing Configurations

To verify the smart licensing status and license usage, use the following command:

```
Device# show license all
Smart Licensing Status
_____
Smart Licensing is ENABLED
Registration:
 Status: UNREGISTERED
 Export-Controlled Functionality: Not Allowed
License Authorization:
 Status: EVAL MODE
 Evaluation Period Remaining: 73 days, 1 hours, 33 minutes, 8 seconds
Utility:
Status: DISABLED
Data Privacy:
 Sending Hostname: yes
   Callhome hostname privacy: DISABLED
   Smart Licensing hostname privacy: DISABLED
 Version privacy: DISABLED
Transport:
 Type: Callhome
License Usage
_____
(AIR network essential):
 Description:
 Count: 1
 Version: 1.0
 Status: EVAL MODE
Product Information
_____
UDI: PID:L-AIR-9500C-K9, SN:9J4FVHMBXCO
Agent Version
_____
Smart Agent for Licensing: 4.5.3 rel/43
Component Versions: SA: (1 3 dev)1.0.15, SI: (dev22)1.2.1, CH: (rel5)1.0.3, PK: (dev18)1.0.3
```

Reservation Info ====== License reservation: DISABLED

To verify the smart licensing status, use the following command:

Device# show license status

```
Tue Oct 02 07:34:36.023 IST
Smart Licensing is ENABLED
Initial Registration: SUCCEEDED on Mon Oct 01 2018 21:55:46 IST
Last Renewal Attempt: None
Registration Expires: Sun Dec 29 2018 11:49:40 IST
License Authorization:
Status: AUTHORIZED on Mon Oct 01 2018 21:55:46 IST
Last Communication Attempt: SUCCEEDED on Mon Oct 01 2018 21:55:46 IST
Next Communication Attempt: Thu Nov 02 2018 21:56:10 IST
Communication Deadline: Sun Dec 29 2018 11:49:16 IST
```

To verify the air license level and smart licensing status, use the following command:

Device# show version AIR License Level: AIR DNA Advantage Next reload AIR license Level: AIR DNA Advantage

Smart Licensing Status: UNREGISTERED/No Licenses in Use