



Migrating to Smart Licensing Using Policy

Smart Licensing Using Policy is introduced in Cisco IOS XE Amsterdam 17.3.2. This is therefore the minimum required version for Smart Licensing Using Policy.

- [Prerequisites, on page 1](#)
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- [Migrating to a Version of SSM On-Prem That Supports Smart Licensing Using Policy, on page 29](#)

Prerequisites

Before you begin the migration, if you want to learn how to perform a new deployment, see [Information About Smart Licensing Using Policy](#).

Ensure that you read the [Upgrading to Smart Licensing Using Policy, on page 1](#) section, to understand how Smart Licensing Using Policy handles various aspects of all earlier licensing models.

Note that all the licenses that you are using prior to migration will be available after upgrade. This means that not only registered and authorized licenses (including reserved licenses), but also evaluation licenses will be migrated. The advantage with migrating registered and authorized licenses is that you will have fewer configuration steps to complete after migration, because your configuration is retained after upgrade (transport type configuration and configuration for connection to CSSM, all authorization codes). This ensures a smoother transition to the Smart Licensing Using Policy environment.

Device-led conversion is not supported for migration to Smart Licensing Using Policy.

Upgrading to Smart Licensing Using Policy

This section explains the following aspects:

- Migrating from earlier licensing models to Smart Licensing Using Policy.

Earlier licensing models include Smart Licensing, Specific License Reservation (SLR), Right-to-Use Licensing (RTU), and evaluation or expired licenses from earlier licensing models. The [Sample Migration Scenarios, on page 7](#) section provides details and examples for migration scenarios.

Device-led conversion is not supported for migration to Smart Licensing Using Policy.

- Upgrading in the Smart Licensing Using Policy environment - where the software version you are upgrading from and the software version you are upgrading to, both support Smart Licensing Using Policy.

For more information, see the subsequent sections.

Identifying the Current Licensing Model Before Upgrade

Before you upgrade to Smart Licensing Using Policy, if you want to know the current licensing model that is effective on the product instance, enter the **show license all** command in privileged EXEC mode. This command displays information about the current licensing model for all except the RTU licensing model. The **show license right-to-use** privileged EXEC command displays license information only if the licensing model is RTU.

How Upgrade Affects Enforcement Types for Existing Licenses

When you upgrade to a software version which supports Smart Licensing Using Policy, the way existing licenses are handled, depends primarily on the license enforcement type.

- An unenforced license that was being used before upgrade, continues to be available after the upgrade. This includes all licenses from all earlier licensing models.
 - Smart Licensing.
 - Specific License Reservation (SLR), which has an accompanying authorization code. The authorization code continues to be valid after upgrade to Smart Licensing Using Policy and authorizes existing license consumption.
 - Right-to-Use (RTU) Licensing.
 - Evaluation or expired licenses from any of the above mentioned licensing models.
- An enforced or export-controlled license that was being used before upgrade, continues to be available after upgrade if the required authorization exists.

An export-controlled license is supported on certain models and only starting from Cisco IOS XE Bengaluru 17.6.2. No export-controlled or enforced licenses were available on any of the Cisco Catalyst Access, Core, and Aggregation Switches prior to this.

How Upgrade Affects Reporting for Existing Licenses

Existing License	Reporting Requirements After Migration to Smart Licensing Using Policy
Right-to-Use (RTU)	Depends on the license being used. After migration and deployment of a supported topology, in output of the show license usage command, refer to the <code>Next ACK deadline</code> field to know if and when reporting is required.
Specific License Reservation (SLR)	Required only if there is a change in license consumption. An existing SLR authorization code authorizes existing license consumption after upgrade to Smart Licensing Using Policy.

Existing License	Reporting Requirements After Migration to Smart Licensing Using Policy
Smart Licensing (Registered and Authorized licenses): Reporting for these licenses is based on the reporting requirements in the policy.	Depends on the policy.
Evaluation or expired licenses	Based on the reporting requirements of the Cisco default policy.

How Upgrade Affects Transport Type for Existing Licenses

The transport type, if configured in your existing set-up, is retained after upgrade to Smart Licensing Using Policy.

