



The bridge to possible

# Smart Licensing using Policy Troubleshooting on Data Center Solution

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CISCO *Live!*

#CiscoLive

# Agenda

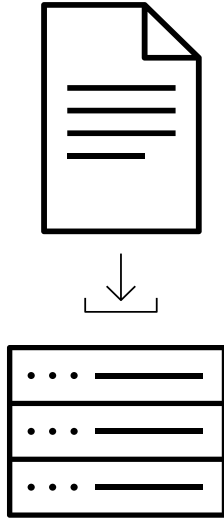
- SLP Introduction
- SLP Workflow
- Troubleshooting Check-List
- Special Cares on Specific Platform
- Case Study
- References

# Agenda

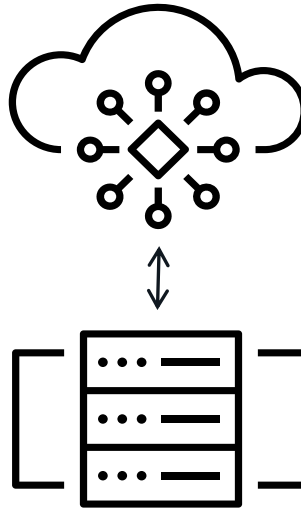
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# Introduction – The Evolution of License Model

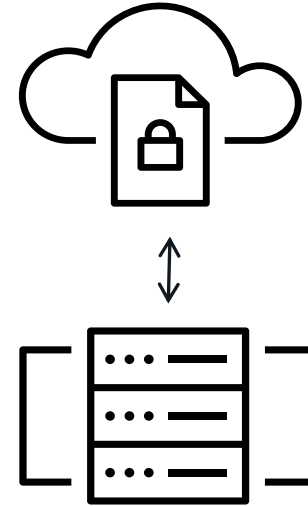
PAK License



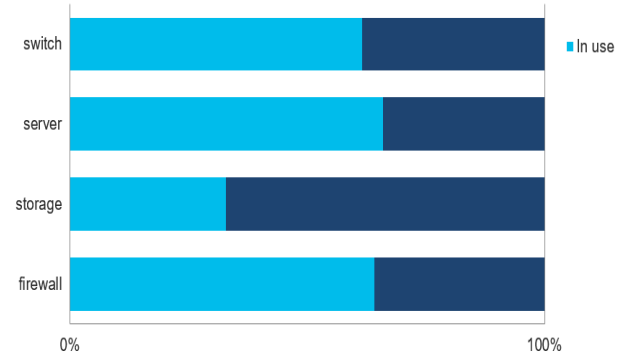
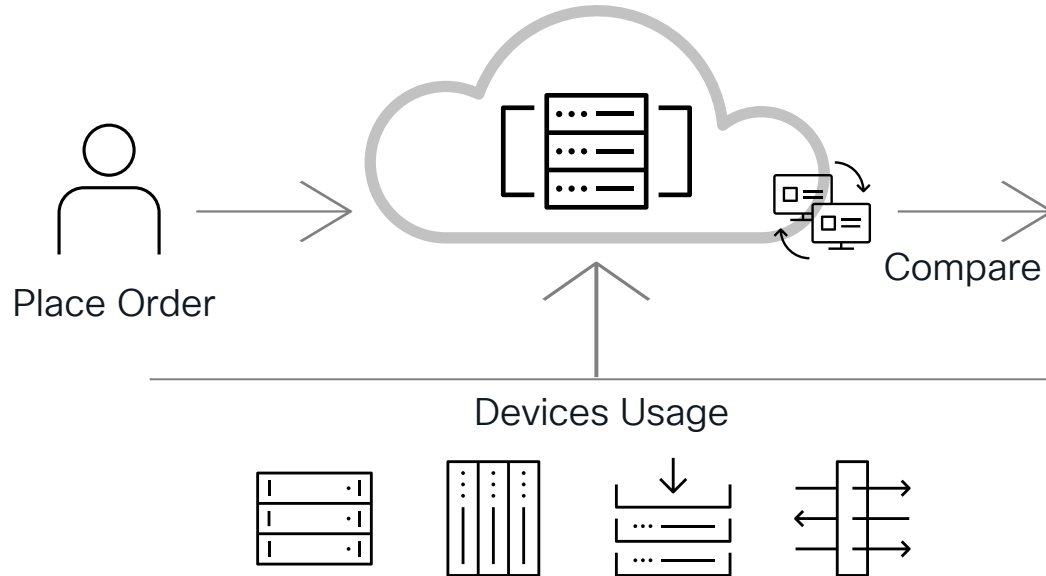
Smart License



