

# Migrate Catalyst License to Smart Licensing Using Policy

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## Introduction

This document describes what to expect after migration from an older license mechanism to new Smart Licensing Using Policy mechanism in Cisco IOS® XE 17.3.2.

## Prerequisites

## Requirements


There are no specific requirements for this document.

## Components Used

The information in this document is based on these hardware versions:

- Cisco Catalyst 9500
- Cisco Catalyst 9300

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 **Note:** The methodology and commands can be applied to other Catalyst 9000 series switches. Consult the appropriate configuration guide for the commands and configurations referred to in this document.

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The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

## Purpose

With the releases of Cisco IOS XE 17.3.2 and 17.4.1, the smart licensing feature has been changed. There is no longer a need to register the licenses of the device with the Cisco Smart Software Manager (CSSM) nor to reserve specific licenses (SLR) from CSSM if the devices are offline. Eval licenses have also been removed. With the Smart Licensing Using Policy, all configured licenses are in use from day zero (the day the Cisco IOS XE 17.3.2 or later image is installed). After that, it is all about reporting license usage to CSSM.

In Smart Licensing Using Policy, no licenses have changed. For Catalyst 9K platforms, all licenses are unenforced, and the previous configurations/topologies for registering licenses are still available. Suppose the devices have already been registered or reserved using a previous Smart License release image. In that case, the licenses automatically get converted to Smart Licensing Using Policy licenses with zero-touch once the image is upgraded to a Smart Licensing Using Policy supported image. If the devices are still using the right-to-use licenses or have Eval or Eval Expired images because smart licensing registration/reservation was not completed, there is a new topology utilizing the Cisco Smart License Utility (CSLU) application for Windows 10 (expect future availability with On-Prem satellite or other controllers such as Cisco DNAC). The CSLU sits between the devices and CSSM. It collects the usage data for all devices and provides a single point of contact to CSSM either offline or online.

## Migrate Smart License Registration (SL) to Smart Licensing Using Policy

With previous smart licensing images (starting with 16.9.1 for all Cat9K switches until 17.3.1), callhome

was enabled by default for connection to CSSM in the cloud. This required the device (single switch, stack, or StackWise Virtual (SVL)) to be connected to the CSSM through the management port or a front panel downlink/uplink port.

If the devices have already been registered, with the smart license transport callhome or smart license transport smart, the conversion to Smart Licensing Using Policy is Zero-Touch. When the device software is upgraded to an image supporting Smart Licensing Using Policy, no configuration change is required in order to support backward compatibility. When the device boots up with the Smart Licensing Using Policy supported image, the idtoken previously used to register the licenses for the Product Instance (PI) is converted to a Trust Code in order to allow communication between the device and CSSM. All licenses are shown as in use instead of Registered and Authorized, and if any Custom Policy is available in the Smart Account, that policy also gets installed. From this point, the license usage for the device gets reported based on the reporting schedule in the policy.

After the conversion to Smart Licensing Using Policy on CSSM, the previous PI is changed from using the hostname to the UDI (PID and serial number) of each of the switches in the PI. For an HA system, the licenses used are all reported in the active switch CSSM PI. The standby and member switches (if available) also have a PI in CSSM but do not report any license usage. If the active switch in an HA system has changed during a reporting period, the license usage is now seen under the new active PI.

## **Show Commands on the Device with Registered Licenses before Upgrade to Smart Licensing Using Policy**

In the **show license** commands output, notice that the licenses are Registered and Authorized as part of Smart Licensing.

```
<#root>
```

```
Switch#
```

```
show license summary
```

```
Smart Licensing is ENABLED
```

```
Registration:
```

```
Status:
```

```
REGISTERED
```

```
Smart Account: BU Production Test
```

```
Virtual Account: Cat9K-FranklinDT
```

```
Export-Controlled Functionality: ALLOWED
```

```
Last Renewal Attempt: None
```

```
Next Renewal Attempt: Mar 21 11:08:58 2021 PST
```

```
License Authorization:
```

Status:

**AUTHORIZED**

Last Communication Attempt: SUCCEEDED  
Next Communication Attempt: Oct 22 11:09:07 2020 PST

License Usage:  
License Entitlement tag Count Status

-----  
C9500 Network Advantage (C9500 Network Advantage) 2 AUTHORIZED  
C9500-DNA-16X-A (C9500-16X DNA Advantage) 2 AUTHORIZED

Switch#

**show license usage**

License Authorization:  
Status:

**AUTHORIZED**

on Sep 22 11:09:07 2020 PST

C9500 Network Advantage (C9500 Network Advantage):  
Description: C9500 Network Advantage  
Count: 2  
Version: 1.0  
Status:

**AUTHORIZED**

Export status: NOT RESTRICTED

C9500-DNA-16X-A (C9500-16X DNA Advantage):  
Description: C9500-DNA-16X-A  
Count: 2  
Version: 1.0  
Status:

**AUTHORIZED**

Export status: NOT RESTRICTED

Switch#

**show license status**

Smart Licensing is ENABLED

Utility:

Status: DISABLED

Data Privacy:

Sending Hostname: yes

Callhome hostname privacy: DISABLED

Smart Licensing hostname privacy: DISABLED

Version privacy: DISABLED

Transport:

Type: Callhome

Registration:

Status: REGISTERED

Smart Account: BU Production Test

Virtual Account: Cat9K-FranklinDT

Export-Controlled Functionality: ALLOWED

Initial Registration: SUCCEEDED on Sep 22 11:08:58 2020 PST

Last Renewal Attempt: None

Next Renewal Attempt: Mar 21 11:08:57 2021 PST

Registration Expires: Sep 22 11:04:23 2021 PST

License Authorization:

Status:

**AUTHORIZED**

on Sep 22 11:09:07 2020 PST

Last Communication Attempt: SUCCEEDED on Sep 22 11:09:07 2020 PST

Next Communication Attempt: Oct 22 11:09:06 2020 PST

Communication Deadline: Dec 21 11:04:34 2020 PST

Export Authorization Key:

Features Authorized:

<none>

Miscellaneous:

Custom Id: <empty>

## **Show Commands on the Device after Boot with the Smart Licensing Using Policy Supported Image**

In the show license outputs, notice that the licenses are now in use instead of Registered and Authorized. Also, the registration idtoken has been automatically used as a trusted code in order to allow communication between CSSM and the device. Also, the Cisco Default policy is installed on the device.