When compared to the earlier version of Smart Licensing, additional transport types are available with Smart Licensing Using Policy. There is also a change in the default transport mode. The following table clarifies how this may affect upgrades:

Transport type Before Upgrade	License or License State Before Upgrade	Transport Type After Upgrade
Default (callhome)	evaluation	cslu (default in Smart Licensing Using Policy)
	SLR	off
	registered	callhome
smart	evaluation	off
	SLR	off
	registered	smart
Not applicable For example, if the existing licensing model is RTU.	Not applicable For example, if the existing licensing model is RTU.	cslu

How Upgrade Affects the Token Registration Process

In the earlier version of Smart Licensing, a token was used to register and connect to CSSM. ID token registration is not required in Smart Licensing Using Policy. The token generation feature is still available in CSSM, and is used to *establish trust* when a product instance is directly connected to CSSM. See [Connected Directly to Cisco SSM](#).

Upgrading the Software Version

See the corresponding release note for the upgrade procedure. If there are any general release-specific considerations, these are called-out in the corresponding release notes. For example, to upgrade to Cisco IOS XE Amsterdam 17.3.2, see *Release Notes for Cisco <platform name>, Cisco IOS XE Amsterdam 17.3.x*.

You can use the procedure to upgrade in install mode or with [In-Service Software Upgrade \(ISSU\)](#) (on supported platforms and supported releases).

See the section "Upgrading the Switch Software" in the catalyst 9000 release notes. The following tables provides links to the respective Cisco Catalyst 9000 Series Switches models along with ISSU support.

Table 1:

Catalyst 9000 Platform	Link	ISSU Supported?
Release Notes for Cisco Catalyst 9200 Series Switches	https://www.cisco.com/c/en/us/support/switches/catalyst-9200-r-series-switches/products-release-notes-list.html	No
Release Notes for Cisco Catalyst 9300 Series Switches	https://www.cisco.com/c/en/us/support/switches/catalyst-9300-series-switches/products-release-notes-list.html	No
Release Notes for Cisco Catalyst 9400 Series Switches	https://www.cisco.com/c/en/us/support/switches/catalyst-9400-series-switches/products-release-notes-list.html	Yes
Release Notes for Cisco Catalyst 9500 Series Switches	https://www.cisco.com/c/en/us/support/switches/catalyst-9500-series-switches/products-release-notes-list.html	Yes
Release Notes for Cisco Catalyst 9600 Series Switches:	https://www.cisco.com/c/en/us/support/switches/catalyst-9600-series-switches/products-release-notes-list.html	Yes

After Upgrading the Software Version

- Complete topology implementation.

If a transport mode is available in your pre-upgrade set-up, this is retained after you upgrade. Only in some cases, like with evaluation licenses or with licensing models where the notion of a transport type does not exist, the default (**cslu**) is applied - in these cases you may have a few more steps to complete before you are set to operate in the Smart Licensing Using Policy environment.

No matter which licensing model you upgrade from, you can change the topology after upgrade.

- Synchronize license usage with CSSM

No matter which licensing model you are upgrading from and no matter which topology you implement, synchronize your usage information with CSSM. For this you have to follow the reporting method that applies to the topology you implement. This initial synchronization ensures that up-to-date usage information is reflected in CSSM and a custom policy (if available), is applied. The policy that is applicable after this synchronization also indicates subsequent reporting requirements. These rules are also tabled here: [How Upgrade Affects Reporting for Existing Licenses, on page 2](#)



Note After initial usage synchronization is completed, reporting is required only if the policy, or, system messages indicate that it is.

Upgrades Within the Smart Licensing Using Policy Environment

This section covers any release-specific considerations or actions that apply when you upgrade the product instance from one release where Smart Licensing Using Policy is supported to another release where Smart Licensing Using Policy is supported.

Starting with Cisco IOS XE Cupertino 17.7.1, RUM reports are stored in a format that reduces processing time. In order to ensure that there are no usage reporting inconsistencies resulting from the differences in the old and new formats, we recommend completing one round of usage reporting as a standard practice when upgrading from an earlier release that supports Smart Licensing Using Policy, to Cisco IOS XE Cupertino 17.7.1 or a later release.