Smart Licensing using Policy

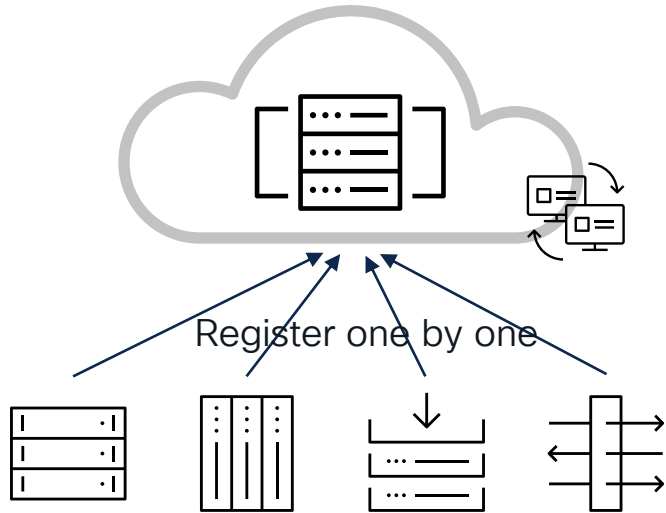


# SL and SLP - Common

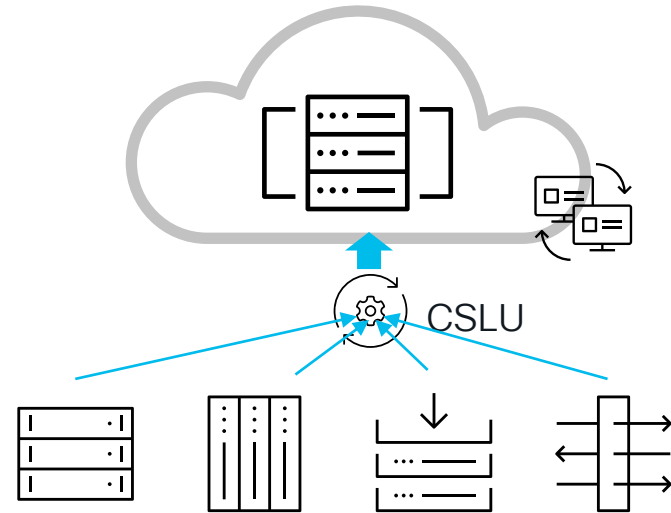


# SL and SLP - Difference

## Smart Licensing



## Smart Licensing using Policy



# SLP Top Level Principles

- Eliminate Day 0 Deployment Friction
  - Product Instance just works out of box
- Make it easy to report consumption
  - Easy to use tools for periodic reporting
  - Time series usage reports
- Support closed network customers with offline uploads

# Agenda

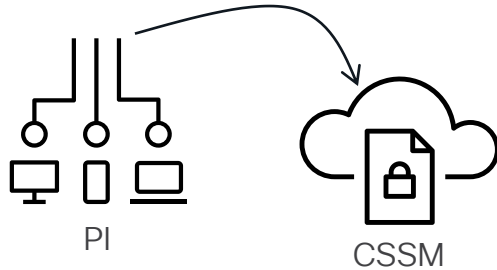
- SLP Introduction
- **SLP Workflow**
- Troubleshooting Check-List
- Special Cares on Specific Platform
- Case Study
- References



# SLP Workflow

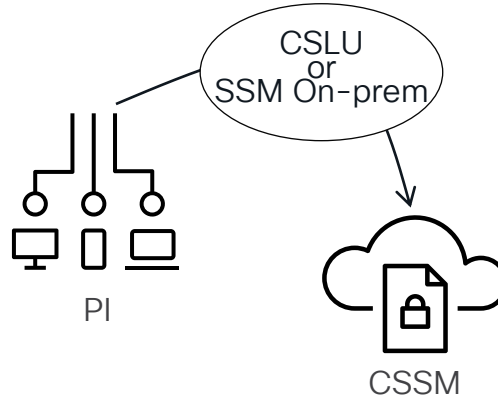
## Supported Topologies - ONLINE

Connected to CSSM Directly



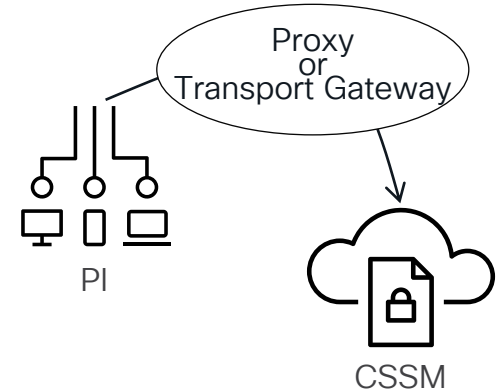
A Product Instance(PI) communicates with CSSM directly.