Switch#show license summary

License Usage:

License Entitlement tag Count Status

-----  
network-advantage (C9500 Network Advantage) 2 IN USE  
dna-advantage (C9500-16X DNA Advantage) 2 IN USE

Switch#show license usage

License Authorization:

Status: Not Applicable

network-advantage (C9500 Network Advantage):

Description: network-advantage

Count: 2

Version: 1.0

Status: IN USE

Export status: NOT RESTRICTED

Feature Name: network-advantage

Feature Description: network-advantage

Enforcement type: NOT ENFORCED

License type: Perpetual

dna-advantage (C9500-16X DNA Advantage):

Description: C9500-16X DNA Advantage

Count: 2

Version: 1.0

Status: IN USE

Export status: NOT RESTRICTED

Feature Name: dna-advantage

Feature Description: C9500-16X DNA Advantage

Enforcement type: NOT ENFORCED

License type: Subscription

Switch#show license status

Utility:

Status: DISABLED

Smart Licensing Using Policy:

Status: ENABLED

Data Privacy:

Sending Hostname: yes

Callhome hostname privacy: DISABLED

Smart Licensing hostname privacy: DISABLED

Version privacy: DISABLED

Transport:

Type: Callhome

Policy:

Policy in use: Merged from multiple sources.

Reporting ACK required: yes (CISCO default)

Unenforced/Non-Export Perpetual Attributes:

First report requirement (days): 365 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 90 (CISCO default)

Unenforced/Non-Export Subscription Attributes:

First report requirement (days): 90 (CISCO default)

Reporting frequency (days): 90 (CISCO default)

Report on change (days): 90 (CISCO default)

Enforced (Perpetual/Subscription) License Attributes:\*  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)  
Export (Perpetual/Subscription) License Attributes:\*  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)

Miscellaneous:

Custom Id: <empty>


Usage Reporting:\*\*

Last ACK received: Nov 10 08:56:48 2020 PST  
Next ACK deadline: Feb 08 08:56:48 2021 PST  
Reporting push interval: 30 days  
Next ACK push check: <none>  
Next report push: Dec 10 08:55:29 2020 PST  
Last report push: Nov 10 08:55:29 2020 PST  
Last report file write: <none>

Trust Code Installed:


Active: PID:C9500-16X,SN:FCW2233A5ZV  
INSTALLED on Nov 10 08:54:48 2020 PST  
Standby: PID:C9500-16X,SN:FCW2233A5ZY  
INSTALLED on Nov 10 08:54:48 2020 PST

---

 **Note:** In the command output, the Enforced and Export sections of the policy do not apply to C9K switches as all licenses for switches are Unenforced.

---

---

 **Note:** The table describes each line in the Usage Reporting section.

---

Field	Description
Usage Reporting:	Header for usage reporting (RUM reports) information.
Last ACK received:	Date and time of last ACK received, in the local time zone.
Next ACK deadline:	Date and time for next ACK. If the policy states that an ACK is not required then this field displays <i>none</i> .  <b>Note</b> If an ACK is required and is not received by this deadline, a syslog is displayed.
Reporting Interval:	Reporting interval in days  The value displayed here depends on what you configure in the <b>license smart usage interval</b> <i>interval_in_days</i> and the policy value. For more information, see the corresponding Syntax Default is 30 days
Next ACK push check:	Date and time when the product instance will submit the next polling request for an ACK. Date and time are in the local time zone.  This applies only to product instance- initiated communication to CSSM or CSLU. If the reporting interval is zero, or if no ACK polling is pending, then this field displays <i>none</i> .
Next report push:	Date and time when the product instance will send the next RUM report. Date and time are in the local time zone. If the reporting interval is zero, or if there are no pending RUM reports, then this field displays <i>none</i> .
Last report push:	Date and time for when the product instance sent the last RUM report. Date and time are in the local time zone.
Last report file write:	Date and time for when the product instance last saved an offline RUM report. Date and time are in the local time zone.
Last report pull:	Date and time for when usage reporting information was retrieved using data models. Date and time are in the local time zone.

<#root>

Switch#

**show license udi**

UDI: PID:C9500-16X,SN:FCW2233A5ZV

HA UDI List:

Active:PID:C9500-16X,SN:FCW2233A5ZV

Standby:PID:C9500-16X,SN:FCW2233A5ZY

In CSSM, both Active and Standby UDIs are displayed instead of the PI hostname under the Product Instances tab.

## Smart Software Licensing

Alerts | Inventory | Convert to Smart Licensing | Reports | Preferences | On-Prem Accounts | Activity

Virtual Account: Cat9K-FranklinDT

3 Major 95 Minor 4 Informational Hide Alerts

Name	Product Type	Last Contact	Alerts	Actions
UDI_PID:C9500-16X; UDI_SN:FCW2233A5ZV;	C9500	2020-Nov-10 16:56:12		Actions
UDI_PID:C9500-16X; UDI_SN:FCW2233A5ZY;	C9500	2020-Nov-10 16:55:18		Actions
UDI_PID:C9500-16X; UDI_SN:FCW2240U069;	C9500	2020-Nov-10 16:50:52		Actions
UDI_PID:C9410R; UDI_SN:FXS2232Q01Q;	C9400	2020-Nov-10 15:42:46		Actions
UDI_PID:C9407R; UDI_SN:FXS2119Q2U7;	C9400	2020-Nov-10 12:14:24		Actions

Click the **active PID** in order to display the license usage. Click the High Availability tab in order to display all PIDs included in the HA system.

Cisco Software Central > Smart Software Licensing

BU Production Test

Smart Software Licensing

Feedback Support Help

**UDI\_PID:C9500-16X; UDI\_SN:FCW2233A5ZV;**

Overview High Availability Event Log

**Description**

C9500

**General**

Name: **UDI\_PID:C9500-16X; UDI\_SN:FCW2233A5ZV;**

Product: C9500

Host Identifier: -

MAC Address: -

PID: C9500-16X

Serial Number: FCW2233A5ZV

UUID: -

Virtual Account: Cat9K-FranklinDT

Registration Date: 2020-Nov-10 16:55:17

Last Contact: 2020-Nov-10 16:56:12

**License Usage**

License	Billing	Expires	Required
C9500 Network Advantage	Prepaid	-	2
C9500-DNA-16X-A	Prepaid	-	2

Showing all 2 Rows

Cisco Software Central > Smart Software Licensing BU Production Test  
Feedback Support Help

## Smart Software Licensing

**UDI\_PID:C9500-16X; UDI\_SN:FCW2233A5ZV;**

Overview **High Availability** Event Log

### Standbys

Below are the High Availability standbys configured on the product instance.

Name	Serial Number	PID	Role
-	FCW2233A5ZY	C9500-16X	STANDBY
-	FCW2233A5ZV	C9500-16X	ACTIVE

Showing all 2 Records

Actions ▾

UDI\_PID:C9410R; UDI\_SN:FXS2118Q1GL; C9400 2020-Nov-10 06:24:12 Actions ▾

Click the **Standby switch UDI**, under the **Product Instance** tab, in order to display information for the Standby switch. The standby switch does not display any license usage since license usage for the device is displayed under the Active switch only.