Downgrading from Smart Licensing Using Policy

This section provides information about downgrades to an earlier licensing model, for new deployments and existing deployments. It also covers information relevant to downgrades within the Smart Licensing Using Policy environment.

New Deployment Downgrade

This section applies if you had a newly purchased product instance with a software version where Smart Licensing Using Policy was already enabled by default and you want to downgrade to a software version where Smart Licensing Using Policy is not supported.

The outcome of the downgrade depends on whether a [Trust Code](#) was installed while you were still operating in the Smart Licensing Using Policy environment, and further action may be required depending on the release you downgrade to.

If the topology you implemented while in the Smart Licensing Using Policy environment was "Connected Directly to CSSM", then a trust code installation can be expected or assumed, because it is required as part of topology implementation. For any of the other topologies, trust establishment is not mandatory. Downgrading product instances with one of these other topologies will therefore mean that you have to restore licenses to a registered and authorized state by following the procedures that are applicable in the Smart Licensing environment. See the table below.

Table 2: Outcome and Action for New Deployment Downgrade to Smart Licensing

In the Smart Licensing Using Policy Environment	Downgrade to..	Outcome and Further Action
Standalone product instance, connected directly to CSSM, and trust established.	Cisco IOS XE Amsterdam 17.3.1 OR Cisco IOS XE Gibraltar 16.12.4 and later releases in Cisco IOS XE Gibraltar 16.12.x OR Cisco IOS XE Fuji 16.9.6 and later releases in Cisco IOS XE Fuji 16.9.x	No further action is required. The product instance attempts to renew trust with CSSM after downgrade. After a successful renewal, licenses are in a registered state and the earlier version of Smart Licensing is effective on the product instance.
	Any other release (other than the ones mentioned in the row above) that supports Smart Licensing	Action is required: You must reregister the product instance. Generate an ID token in the CSSM Web UI and on the product instance, configure the license smart register idtoken idtoken command in global configuration mode.
High Availability set-up, connected directly to CSSM, and trust established.	Any release that supports Smart Licensing	Action is required: You must reregister the product instance. Generate an ID token in the CSSM Web UI and on the product instance, configure the license smart register idtoken idtoken all command in global configuration mode.
Any other topology. (Connected to CSSM Through CSLU, CSLU Disconnected from CSSM, No Connectivity to CSSM and No CSLU)	Any release that supports Smart Licensing	Action is required. Restore licenses to a registered and authorized state by following the procedures that are applicable in the Smart Licensing environment.

Upgrading to Smart Licensing Using Policy and Then Downgrading

Downgrades Within the Smart Licensing Using Policy Environment

This section covers any release-specific considerations or actions that apply when you downgrade the product instance from one release where Smart Licensing Using Policy is supported to another release where Smart Licensing Using Policy is supported.

Starting with Cisco IOS XE Cupertino 17.7.1, RUM reports are stored in a format that reduces processing time. In order to ensure that there are no usage reporting inconsistencies resulting from the differences in the old and new formats, we recommend completing one round of usage reporting as a standard practice when downgrading from Cisco IOS XE Cupertino 17.7.1 or a later release to an earlier release supporting Smart Licensing Using Policy.

Sample Migration Scenarios

Sample migration scenarios have been provided considering the various existing licensing models and licenses. All scenarios provide sample outputs before and after migration, any CSSM Web UI changes to look out for (as an indicator of a successful migration or further action), and how to identify and complete any necessary post-migration steps.



Note For SSM On-Prem, the sequence in which you perform the various upgrade-related activities is crucial. So only for this scenario, the migration sequence has been provided - and not an example.

Example: Smart Licensing to Smart Licensing Using Policy

The following is an example of a Cisco Catalyst 9500 switch migrating from Smart Licensing to Smart Licensing Using Policy. This is a High Availability set-up with an active and standby.

- [Table 3: Smart Licensing to Smart Licensing Using Policy: show Commands](#)
- [The CSSM Web UI After Migration, on page 11](#)
- [Reporting After Migration, on page 14](#)

The **show** command outputs below call-out key fields to check, before and after migration.