Connected to CSSM Through CSLU or SSM On-Prem



A Product Instance(PI) communicates with On-Prem CSLU or SSM On-Prem, by connecting to a REST endpoint in CSLU/SSM On-Prem.

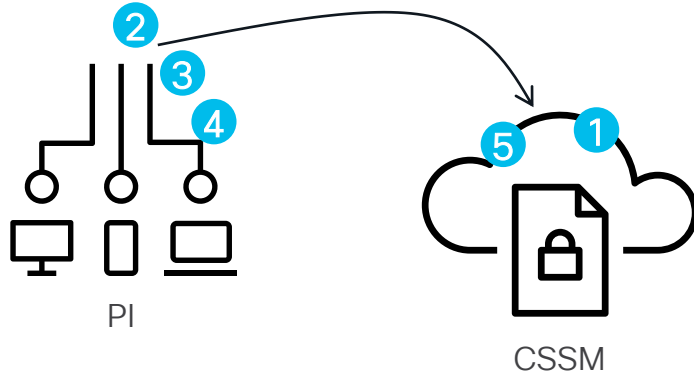
Connected to CSSM Through Proxy or Transport Gateway



A Product Instance(PI) uses a proxy server to communicate with CSSM.  
The proxy server can be a Call Home Transport Gateway or an off-the-shelf proxy.

# SLP Workflow

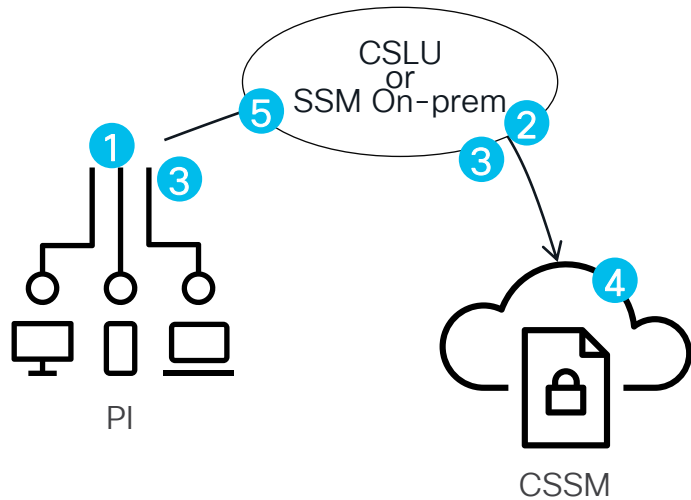
## 1 – Connected Directly to CSSM



- ① Generate a token from the corresponding Smart Account and Virtual Account in CSSM.
- ② Configure the token on the Product Instance to establish trust with CSSM.
- ③ Product Instance sends out the RUM report at the scheduled time, per the policy.
- ④ Product Instance submits polling request for an ACK.
- ⑤ CSSM returns ACK to Product Instance.

# SLP Workflow

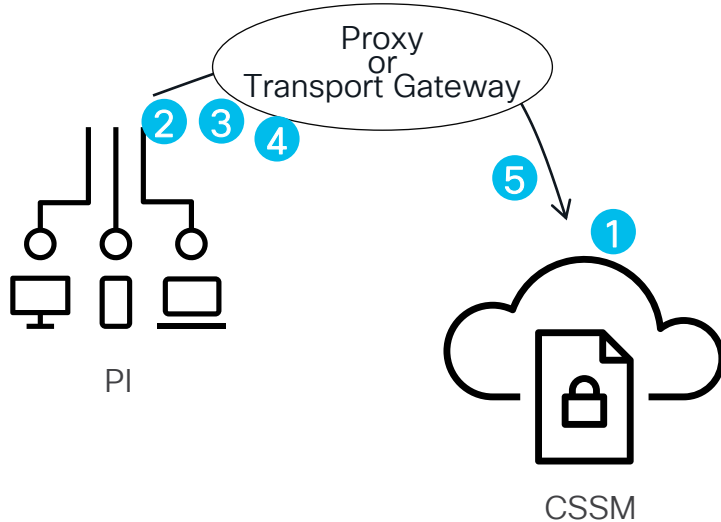
## 2 - Connected to CSSM Through CSLU or SSM On-Prem



- ① Product Instance automatically sends out the first RUM report at the scheduled time, per the policy.
- ② CSLU or SSM On-Prem forwards the information to CSSM.
- ③ Product Instance and CSLU/on-prem submit polling request for ACK separately.
- ④ CSSM returns ACK.
- ⑤ CSLU or SSM On-Prem forwards the returning ACK to Product Instance.