Cisco Software Central > Smart Software Licensing BU Production Test  
Feedback Support Help

## Smart Software Licensing

**UDI\_PID:C9500-16X; UDI\_SN:FCW2233A5ZV;**

Overview High Availability Event Log

### Description

C9500

### General

Name: **UDI\_PID:C9500-16X; UDI\_SN:FCW2233A5ZV;**

Product: C9500

Host Identifier: -

MAC Address: -

PID: C9500-16X

Serial Number: FCW2233A5ZY

UUID: -

Virtual Account: Cat9K-FranklinDT

Registration Date: 2020-Nov-10 16:55:18

Last Contact: 2020-Nov-10 16:55:18

### License Usage

License	Billing	Expires	Required
No Records Found			

Showing all 0 Rows

Once this conversion has occurred, license usage continues to be reported based on the installed policy.

## Downgrade from Smart Licensing Using Policy to Smart License Registration Image

If for some reason, the device must be downgraded to a previous image that does not support the Smart Licensing Using Policy, do not change the configuration and install the image to downgrade too. Depending on the image the device is downgraded to, re-registration can be required on the device. Images that were released prior to the 17.3.2 or 17.4.1 development effort have no understanding of Smart Licensing Using Policy or trust code, therefore, after downgrade a re-registration is required. It is a simple matter of getting the idtoken from CSSM and with the use of the command `license smart register idtoken <idtoken>` all on the device.

The 16.9.6 and later, 16.12.4 and later, and 17.3.1 images have code added in order to recognize the trust code and convert it back to the registration idtoken upon image downgrade. The licenses are automatically placed back in the REGISTERED state and AUTHORIZED.

## Migrate SLR to Smart Licensing Using Policy

Customers do not always want to connect the CSSM or the outside due to various reasons. For this, an offline Specific License Reservation (SLR) feature was added in order to allow the switches to be in compliance. The article [describes this](#) and the document [Specific License Reservation](#) can be used in order to learn more about it. SLR is available from the 16.9.1 release until the 17.3.1 release.

When a device that has specific license reservations installed is upgraded to a Smart Licensing Using Policy supported image, the license conversion is automatic, and nothing more needs to happen at this time. The licenses are now in use and indicate they were authorized previously with SLR. However, at a later date as indicated by the installed policy, the license usage can need to be reported as shown later in this section.

## Show Commands on the Device with an Older Smart License Supported Image

```
<#root>
```

```
Switch#
```

```
show license summary
```

```
Smart Licensing is ENABLED  
License Reservation is ENABLED  
Registration:  
  Status:
```

```
REGISTERED - SPECIFIC LICENSE RESERVATION
```

```
  Export-Controlled Functionality: ALLOWED  
License Authorization:  
  Status:
```

```
AUTHORIZED - RESERVED
```

License Usage:

License	Entitlement tag	Count	Status
-----			
C9500 Network Advantage	(C9500 Network Advantage)	2	

**AUTHORIZED**

C9500-DNA-16X-A	(C9500-16X DNA Advantage)	2	
-----------------	---------------------------	---	--

**AUTHORIZED**

Switch#

**show license reservation**

License reservation: ENABLED

Overall status:

Active: PID:C9500-16X,SN:FCW2233A5ZV

Reservation status: SPECIFIC INSTALLED on Aug 31 10:15:01 2020 PDT

Export-Controlled Functionality: ALLOWED

Last Confirmation code: 4bfbea7f

Standby: PID:C9500-16X,SN:FCW2233A5ZY

Reservation status: SPECIFIC INSTALLED on Aug 31 10:15:01 2020 PDT

Export-Controlled Functionality: ALLOWED

Last Confirmation code: 9394f196

Specified license reservations:

C9500 Network Advantage (C9500 Network Advantage):

Description: C9500 Network Advantage

Total reserved count: 2

Term information:

Active: PID:C9500-16X,SN:FCW2233A5ZV

License type: PERPETUAL

Term Count: 1

Standby: PID:C9500-16X,SN:FCW2233A5ZY

License type: PERPETUAL

Term Count: 1

C9500-DNA-16X-A (C9500-16X DNA Advantage):

Description: C9500-DNA-16X-A

Total reserved count: 2

Term information:

Active: PID:C9500-16X,SN:FCW2233A5ZV

License type: TERM

Start Date: 2020-MAR-17 UTC

End Date: 2021-MAR-17 UTC

Term Count: 1

Standby: PID:C9500-16X,SN:FCW2233A5ZY

License type: TERM

Start Date: 2020-MAR-17 UTC

End Date: 2021-MAR-17 UTC

Term Count: 1

Switch#

```
show license status
```

```
Smart Licensing is ENABLED
```

```
Utility:
```

```
Status: DISABLED
```

```
License Reservation is ENABLED
```

```
Data Privacy:
```

```
Sending Hostname: yes
```

```
Callhome hostname privacy: DISABLED
```

```
Smart Licensing hostname privacy: DISABLED
```

```
Version privacy: DISABLED
```

```
Transport:
```

```
Type: Callhome
```

```
Registration:
```

```
Status:
```

```
REGISTERED - SPECIFIC LICENSE RESERVATION
```

```
Export-Controlled Functionality: ALLOWED
```

```
Initial Registration: SUCCEEDED on Aug 31 11:07:39 2020 PDT
```

```
License Authorization:
```

```
Status:
```

```
AUTHORIZED - RESERVED
```

```
on Aug 31 10:15:01 2020 PDT
```

```
Export Authorization Key:
```

```
Features Authorized:
```

```
<none>
```

## **Show Commands on the Device after Booting with the Smart Licensing Using Policy Supported Image**

The show commands display the licenses as in use and indicate they were previously authorized by Specific License Reservation. The Cisco Default policy is in use.

```
<#root>
```

```
Switch#
```

```
show license summary
```

```
License Reservation is ENABLED
```

License Usage:

License	Entitlement tag	Count	Status
network-advantage	(C9500 Network Advantage)	2	

IN USE

dna-advantage	(C9500-16X DNA Advantage)	2	
---------------	---------------------------	---	--

IN USE

Switch#

show license all

Smart Licensing Status

=====

Smart Licensing is ENABLED  
License Reservation is ENABLED

Export Authorization Key

Features Authorized:  
<none>

Utility:

Status: DISABLED

Smart Licensing Using Policy:

Status: ENABLED

Data Privacy:

Sending Hostname: yes  
Callhome hostname privacy: DISABLED  
Smart Licensing hostname privacy: DISABLED  
Version privacy: DISABLED

Transport:

Type: Transport Off

Miscellaneous:

Custom Id: <empty>

Policy:

Policy in use: Merged from multiple sources.  
Reporting ACK required: yes (CISCO default)  
Unenforced/Non-Export Perpetual Attributes:  
First report requirement (days): 365 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Unenforced/Non-Export Subscription Attributes:  
First report requirement (days): 90 (CISCO default)  
Reporting frequency (days): 90 (CISCO default)  
Report on change (days): 90 (CISCO default)