Table 3: Smart Licensing to Smart Licensing Using Policy: show Commands

Before Upgrade	After Upgrade
<p>show license summary (Smart Licensing)</p> <p>The <code>Status</code> and <code>License Authorization</code> fields show that the license is <code>REGISTERED</code> and <code>AUTHORIZED</code>.</p>	<p>show license summary (Smart Licensing Using Policy)</p> <p>The <code>Status</code> field shows that the licenses are now <code>IN USE</code> instead of registered and authorized.</p>

Before Upgrade	After Upgrade
<pre> Device# show license summary Smart Licensing is ENABLED Registration: Status: REGISTERED Smart Account: SA-Eg-Company-01 Virtual Account: SLE_Test 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 </pre>	<pre> Device# 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 </pre>

show license usage (Smart Licensing)

```

Device# 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
                    
```

show license usage (Smart Licensing Using Policy)

The license counts remain the same.
 The Enforcement Type field displays NOT ENFORCED, because licenses that were being used prior to upgrade were unenforced licenses.

```

Device# 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
                    
```


show license status (Smart Licensing)

show license status (Smart Licensing Using Policy)

The `Transport`: field: A transport type was configured and therefore retained after upgrade.

The `Policy`: header and details: A custom policy was available in the Smart Account or Virtual Account – this has also been automatically installed on the product instance. (After establishing trust, CSSM returns a policy. The policy is then automatically installed.)

The `Usage Reporting`: header: The `Next report push`: field provides information about when the product instance will send the next RUM report to CSSM.

The `Trust Code Installed`: field: The ID token is successfully converted and a trusted connected has been established with CSSM.

Example: Smart Licensing to Smart Licensing Using Policy

Device# 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: Eg-SA-01
Virtual Account: Eg-VA-01
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>
```

Device# 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: Sep 22 13:49:38 2020 PST
Next ACK deadline: Dec 21 12:02:21 2020 PST
Reporting push interval: 30 days
Next ACK push check: Sep 22 12:20:34 2020
PST
Next report push: Oct 22 12:05:43 2020 PST
Last report push: Sep 22 12:05:43 2020 PST
Last report file write: <none>
Trust Code Installed:
Active: PID:C9500-16X,SN:FCW2233A5ZV
INSTALLED on Sep 22 12:02:20 2020 PST
Standby: PID:C9500-16X,SN:FCW2233A5ZY
INSTALLED on Sep 22 12:02:20 2020 PST
```

<p>show license udi (Smart Licensing)</p> <pre>Device# show license udi UDI: PID:C9500-16X,SN:FCW2233A5ZV HA UDI List: Active:PID:C9500-16X,SN:FCW2233A5ZV Standby:PID:C9500-16X,SN:FCW2233A5ZY</pre>	<p>show license udi (Smart Licensing Using Policy)</p> <p>This is a High Availability set-up and the command displays all UDIs in the set-up.</p> <pre>Device# show license udi UDI: PID:C9500-16X,SN:FCW2233A5ZV HA UDI List: Active:PID:C9500-16X,SN:FCW2233A5ZV Standby:PID:C9500-16X,SN:FCW2233A5ZY</pre>
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The CSSM Web UI After Migration

Log in to the CSSM Web UI at <https://software.cisco.com>. Under **Smart Software Licensing**, click the **Manage licenses** link.

Click the **Inventory** tab. From the **Virtual Account** drop-down list, choose the required virtual account. Click the **Product Instances** tab.

Registered licenses in the Smart Licensing environment were displayed with the hostname of the product instance in the Name column. After upgrade to Smart Licensing Using Policy, they are displayed with the UDI of the product instance. All migrated UDIs are displayed. In this example, they are PID:C9500-16X,SN:FCW2233A5ZV and PID:C9500-16X,SN:FCW2233A5ZY.

Only the active product instance reports usage, therefore PID:C9500-16X,SN:FCW2233A5ZV displays license consumption information under **License Usage**. The standby does not report usage and the **License Usage** section for the standby displays No Records Found.

It is always the active that reports usage, so if the active in this High Availability set-up changes, the new active product instance will display license consumption information and report usage.