# SLP Workflow

## 3 - Connected to CSSM Through Proxy or Transport Gateway

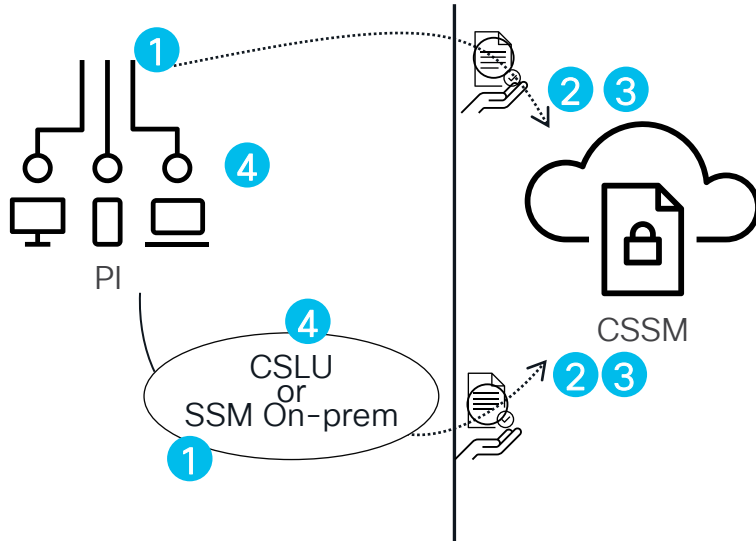


- ① Generate a token from the corresponding Smart Account and Virtual Account in CSSM.
- ② Install the token on the Product Instance to establish a trusted connection to CSSM.
- ③ Product Instance sends out the RUM report at the scheduled time, per the policy. Proxy or Transport Gateway forwards the messages to CSSM.
- ④ Product Instance submit polling request for an ACK.
- ⑤ CSSM returns ACK. Proxy or Transport Gateway forwards the returning ACK to Product Instance.

# SLP Workflow

## Supported Topologies - OFFLINE

In the offline mode, a Product Instance and CSSM are disconnected from each other. Or a Product Instance communicates with CSLU/SSM On-Prem but the other side of the communication between SSM On-Prem and CSSM is offline.



- ① Manually generate and save RUM reports on PI or CSLU/on-prem.
- ② Manually upload usage data to CSSM.
- ③ Manually download ACK from CSSM.
- ④ Manually install the ACK on the PI or CSLU/on-prem.

# Agenda

- SLP Introduction
- SLP Workflow
- **Troubleshooting Check-List**
- Special Cares on Specific Platform
- Case Study
- References

# Troubleshooting Check-List

Locate where you are – Using “show license tech support” on PI

Utility:

Status: DISABLED

Smart Licensing Using Policy:

Status: ENABLED

Transport:

Type: Smart

URL: <https://smartreceiver.cisco.com/licservice/license>

Proxy:

Address: <empty>

Port: <empty>

Username: <empty>

Password: <empty>

Server Identity Check: True

Check if settings are reflected.

# Troubleshooting Check-List

Locate where you are – Using “show license tech support” on PI

Usage reporting:

Last ACK received: Mar 20 13:14:42 2023 UTC

Next ACK deadline: Mar 19 13:14:42 2024 UTC

Reporting push interval: 30 days

Next ACK push check: <none>

Next report push: Apr 19 13:09:40 2023 UTC

Last report push: Mar 20 13:09:40 2023 UTC

Last report file write: <none>

Will be triggered

- ✓ Trust code registration
- ✓ Every reporting push interval
- ✓ Reboot
- ✓ License usage change
- ✓ Manual sync



# Troubleshooting Check-List

Locate where you are – Using “show license tech support” on PI

License Usage

=====

Handle: 1

License: VPN\_FABRIC

Entitlement Tag: xxx

Description: FAB License for Nexus 9300-XF

Count: 1

Version: 1.0

Status: IN USE(15)

Status time: Mar 23 2023 23:48:46 JST

Request Time: Mar 23 2023 23:48:46 JST

(snip)

Check if license is reflected.