Enforced (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)  
Export (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)

Usage Reporting:

Last ACK received: <none>  
Next ACK deadline: Nov 29 10:50:05 2020 PDT  
Reporting Interval: 30  
Next ACK push check: <none>  
Next report push: Aug 31 10:52:05 2020 PDT  
Last report push: <none>  
Last report file write: <none>

Trust Code Installed: <none>

License Usage

=====

network-advantage (C9500 Network Advantage):

Description: network-advantage  
Count: 2  
Version: 1.0  
Status: IN USE  
Export status: NOT RESTRICTED  
Feature Name: network-advantage  
Feature Description: network-advantage  
Enforcement type: NOT ENFORCED  
License type: Perpetual  
Reservation:  
Reservation status:

**SPECIFIC INSTALLED**

Total reserved count: 2

dna-advantage (C9500-16X DNA Advantage):

Description: C9500-16X DNA Advantage  
Count: 2  
Version: 1.0  
Status:

**IN USE**

Export status: NOT RESTRICTED  
Feature Name: dna-advantage  
Feature Description: C9500-16X DNA Advantage  
Enforcement type: NOT ENFORCED  
License type: Subscription  
Reservation:  
Reservation status:

**SPECIFIC INSTALLED**

Total reserved count: 2

Product Information

=====

UDI: PID:C9500-16X,SN:FCW2233A5ZV

HA UDI List:

Active:PID:C9500-16X,SN:FCW2233A5ZV

Standby:PID:C9500-16X,SN:FCW2233A5ZY

Agent Version

=====

Smart Agent for Licensing: 5.0.5\_rel/42

License Authorizations

=====

Overall status:

Active: PID:C9500-16X,SN:FCW2233A5ZV

Status:

**SPECIFIC INSTALLED**

on Aug 31 10:15:01 2020 PDT

Last Confirmation code: 4bfbea7f

Standby: PID:C9500-16X,SN:FCW2233A5ZY

Status:

**SPECIFIC INSTALLED**

on Aug 31 10:15:01 2020 PDT

Last Confirmation code: 9394f196

Specified license reservations:

C9500 Network Advantage (C9500 Network Advantage):

Description: C9500 Network Advantage

Total reserved count: 2

Enforcement type: NOT ENFORCED

Term information:

Active: PID:C9500-16X,SN:FCW2233A5ZV

Authorization type:

**SPECIFIC INSTALLED**

on Aug 31 10:15:01 2020 PDT

License type: PERPETUAL

Term Count: 1

Standby: PID:C9500-16X,SN:FCW2233A5ZY

Authorization type:

**SPECIFIC INSTALLED**

on Aug 31 10:15:01 2020 PDT

License type: PERPETUAL

Term Count: 1

C9500-DNA-16X-A (C9500-16X DNA Advantage):

Description: C9500-DNA-16X-A

Total reserved count: 2  
Enforcement type: NOT ENFORCED  
Term information:  
Active: PID:C9500-16X,SN:FCW2233A5ZV  
Authorization type:

**SPECIFIC INSTALLED**

on Aug 31 10:15:01 2020 PDT  
License type: PERPETUAL  
Term Count: 1  
Standby: PID:C9500-16X,SN:FCW2233A5ZY  
Authorization type:

**SPECIFIC INSTALLED**

on Aug 31 10:15:01 2020 PDT  
License type: PERPETUAL  
Term Count: 1

**Purchased Licenses:**

No Purchase Information Available

**Derived Licenses:**

Entitlement Tag: regid.2017-03.com.cisco.advantagek9-Nyquist-C9500,1.0\_f1563759-2e03-4a4c-bec5-5feec5  
Entitlement Tag: regid.2017-07.com.cisco.C9500-DNA-16X-A,1.0\_ef3574d1-156b-486a-864f-9f779ff3ee49

Switch#

**show license status**

**Utility:**

Status: DISABLED

License Reservation is ENABLED

**Data Privacy:**

Sending Hostname: yes  
Callhome hostname privacy: DISABLED  
Smart Licensing hostname privacy: DISABLED  
Version privacy: DISABLED

**Transport:**

Type: Transport Off

**Policy:**

Policy in use: Merged from multiple sources.  
Reporting ACK required: yes (CISCO default)  
Unenforced/Non-Export Perpetual Attributes:  
First report requirement (days): 365 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Unenforced/Non-Export Subscription Attributes:  
First report requirement (days): 90 (CISCO default)

Reporting frequency (days): 90 (CISCO default)  
 Report on change (days): 90 (CISCO default)  
 Enforced (Perpetual/Subscription) License Attributes:  
 First report requirement (days): 0 (CISCO default)  
 Reporting frequency (days): 0 (CISCO default)  
 Report on change (days): 0 (CISCO default)  
 Export (Perpetual/Subscription) License Attributes:  
 First report requirement (days): 0 (CISCO default)  
 Reporting frequency (days): 0 (CISCO default)  
 Report on change (days): 0 (CISCO default)

Miscellaneous:

Custom Id: <empty>

Usage Reporting:

Last ACK received: <none>  
 Next ACK deadline: Nov 29 10:50:05 2020 PDT  
 Reporting Interval: 30  
 Next ACK push check: <none>  
 Next report push: Aug 31 10:52:05 2020 PDT  
 Last report push: <none>  
 Last report file write: <none>

Trust Code Installed: <none>

In CSSM, the PIs have not changed and indicate Reserved Licenses since there has been no usage reported to this point. Usage reporting is not required until the policy indicates or Syslog messages are received.

The screenshot shows the 'Smart Software Licensing' interface. At the top, there are navigation tabs: Alerts, Inventory, Convert to Smart Licensing, Reports, Preferences, On-Prem Accounts, and Activity. Below this, the 'Virtual Account' is set to 'SLE\_Test'. There are indicators for 4 Minor and 9 Informational alerts, and a 'Hide Alerts' button. The main content area has tabs for General, Licenses, Product Instances, and Event Log. The 'Product Instances' tab is active, showing a table with columns: Name, Product Type, Last Contact, Alerts, and Actions. Two rows are highlighted with a red box:

Name	Product Type	Last Contact	Alerts	Actions
UDI_PID:C9500-16X; UDI_SN:FCW2233A5ZY;	C9500	2020-Sep-25 18:01:41 (Reserved Licenses)		Actions
UDI_PID:C9500-16X; UDI_SN:FCW2233A5ZV;	C9500	2020-Sep-25 18:00:24 (Reserved Licenses)		Actions
UDI_PID:C9407R; UDI_SN:FXS2119Q2U7;	C9400	2020-Sep-25 17:21:27		Actions
svl_10	C9400	2020-Sep-25 15:08:42		Actions
UDI_PID:C9300-48T; UDI_SN:FOC2236Z0P2;	C9300	2020-Sep-25 12:09:59		Actions