Figure 1: Smart Licensing to Smart Licensing Using Policy: Active and Standby Product Instances After Migration

Figure 2: Smart Licensing to Smart Licensing Using Policy: UDI and License Usage under Active Product Instance

Reporting After Migration

The product instance sends the next RUM report to CSSM, based on the policy.

If you want to change your reporting interval to report more frequently: on the product instance, configure the **license smart usage interval** command. For syntax details see the *license smart (global config)* command in the Command Reference for the corresponding release.

Example: RTU Licensing to Smart Licensing Using Policy

The following is an example of a Cisco Catalyst 9300 switch migrating from Right-to-Use (RTU) Licensing to Smart Licensing Using Policy. This is a set-up with an active and members.

RTU Licensing is available on Cisco Catalyst 9300, 9400, and 9500 Series Switches until Cisco IOS XE Fuji 16.8.x. Smart Licensing was introduced starting from Cisco IOS XE Fuji 16.9.1.

When the software version is upgraded to one that supports Smart Licensing Using Policy, all licenses are displayed as IN USE and the `Cisco default` policy is applied on the product instance. If any add-on licenses are used, the `Cisco default` policy requires usage reporting in 90 days. No export-controlled or enforced licenses were available on Cisco Catalyst Access, Core, and Aggregation Switches when the RTU licensing model was supported, and therefore no functionality is lost.

- [Table 4: RTU Licensing to Smart Licensing Using Policy: show Commands](#)
- [The CSSM Web UI After Migration, on page 16](#)
- [Reporting After Migration, on page 17](#)

The table below calls out key changes or new fields to check for in the **show** command outputs, after upgrade to Smart Licensing Using Policy

Table 4: RTU Licensing to Smart Licensing Using Policy: show Commands

Before Upgrade	After Upgrade
<p>show license right-to-use summary (RTU Licensing)</p> <pre> Device# 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 </pre>	<p>show license summary (Smart Licensing Using Policy)</p> <p>All licenses are migrated and IN USE.</p> <pre> Device#show license summary License Usage: License Entitlement Tag Count Status ----- network-essentials (C9300-24 Network Essen...) 2 IN USE dna-essentials (C9300-24 DNA Essentials) 2 IN USE network-essentials (C9300-48 Network Essen...) 1 IN USE dna-essentials (C9300-48 DNA Essentials) 1 IN USE </pre>

show license right-to-use usage (Smart Licensing)	show license usage (Smart Licensing Using Policy)
<p>Device# show license right-to-use usage</p>	<p>All licenses (permanent, subscription) have been migrated and the licenses are now IN USE and have types Perpetual and Subscription.</p> <p>The Enforcement Type field displays NOT ENFORCED, because all the licenses that were being using prior to upgrade, were unenforced licenses.</p>
<pre> 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 </pre>	<p>Device# show license usage</p> <p>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</p>
<pre> 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 </pre>	<p>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</p>
<pre> 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 </pre>	<p>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</p> <p>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</p>

<p>show license right-to-use (RTU Licensing)</p> <pre> Device# 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 </pre>	<p>show license status (Smart Licensing Using Policy)</p> <p>The Transport: field displays its off.</p> <p>The Trust Code Installed: field displays that a trust code is not installed.</p> <p>Under the Usage Reporting: header, the Next report push: field provides information about when the next RUM report must be sent to CSSM.</p> <pre> Device# 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: Jan 26 10:27:59 2021 PST Reporting push interval: 20 days Next ACK push check: <none> Next report push: Oct 28 10:29:59 2020 PST Last report push: <none> Last report file write: <none> Trust Code Installed: <none> </pre>
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The CSSM Web UI After Migration

No changes in the CSSM Web UI.

Reporting After Migration

Implement any one of the supported topologies, and fulfil reporting requirements. See [Connecting to Cisco SSM](#) and [Implementing Smart Licensing Using Policy](#). The reporting method you can use depends on the topology you implement.

Example: SLR to Smart Licensing Using Policy

The following is an example of a Cisco Catalyst 9500 switch migrating from Specific License Reservation (SLR) to Smart Licensing Using Policy. This is a High Availability set-up with an active and standby.

The license conversion is automatic and authorization codes are migrated. No further action is required to complete migration. After migration the [No Connectivity to Cisco SSM and No CSLU](#) topology is effective. For information about the SLR authorization code in the Smart Licensing Using Policy environment, see [Authorization Code](#).

- [Table 5: SLR to Smart Licensing Using Policy: show Commands](#)
- [The CSSM Web UI After Migration, on page 23](#)
- [Reporting After Migration, on page 26](#)

The **show** command outputs below call-out key fields to check, before and after migration.

Table 5: SLR to Smart Licensing Using Policy: show Commands

Before Upgrade	After Upgrade																																
<p>show license summary (SLR)</p> <p>The Registration and License Authorization status fields show that the license was REGISTERED - SPECIFIC LICENSE RESERVATION and AUTHORIZED - RESERVED.</p> <p>Device# show license summary</p> <p>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:</p> <table border="1"> <thead> <tr> <th>License</th> <th>Entitlement tag</th> <th>Count</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td colspan="4">-----</td> </tr> <tr> <td>C9500 Network Advantage</td> <td>(C9500 Network Advantage)</td> <td>2</td> <td>AUTHORIZED</td> </tr> <tr> <td>C9500-DNA-16X-A</td> <td>(C9500-16X DNA Advantage)</td> <td>2</td> <td>AUTHORIZED</td> </tr> </tbody> </table>	License	Entitlement tag	Count	Status	-----				C9500 Network Advantage	(C9500 Network Advantage)	2	AUTHORIZED	C9500-DNA-16X-A	(C9500-16X DNA Advantage)	2	AUTHORIZED	<p>show license summary (Smart Licensing Using Policy)</p> <p>The Status field shows that the licenses are now IN USE instead of registered and authorized.</p> <p>Device# show license summary</p> <p>License Reservation is ENABLED License Usage:</p> <table border="1"> <thead> <tr> <th>License</th> <th>Entitlement tag</th> <th>Count</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td colspan="4">-----</td> </tr> <tr> <td>network-advantage</td> <td>(C9500 Network Advantage)</td> <td>2</td> <td>IN USE</td> </tr> <tr> <td>dna-advantage</td> <td>(C9500-16X DNA Advantage)</td> <td>2</td> <td>IN USE</td> </tr> </tbody> </table>	License	Entitlement tag	Count	Status	-----				network-advantage	(C9500 Network Advantage)	2	IN USE	dna-advantage	(C9500-16X DNA Advantage)	2	IN USE
License	Entitlement tag	Count	Status																														

C9500 Network Advantage	(C9500 Network Advantage)	2	AUTHORIZED																														
C9500-DNA-16X-A	(C9500-16X DNA Advantage)	2	AUTHORIZED																														
License	Entitlement tag	Count	Status																														

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

show license reservation (SLR)**show license all (Smart Licensing Using Policy)**

The `License Authorizations` header: shows that base (C9500 Network Advantage) and add-on (C9500-DNA-16X-A) licenses on the active and standby product instances were authorized with Specific License Reservation. The `Authorization type:` field shows SPECIFIC INSTALLED.

The `Last Confirmation code:` field: shows that the SLR authorization code is successfully migrated for the active and standby product instances in the High Availability set-up.

```
Device# 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
```

```

Device# show license reservation

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-bec5-5feec525a12c
Entitlement Tag:
regid.2017-07.com.cisco.C9500-DNA-16X-A,
1.0_ef3574d1-156b-486a-864f-9f779ff3ee49

```

show license status (SLR)

show license status (Smart Licensing Using Policy)

The **Transport: header: Type:** displays that the transport type is set to off.

The **Usage Reporting: header: Next report push:** field displays if and when the next RUM report must be uploaded to CSSM.

```

Device# 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>
    License type: TERM
    Start Date: 2020-MAR-17 UTC
    End Date: 2021-MAR-17 UTC
    Term Count: 1
    
```

```

Device# 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>
    
```

The CSSM Web UI After Migration

In CSSM, there are no changes in the **Product Instances** tab. The Last Contact column displays "Reserved Licenses" since there has been no usage reporting yet.