## Reporting Usage at a Later Date when Required Based on Policy

At a later date, the device can be required to report usage if Cisco DNA licenses are in use. This can still be done in offline mode as well. However, for an HA system, only one report file is required for the full device. Use the command `license smart save usage` CLI in order to create the report file to be used in CSSM. Then copy the file to a place accessible by CSSM.

```
Switch#license smart save usage unreported file flash:RUM-usage-20200925.txt
Switch#copy flash:RUM-usage-20200925.txt tftp://172.27.18.5//auto/tftp-sjc-users2/byodis/
Address or name of remote host [172.27.18.5]?
Destination filename [/auto/tftp-sjc-users2/byodis/RUM-usage-20200925.txt]?
!!
15128 bytes copied in 0.161 secs (93963 bytes/sec)
```

Now open CSSM, and click the Report tab in the **Reports** window. Now, click the Usage Data Files tab and then click the Upload Usage Data button in order to upload the usage report file. It asks for the Virtual Account to install, so ensure to choose the correct one. Wait for the report to finish processing (click the Usage Data Files tab in order to refresh the screen and see if it has been completed). If the reporting is successful, the status indicates **No errors** and a Download ACK file is available to download and install on the device indicating that the usage was received and reported successfully.

Smart Software Licensing

Alerts | Inventory | Convert to Smart Licensing | **Reports** | Preferences | On-Prem Accounts | Activity

Reports

Report | **Usage Data Files** | Reporting Policy

Devices can be configured to report the features that they are using. This usage then determines which licenses are needed, in order to be compliant.

Upload Usage Data... Search by File Name, Virtual Account

Usage Data File	Reported	Virtual Account	Reporting Status	Devices	Acknowledgement
RUM-usage-20200925.txt	2020-Sep-25	SLE_Test	No Errors	1	Download
sle_usage_top_7slot_20200924	2020-Sep-25	SLE_Test	Errors (1)	1	Download
sle_usage_top_7slot_20200924	2020-Sep-25	SLE_Test	Errors (1)	1	Download
usage	2020-Sep-24	SLE_Test	No Errors	1	Download

Copy this download file to the device or someplace accessible by the device and use the command `license smart import` in order to import the **ACK** file to the device.

```
Switch#license smart import tftp://172.27.18.5//auto/tftp-sjc-users2/byodis/ACK_RUM-usage-20200925.txt
Import Data Successful
```

The output of `show license status` indicates that the ACK was recorded at the correct time.

```
<#root>
```

```
Switch#
```

```
show license status
```

```
Utility:
```

```
Status: DISABLED
```

Smart Licensing Using Policy:  
Status: ENABLED

License Reservation is ENABLED

Data Privacy:  
Sending Hostname: yes  
Callhome hostname privacy: DISABLED  
Smart Licensing hostname privacy: DISABLED  
Version privacy: DISABLED

Transport:  
Type: Off

Policy:  
Policy in use: Merged from multiple sources.  
Reporting ACK required: yes (CISCO default)  
Unenforced/Non-Export Perpetual Attributes:  
First report requirement (days): 365 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Unenforced/Non-Export Subscription Attributes:  
First report requirement (days): 90 (CISCO default)  
Reporting frequency (days): 90 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Enforced (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)  
Export (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)

Miscellaneous:  
Custom Id: <empty>

Usage Reporting:

Last ACK received: Sep 25 10:12:15 2020 PST






Next ACK deadline: Dec 24 10:12:15 2020 PST  
Reporting push interval: 30 days  
Next ACK push check: Sep 25 07:55:35 2020 PST  
Next report push: Sep 25 10:12:46 2020 PST  
Last report push: Sep 25 07:54:33 2020 PST  
Last report file write: <none>

Trust Code Installed: <none>

In CSSM, the PIs no longer show Reserved Licenses and license usage is only seen in the Active PI.

Virtual Account: SLE\_Test ▾

4 Minor 9 Informational Hide Alerts

Name	Product Type	Last Contact ▾	Alerts	Actions
UDI_PID:C9500-16X; UDI_SN:FCW2233A5ZV; 	C9500	2020-Sep-25 17:03:20		Actions ▾
UDI_PID:C9500-16X; UDI_SN:FCW2233A5ZY; 	-	2020-Sep-25 17:03:18		Actions ▾
UDI_PID:C9407R; UDI_SN:FXS2119Q2U7; 	C9400	2020-Sep-25 16:59:37		Actions ▾
svl_10	C9400	2020-Sep-25 15:08:42		Actions ▾
UDI_PID:C9300-48T; UDI_SN:FOC2236Z0P2; 	C9300	2020-Sep-25 12:09:59		Actions ▾
UDI_PID:C9300-24P; UDI_SN:FOC2237U0G2; 	C9300	2020-Sep-25 12:09:59		Actions ▾

## Downgrade from Smart Licensing Using Policy to Specific License Reservation Supported Image

If an image is downgraded to a version that does not support Smart Licensing Using Policy but does support SLR, all that is needed is to perform the downgrade on the image. The licenses stay as reserved and authorized - nothing else is required.

## Migrate Eval or Eval Expired to Smart Licensing Using Policy

Starting with the 16.9.1 release until the 17.3.1 release, if the licenses were not registered or released, they are by default Eval licenses. After 90 days they become Eval Expired licenses. Both indicate the licenses were OUT OF COMPLIANCE. Since all licenses are unenforced, no feature functionality is lost on the device.

Smart Licensing Using Policy no longer has evaluation states for licenses. Therefore, if any devices have Eval or Eval Expired licenses when the devices are upgraded to a Smart Licensing Using Policy supported image, all those licenses are seen as in use and the Cisco default policy is applied. The licenses are no longer displayed as UNAUTHORIZED or OUT OF COMPLIANCE.

## Show Commands for Smart Licenses in Eval/Eval Expired Mode

```
<#root>
```

```
Switch#
```

```
show license summary
```

```
Smart Licensing is ENABLED
```

Registration:  
Status:

UNREGISTERED

Export-Controlled Functionality: NOT ALLOWED

License Authorization:  
Status:

EVAL MODE

Evaluation Period Remaining: 89 days, 21 hours, 37 minutes, 30 seconds

License Usage:  
License Entitlement tag Count Status

-----  
(C9500 Network Advantage) 2

EVAL MODE

(C9500-16X DNA Advantage) 2

EVAL MODE

Switch#

show license usage

License Authorization:  
Status: EVAL MODE

Evaluation Period Remaining: 89 days, 21 hours, 37 minutes, 21 seconds

(C9500 Network Advantage):

Description:

Count: 2

Version: 1.0

Status:

EVAL MODE

Export status: NOT RESTRICTED

(C9500-16X DNA Advantage):

Description:  
Count: 2  
Version: 1.0  
Status:

**EVAL MODE**

Export status: NOT RESTRICTED

Switch#

**show license status**

Smart Licensing is ENABLED

Utility:

Status: DISABLED

Data Privacy:

Sending Hostname: yes

Callhome hostname privacy: DISABLED

Smart Licensing hostname privacy: DISABLED

Version privacy: DISABLED

Transport:

Type: Callhome

Registration:

Status:

**UNREGISTERED**

Export-Controlled Functionality: NOT ALLOWED

License Authorization:

Status:

**EVAL MODE**

Evaluation Period Remaining: 89 days, 21 hours, 37 minutes, 15 seconds

Export Authorization Key:

Features Authorized:

<none>

Miscellaneous:

Custom Id: <empty>

**Show Commands for Smart License Smart Licensing Using Policy after the Upgrade**

## but Usage Not Reported Yet

<#root>

Switch#

**show license summary**

License Usage:  
License Entitlement tag Count Status

-----  
network-advantage (C9500 Network Advantage) 2

**IN USE**

dna-advantage (C9500-16X DNA Advantage) 2

**IN USE**

Switch#

**show license usage**

License Authorization:  
Status:

**Not Applicable**

network-advantage (C9500 Network Advantage):

Description: network-advantage

Count: 2

Version: 1.0

Status:

**IN USE**

Export status: NOT RESTRICTED

Feature Name: network-advantage

Feature Description: network-advantage

Enforcement type: NOT ENFORCED

License type: Perpetual

dna-advantage (C9500-16X DNA Advantage):

Description: C9500-16X DNA Advantage

Count: 2  
Version: 1.0  
Status:

**IN USE**

Export status: NOT RESTRICTED  
Feature Name: dna-advantage  
Feature Description: C9500-16X DNA Advantage  
Enforcement type: NOT ENFORCED  
License type: Subscription

Switch#

**show license status**

Utility:  
Status: DISABLED

Smart Licensing Using Policy:  
Status: ENABLED

Data Privacy:  
Sending Hostname: yes  
Callhome hostname privacy: DISABLED  
Smart Licensing hostname privacy: DISABLED  
Version privacy: DISABLED

Transport:  
Type: Transport Off

Policy:  
Policy in use: Merged from multiple sources.  
Reporting ACK required: yes (CISCO default)  
Unenforced/Non-Export Perpetual Attributes:  
First report requirement (days): 365 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Unenforced/Non-Export Subscription Attributes:  
First report requirement (days): 90 (CISCO default)  
Reporting frequency (days): 90 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Enforced (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)  
Export (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)

Miscellaneous:  
Custom Id: <empty>

Usage Reporting:  
Last ACK received: <none>

Next ACK deadline: Feb 08 08:27:59 2021 PST  
Reporting push interval: 30 days  
Next ACK push check: <none>  
Next report push: Nov 10 08:29:59 2020 PST  
Last report push: <none>  
Last report file write: <none>

Trust Code Installed: <none>

## Show Commands for Smart Licensing Using Policy after Connecting to CSLU and Reporting Usage

As the Policy in the `show license status` output indicates, subscription licenses (dna-advantage and dna-essentials) are required to report in 90 days. Any of the various supported usage reporting topologies can be used. See the Smart Licensing Using Policy configuration guide. Also, some links are provided at the end of this article for helpful videos and documentation. The example here is using the CSLU PUSH model with explicit configuration to the CSLU server that is installed on a Windows 10 machine (laptop, server, VM). The CSLU download, installation guide, and user guide can be found at [Software Download - Smart Software Manager Release 2.5.2](#)

```
<#root>
```

```
Switch#
```

```
show running-config all | include cslu
```

```
license smart transport cslu
```

```
Switch#
```

```
Switch#configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Switch(config)#
```

```
license smart url cslu http://10.24.74.180:8182/cslu/v1/pi
```

```
Switch(config)#^Z
```

```
Switch#
```

```
Switch#write memory
```

```
Building configuration...
```

```
[OK]
```

```
Switch#
```

```
show running-config all | include cslu
```

```
license smart url cslu http://10.24.74.180:8182/cslu/v1/pi
```

```
license smart transport cslu
```

```
Switch#
```

To force the license usage to be reported use the "license smart sync" command.

```
Switch#
```

```
license smart sync all
```

Switch#

\*Sep 22 10:48:36.050 PST: %SMART\_LIC-5-COMM\_RESTORED: Communications with Cisco Smart License Utility (

Note: Use the "all" option for HA device. Use "local" option for standalone switch

Switch#

**show license summary**

License Usage:

License Entitlement tag Count Status

-----  
network-advantage (C9500 Network Advantage) 2

**IN USE**

dna-advantage (C9500-16X DNA Advantage) 2

**IN USE**

Switch#

**show license usage**

License Authorization:

Status: Not Applicable

network-advantage (C9500 Network Advantage):

Description: network-advantage

Count: 2

Version: 1.0

Status:

**IN USE**

Export status: NOT RESTRICTED

Feature Name: network-advantage

Feature Description: network-advantage

Enforcement type: NOT ENFORCED

License type: Perpetual

dna-advantage (C9500-16X DNA Advantage):

Description: C9500-16X DNA Advantage

Count: 2

Version: 1.0

Status:

**IN USE**

Export status: NOT RESTRICTED  
Feature Name: dna-advantage  
Feature Description: C9500-16X DNA Advantage  
Enforcement type: NOT ENFORCED  
License type: Subscription

Switch#

**show license status**

Utility:

Status: DISABLED

Smart Licensing Using Policy:

Status: ENABLED

Data Privacy:

Sending Hostname: yes

Callhome hostname privacy: DISABLED

Smart Licensing hostname privacy: DISABLED

Version privacy: DISABLED

Transport:

Type: cslu

Cslu address: <http://10.24.74.180:8182/cslu/v1/pi>

Proxy:

Not Configured

Policy:

Policy in use: Merged from multiple sources.

Reporting ACK required: yes (CISCO default)

Unenforced/Non-Export Perpetual Attributes:

First report requirement (days): 365 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 90 (CISCO default)

Unenforced/Non-Export Subscription Attributes:

First report requirement (days): 90 (CISCO default)

Reporting frequency (days): 90 (CISCO default)

Report on change (days): 90 (CISCO default)

Enforced (Perpetual/Subscription) License Attributes:

First report requirement (days): 0 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 0 (CISCO default)

Export (Perpetual/Subscription) License Attributes:

First report requirement (days): 0 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 0 (CISCO default)

Miscellaneous:

Custom Id: <empty>

Usage Reporting:

Last ACK received: Nov 10 08:56:48 2020 PST

Next ACK deadline: Feb 08 08:56:48 2021 PST

Reporting push interval: 30 days

Next ACK push check: <none>

Next report push: Dec 10 08:55:29 2020 PST

Last report push: Nov 10 08:55:29 2020 PST  
Last report file write: <none>

Trust Code Installed: <none>

## Downgrade from Smart Licensing Using Policy Image to Image Supporting Eval or Eval Licenses

If an image downgrade is required to an image that does not support SL Using Policy, the licenses revert back to Eval or Eval expired. The original Evaluation Period Remaining is maintained. Since all Cat9K licenses are unenforced, no functionality is lost.