After the requisite RUM report is uploaded and acknowledged "Reserved Licenses" and license usage will only be seen in the Active PID product Instance.

Figure 3: SLR to Smart Licensing Using Policy: Active and Standby Product Instances After Migration, Before Reporting

Figure 4: SLR to Smart Licensing Using Policy: Active and Standby Product Instances After Migration, After Reporting

Reporting After Migration

SLR licenses require reporting only when there is a change in licensing consumption (For example, when using an add-on license which is for specified term). The policy (**show license status**) indicates this, or you will receive syslog messages about this.

Since all communication to and from the product instance is disabled, to report license usage you must save RUM reports to a file and upload it to CSSM (from a workstation that has connectivity to the internet, and Cisco):

1. Generate and save RUM reports.

Enter the **license smart save usage** command in privileged EXEC mode. In the example below, all RUM reports are saved to the flash memory of the product instance, in file `all_rum.txt`. For syntax details see the *license smart (privileged EXEC)* command in the Command Reference for the corresponding release. In the example, the file is first saved to bootflash and then copied to a TFTP location:

```
Device# license smart save usage all file bootflash:all_rum.txt
Device# copy bootflash:all_rum.txt tftp://10.8.0.6/all_rum.txt
```

2. Upload usage data to CSSM: [Uploading Data or Requests to Cisco SSM and Downloading a File](#).
3. Install the ACK on the product instance: [Installing a File on the Product Instance](#).

Example: Evaluation or Expired to Smart Licensing Using Policy

The following is an example of a Cisco Catalyst 9500 switch with evaluation licenses (Smart Licensing) that are migrated to Smart Licensing Using Policy.

The notion of evaluation licenses does not apply to Smart Licensing Using Policy. When the software version is upgraded to one that supports Smart Licensing Using Policy, all licenses are displayed as IN USE and the Cisco default policy is applied to the product instance. No export-controlled or enforced licenses were available on Cisco Catalyst Access, Core, and Aggregation Switches when the earlier licensing models were effective, and therefore no functionality is lost.

- [Table 6: Evaluation or Expired to Smart Licensing Using Policy: show Commands](#)
- [The CSSM Web UI After Migration, on page 28](#)
- [Reporting After Migration, on page 28](#)

The table below calls out key changes or new fields to check for in the **show** command outputs, after upgrade to Smart Licensing Using Policy

Table 6: Evaluation or Expired to Smart Licensing Using Policy: show Commands

Before Upgrade	After Upgrade
show license summary (Smart Licensing, Evaluation Mode) Licenses are UNREGISTERED and in EVAL MODE.	show license summary (Smart Licensing Using Policy) All licenses are migrated and IN USE. There are no EVAL MODE licenses.

Before Upgrade	After Upgrade
<pre> Device# 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 </pre>	<pre> Device# 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 </pre>

<p>show license usage (Smart Licensing, Evaluation Mode)</p> <pre> Device# 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 </pre>	<p>show license usage (Smart Licensing Using Policy)</p> <p>The <code>Enforcement Type</code> field displays NOT ENFORCED, because all the licenses that were being using prior to upgrade, were unenforced licenses.</p> <pre> Device# 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 </pre>
--	--

<p>show license status (Smart Licensing, Evaluation Mode)</p>	<p>show license status (Smart Licensing Using Policy)</p> <p>The <code>Transport:</code> field displays that its off.</p> <p>The <code>Policy</code> field shows that the Cisco default policy is applied</p> <p>The <code>Trust Code Installed:</code> field displays that a trust code is not installed.</p> <p>The <code>Usage Reporting: header: The Next report push:</code> field provides information about when the next RUM report must be sent to CSSM.</p>
--	--

<pre>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></pre>	<pre>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: Jan 26 10:27:59 2021 PST Reporting push interval: 20 days Next ACK push check: <none> Next report push: Oct 28 10:29:59 2020 PST Last report push: <none> Last report file write: <none> Trust Code Installed: <none></pre>
---	--

The CSSM Web UI After Migration

No changes in the CSSM Web UI.