## Migrate RTU License to Smart Licensing Using Policy

Right-to-Use (RTU) Licensing was an initial licensing scheme for C9300, C9400, and C9500 up through release 16.8.1a. Smart licensing was not available until 16.9.1.

All licenses are still the same but use older `license right-to-use` commands for configuration and show commands. Once the image is upgraded to a Smart Licensing Using Policy-supported images, the licenses are in use, the same as is seen with Eval/Eval mode. If there are any Cisco DNA licenses in use, the Cisco Default policy requires usage reporting in 90 days. Any of the different topologies supported for reporting usage with Smart Licensing Using Policy image can be used.

### Show Commands on the Device with RTU Licensing

```
<#root>
```

```
Switch#
```

```
show license right-to-use summary
```

```
License Name Type Period left
```

```
-----  
network-essentials Permanent Lifetime  
dna-essentials Subscription CSSM Managed  
-----
```

```
License Level In Use: network-essentials+dna-essentials Subscription  
License Level on Reboot: network-essentials+dna-essentials Subscription
```

```
Switch#
```

```
show license right-to-use
```

Slot# License Name Type Period left

-----

1 network-essentials Permanent Lifetime

1 dna-essentials Subscription CSSM Managed

-----  
License Level on Reboot: network-essentials+dna-essentials Subscription

Slot# License Name Type Period left

-----

2 network-essentials Permanent Lifetime

2 dna-essentials Subscription CSSM Managed

-----  
License Level on Reboot: network-essentials+dna-essentials Subscription

Slot# License Name Type Period left

-----

3 network-essentials Permanent Lifetime

3 dna-essentials Subscription CSSM Managed

-----  
License Level on Reboot: network-essentials+dna-essentials Subscription

Switch#

show license right-to-use usage

Slot# License Name Type usage-duration(y:m:d) In-Use EULA

-----

1 network-essentials Permanent 00:00:00 yes yes

1 network-essentials Evaluation 00:00:00 no no

1 network-essentials Subscription 00:00:00 no no  
1 network-advantage Permanent 00:00:00 no no  
1 network-advantage Evaluation 00:00:00 no no  
1 network-advantage Subscription 00:00:00 no no  
1 dna-essentials Evaluation 00:00:00 no no

1 dna-essentials Subscription 00:00:00 yes yes

1 dna-advantage Evaluation 00:00:00 no no  
1 dna-advantage Subscription 00:00:00 no no

-----  
Slot# License Name Type usage-duration(y:m:d) In-Use EULA  
-----

2 network-essentials Permanent 00:00:00 yes yes

2 network-essentials Evaluation 00:00:00 no no  
2 network-essentials Subscription 00:00:00 no no  
2 network-advantage Permanent 00:00:00 no no  
2 network-advantage Evaluation 00:00:00 no no  
2 network-advantage Subscription 00:00:00 no no  
2 dna-essentials Evaluation 00:00:00 no no

2 dna-essentials Subscription 00:00:00 yes yes

2 dna-advantage Evaluation 00:00:00 no no  
2 dna-advantage Subscription 00:00:00 no no

-----  
Slot# License Name Type usage-duration(y:m:d) In-Use EULA  
-----

3 network-essentials Permanent 00:00:00 yes yes

3 network-essentials Evaluation 00:00:00 no no  
3 network-essentials Subscription 00:00:00 no no  
3 network-advantage Permanent 00:00:00 no no  
3 network-advantage Evaluation 00:00:00 no no  
3 network-advantage Subscription 00:00:00 no no  
3 dna-essentials Evaluation 00:00:00 no no

3 dna-essentials Subscription 00:00:00 yes yes

3 dna-advantage Evaluation 00:00:00 no no  
3 dna-advantage Subscription 00:00:00 no no

**Show Commands on the Device after Upgrading from RTU to Smart Licensing Using Policy Supported Image**

<#root>

Switch#

show license summary

License Usage:

License	Entitlement Tag	Count	Status
network-advantage	(C9300-24 Network Advan...)	2	

IN USE

dna-advantage	(C9300-24 DNA Advantage)	2	
---------------	--------------------------	---	--

IN USE

network-advantage	(C9300-48 Network Advan...)	1	
-------------------	-----------------------------	---	--

IN USE

dna-advantage	(C9300-48 DNA Advantage)	1	
---------------	--------------------------	---	--

IN USE

Switch#

show license usage

License Authorization:

Status: Not Applicable

network-advantage (C9300-24 Network Advantage):

Description: C9300-24 Network Advantage

Count: 2

Version: 1.0

Status:

IN USE

Export status: NOT RESTRICTED

Feature Name: network-advantage

Feature Description: C9300-24 Network Advantage

Enforcement type: NOT ENFORCED

License type: Perpetual

dna-advantage (C9300-24 DNA Advantage):

Description: C9300-24 DNA Advantage

Count: 2

Version: 1.0

Status:

**IN USE**

Export status: NOT RESTRICTED

Feature Name: dna-advantage

Feature Description: C9300-24 DNA Advantage

Enforcement type: NOT ENFORCED

License type: Subscription

network-advantage (C9300-48 Network Advantage):

Description: C9300-48 Network Advantage

Count: 1

Version: 1.0

Status:

**IN USE**

Export status: NOT RESTRICTED

Feature Name: network-advantage

Feature Description: C9300-48 Network Advantage

Enforcement type: NOT ENFORCED

License type: Perpetual

dna-advantage (C9300-48 DNA Advantage):

Description: C9300-48 DNA Advantage

Count: 1

Version: 1.0

Status:

**IN USE**

Export status: NOT RESTRICTED

Feature Name: dna-advantage

Feature Description: C9300-48 DNA Advantage

Enforcement type: NOT ENFORCED

License type: Subscription

Switch#

**show license status**

Utility:

Status: DISABLED

Smart Licensing Using Policy:

Status: ENABLED

Data Privacy:

Sending Hostname: yes  
Callhome hostname privacy: DISABLED  
Smart Licensing hostname privacy: DISABLED  
Version privacy: DISABLED

Transport:

Type: Transport Off

Policy:

Policy in use: Merged from multiple sources.  
Reporting ACK required: yes (CISCO default)  
Unenforced/Non-Export Perpetual Attributes:  
First report requirement (days): 365 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Unenforced/Non-Export Subscription Attributes:  
First report requirement (days): 90 (CISCO default)  
Reporting frequency (days): 90 (CISCO default)  
Report on change (days): 90 (CISCO default)  
Enforced (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)  
Export (Perpetual/Subscription) License Attributes:  
First report requirement (days): 0 (CISCO default)  
Reporting frequency (days): 0 (CISCO default)  
Report on change (days): 0 (CISCO default)

Miscellaneous:

Custom Id: <empty>

Usage Reporting:

Last ACK received: <none>  
Next ACK deadline: Feb 08 08:27:59 2021 PST  
Reporting push interval: 20 days  
Next ACK push check: <none>  
Next report push: Nov 10 08:29:59 2020 PST  
Last report push: <none>  
Last report file write: <none>

Trust Code Installed: <none>

These show commands were performed after an upgrade to a Smart Licensing Using Policy-supported image but have not reported usage to CSSM yet. Licenses are all converted to Smart Licensing Using Policy showing IN USE and using the Cisco default policy. If using a subscription license, usage reporting is required in 90 days. After that, Syslog messages are sent from CSSM. However, no feature functionality is lost since all C9K licenses are unenforced.