Reporting After Migration

Implement any one of the supported topologies, and fulfil reporting requirements. See [Connecting to Cisco SSM](#) and [Implementing Smart Licensing Using Policy](#). The reporting method you can use depends on the topology you implement.

Migrating to a Version of SSM On-Prem That Supports Smart Licensing Using Policy

If you are using a version of SSM On-Prem that is earlier than the minimum required version (See [SSM On-Prem Deployment](#)), you can use this section as an outline of the process and sequence you have to follow to migrate the SSM On-Prem version, the product instance, and any other tasks like SLAC installation, if applicable.

1. Upgrade SSM On-Prem.

Upgrade to the minimum required Version 8, Release 202102 or a later version.

Refer to the [Cisco Smart Software Manager On-Prem Migration Guide](#).

2. Upgrade the product instance.

For information about when Smart Licensing Using Policy was introduced on a supported product instance, see [Supported Products](#).

For information about the upgrade procedure, see [Upgrading the Software Version, on page 4](#).

3. Re-Register a local account with CSSM

Online and Offline options are available. Refer to the [Cisco Smart Software Manager On-Prem Migration Guide > Re-Registering a local Account \(Online Mode\)](#) or [Manually Re-Registering a Local Account \(Offline Mode\)](#).

Once re-registration is complete, the following events occur automatically:

- SSM On-Prem responds with new transport URL that points to the tenant in SSM On-Prem.
- The transport type configuration on the product instance changes from **call-home** or **smart**, to **cslu**. The transport URL is also updated automatically.

4. Save configuration changes on the product instance, by entering the **copy running-config startup-config** command in privileged EXEC mode.

5. Clear older On-Prem Smart Licensing certificates on the product instance and reload the product instance. Do not save configuration changes after this.



Note This step is required only if the software version running on the product instance is Cisco IOS XE Amsterdam 17.3.x or Cisco IOS XE Bengaluru 17.4.x.

Enter the **license smart factory reset** and then the **reload** commands in privileged EXEC mode.

```
Device# license smart factory reset
Device# reload
```

6. Perform usage synchronization

- a. On the product instance, enter the **license smart sync {all|local}** command, in privileged EXEC mode. This synchronizes the product instance with SSM On-Prem, to send and receive any pending data.

```
Device(config)# license smart sync local
```

You can verify this in the SSM On-Prem UI. Go to **Inventory > SL Using Policy**. In the **Alerts** column, the following message is displayed: Usage report from product instance.

- b. Synchronize usage information with CSSM (*choose one*)
 - Option 1:

SSM On-Prem is connected to CSSM: In the SSM On-Prem UI, Smart Licensing workspace, navigate to **Reports > Usage Schedules > Synchronize now with Cisco**.
 - Option 2:

SSM On-Prem is not connected to CSSM. See [Exporting and Importing Usage Data \(SSM On-Prem UI\)](#).

Result:

You have completed migration and initial usage synchronization. Product instance and license usage information is now displayed in SSM On-Prem.

For subsequent reporting, you have the following options:

- To synchronize data between the product instance and SSM On-Prem:
 - Schedule periodic synchronization between the product instance and SSM On-Prem, by configuring the reporting interval. Enter the **license smart usage interval** *interval_in_days* command in global configuration mode.

To know when the product instance will be sending the next RUM report, enter the **show license all** command in privileged EXEC mode and in the output, check the `Next report push:` field.
 - Enter the **license smart sync** privileged EXEC command, for ad hoc or on-demand synchronization between the product instance and SSM On-Prem.
- To synchronize usage information with CSSM:
 - Schedule periodic synchronization with CSSM. In the SSM On-Prem UI, navigate to **Reports > Usage Schedules > Synchronization schedule with Cisco**. Enter the following frequency information and save:
 - **Days:** Refers to how *often* synchronization occurs. For example, if you enter 2, synchronization occurs once every two days.
 - **Time of Day:** Refers to the time at which synchronization occurs, in the 24-hour notation system. For example, if you enter 14 hours and 0 minutes, synchronization occurs at 2 p.m. (1400) in your local time zone.
 - Upload and download the required files for reporting: [Exporting and Importing Usage Data \(SSM On-Prem UI\)](#).