When required to report, any of the topologies described in the Smart Licensing Using Policy configuration guide can be used. The license show command outputs are similar to those described in this document . Depending on the topology used, some output can differ.

## **Downgrade from Smart Licensing Using Policy Image to Image Supporting RTU Licenses**

If the Cisco IOS XE image needs to be downgraded back to an image prior to 16.9.1, the licenses and feature functionality are preserved. However, any smart licensing configurations are not known and are not saved.

## Downgrade from Smart Licensing Using Policy Image to Image Supporting Smart License

If a device is migrated from an image that supports RTU to a Smart Licensing Using Policy supported image and is later downgraded to an image that supports smart licensing prior to 17.3.2 and 17.4.1, the licenses on those devices require registration or specific license reservation operation to be performed.

## Smart Licensing Using Policy Custom Policies

It is possible that the company can have negotiated a custom policy with Cisco. If that is the case, Cisco installs that policy into the Smart Account. There can be only one custom policy per Smart Account and it is applied to all Virtual Accounts within that Smart Account. In order to tell if a custom policy is in effect in CSSM, open the **Reports** view and click the Reporting Policy tab. There can be more than one version, however, only the latest version is available to install.

The screenshot shows the Cisco Software Central interface for Smart Software Licensing. The breadcrumb trail is "Cisco Software Central > Smart Software Licensing". The page title is "Smart Software Licensing". There are navigation tabs for Alerts, Inventory, Convert to Smart Licensing, Reports (highlighted with a red box), Preferences, On-Prem Accounts, and Activity. Below the tabs, there are sub-tabs for Report, Usage Data Files, and Reporting Policy (highlighted with a red box). The Reporting Policy section contains a description: "This policy defines how often devices will report their feature usage. It overrides the default policy that is configured on the devices." Below this is a table with columns for Policy, Version, and Actions. The table lists several custom policies, with the most recent one (Version 6) highlighted by a red box.

Policy	Version	Actions
Custom Policy	6	View   Download
Custom policy	09-Jun-2020	
Custom Policy	5	View
Custom policy	08-Jun-2020	
Custom Policy	4	View
Custom policy	08-Jun-2020	
Custom Policy	3	View
Custom policy	08-Jun-2020	
Custom Policy	2	View
Custom policy	08-Jun-2020	
Custom Policy	1	View
Custom policy	05-Jun-2020	

If there is a custom policy installed in the Smart Account, it is installed when the license usage report is

performed. The new custom policy can be seen using the exec command `show license status`. Instead of Cisco Default, the custom policy is displayed. Depending on what was defined in the custom policy, a mix of custom and default values can be seen. Any fields not defined in the custom policy continue to have the Cisco default values.

If the offline topology or CSLU offline with CSSM topology is used, then the custom policy can be downloaded from CSSM to the file/location accessible by the device. The custom policy can then be installed on the device with the exec command `license smart import <device:path/file>`.

```
<#root>
```

```
Switch#
```

```
show license status
```

```
Utility:
```

```
  Status: DISABLED
```

```
Smart Licensing Using Policy:
```

```
  Status: ENABLED
```

```
Data Privacy:
```

```
  Sending Hostname: yes
```

```
    Callhome hostname privacy: DISABLED
```

```
    Smart Licensing hostname privacy: DISABLED
```

```
  Version privacy: DISABLED
```

```
Transport:
```

```
  Type: Transport Off
```

```
Policy:
```

```
Policy in use: Installed On Nov 09 09:09:36 2020 PST
```

```
Policy name: Custom Policy
```

```
Reporting ACK required: yes (
```

```
Customer Policy
```

```
)
```

```
Unenforced/Non-Export Perpetual Attributes:
```

```
First report requirement (days):
```

```
60 (Customer Policy)
```

```
Reporting frequency (days):
```

60 (Customer Policy)

Report on change (days):

60 (Customer Policy)

Unenforced/Non-Export Subscription Attributes:

First report requirement (days):

30 (Customer Policy)

Reporting frequency (days):

30 (Customer Policy)

Report on change (days):

30 (Customer Policy)

Enforced (Perpetual/Subscription) License Attributes:

First report requirement (days): 0 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 0 (CISCO default)

Export (Perpetual/Subscription) License Attributes:

First report requirement (days): 0 (CISCO default)

Reporting frequency (days): 0 (CISCO default)

Report on change (days): 0 (CISCO default)

Miscellaneous:

Custom Id: <empty>

Usage Reporting:

Last ACK received: Nov 09 09:09:36 2020 PST

Next ACK deadline: Dec 09 09:09:36 2020 PST

Reporting push interval: 30 days

Next ACK push check: Oct 29 14:39:50 2020 PST

Next report push: Nov 09 09:10:07 2020 PST

Last report push: Oct 29 14:35:51 2020 PST

Last report file write: <none>

Trust Code Installed:

Active: PID:C9300-24UX,SN:FCW2303D16Y

INSTALLED on Oct 29 14:35:12 2020 PST

Standby: PID:C9300-24U,SN:FHH2043P09E

INSTALLED on Oct 29 14:35:13 2020 PST

Member: PID:C9300-48T,SN:FCW2139L056

INSTALLED on Oct 29 14:35:13 2020 PST

## Related Information

- Release Notes: [RN-9200](#), [RN-9300](#), [RN-9400](#), [RN-9500](#), [RN-9600](#)
- Configuration Guides: [Cat9200-CG](#), [Cat9300-CG](#), [Cat9400-CG](#), [Cat9500-CG](#), [Cat9600-CG](#)
- Command References: [Cat9200-CR](#), [Cat9300-CR](#), [Cat9400-CR](#), [Cat9500-CR](#), [Cat9600-CR](#)
- CSLU for Windows 10 download (includes User Guide and Installer Guide): [Software Download - Smart Software Manager](#)
- [Technical Support & Documentation - Cisco Systems](#)