# Troubleshooting Check-List

Locate where you are – Using “show license tech support” on PI

Communication Statistics:

=====

Communication Level Allowed: DIRECT

Overall State: <empty>

Trust Establishment:

Attempts: Total=0, Success=0, Fail=0 Ongoing

Failure: Overall=0 Communication=0

Last Response: <none>

Failure Reason: <none>

Last Success Time: <none>

Last Failure Time: <none>

(snip)

## Included Statistics

Trust Establishment

Trust Acknowledgement

Usage Reporting

Result Polling

Authorization Request

Authorization Confirmation

Authorization Return

Trust Sync

Hello Message

# Troubleshooting Check-List

Locate where you are – On-prem/CSLU

Product Instances			
<div>Add Single Product   Actions for Selected   Refresh Product Instance List</div>			
<input type="checkbox"/>	Name	Last Contact ↑	Alerts
	Filter by Device Details	Filter by Last Contact	Filter by Alerts
<input type="checkbox"/>	UDI_PID:N9K-C93180YC-EX,UI	22-Mar-2023 20:56	COMPLETE:Acknowledgement received from CSSM
<input type="checkbox"/>	UDI_PID:N9K-C93180YC-FX3S,UDI	22-Mar-2023 21:20	COMPLETE:Acknowledgement received from CSSM
<input type="checkbox"/>	UDI_PID:N9K-C93108TC-FX,UDI	24-Mar-2023 22:27	COMPLETE:Acknowledgement received from CSSM
<input type="checkbox"/>	UDI_PID:N9K-C9508,I	24-Mar-2023 22:40	FAILED:Usage report uploaded to CS SM

Sync response acknowledgement to Product Instance



Acknowledgement received from CSSM



Sync request uploaded to CSSM



Sync request from Product Instance



Alert State Machine

# Troubleshooting Check-List

SLP Components and Check-list		Supported Topologies					
		Connected Directly		CSLU/SSM On-Prem		Proxy or Transport GW	
		Online	Offline	Online	Offline	Online	Offline
<b>1-PI</b>							
1-1 Smart URL		●	-	-	-	●	-
1-2 Call-home URL		●	-	-	-	●	-
1-3 DNS Resolution		●	-	-	-	●	-
1-4 HTTPS Connectivity		●	-	-	-	●	-
1-5 CSLU Registration		-	-	●	●	-	-
1-6 CSLU Connectivity		-	-	●	●	-	-
1-7 SSM On-prem Registration		-	-	●	●	-	-
1-8 SSM On-prem Connectivity		-	-	●	●	-	-
1-9 NTP		●	-	-	-	●	-
1-10 Debug Message		●	●	●	●	●	●
<b>2-CSLU</b>							
2-1 Smart Account/Virtual Account Setting		-	-	●	-	-	-
2-2 DNS Resolution		-	-	●	-	-	-
2-3 CSSM Connectivity		-	-	●	-	-	-
<b>3-SSM On-Prem</b>							
3-1 Local Account Setting		-	-	●	●	-	-
3-2 DNS Resolution		-	-	●	-	-	-
3-3 CSSM Connectivity		-	-	●	-	-	-
3-4 Time Setting		-	-	●	-	-	-
<b>4-CSSM</b>							
4-1 Licenses Consumption		●	●	●	●	●	●

# Troubleshooting Check-List

## 1-1 Smart URL

If CSSM is not reachable and the configured transport type is smart:

Use the show license status command to check if the URL is exactly as follows:

<https://smartreceiver.cisco.com/licservice/license>.

```
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: Smart
```

```
URL: https://smartreceiver.cisco.com/licservice/license
```

```
Proxy:
```

```
Not configured
```

# Troubleshooting Check-List

## 1-2 Call-home URL

If CSSM is not reachable and the configured transport type is callhome:

Use the show running-config callhome command to check if the URL is exactly as follows: <https://tools.cisco.com/its/service/oddce/services/DDCEService>.

```
switch# show license status
```

```
Transport:
```

```
Type: Callhome
```

```
switch# sh run callhome
```

```
callhome
```

```
email-contact yuanshluo@cisco.com
```

```
destination-profile CiscoTAC-1 transport-method http
```

```
destination-profile CiscoTAC-1 index 1 http
```

```
https://tools.cisco.com/its/service/oddce/services/DDCEService
```

```
transport http use-vrf management
```

```
enable
```

# Troubleshooting Check-List

## 1-3 DNS Resolution

Check DNS configuration and DNS resolution.

```
switch# show run
ip domain-lookup
vrf context management
  ip domain-name cisco.com
  ip name-server 64.104.200.248
```

*//If the transport type is set to smart:*

```
switch# ping smartreceiver.cisco.com vrf management
PING smartreceiver.xglb.cisco.com (192.133.220.120): 56 data bytes
```

*//If the transport type is set to callhome:*

```
switch# ping tools.cisco.com vrf management
PING tools.cisco.com (72.163.4.38): 56 data bytes
```

# Troubleshooting Check-List

## 1-4 HTTPS Connectivity

When PI communicates with the CSSM, it establishes a secure HTTPS connection with the CSSM to exchange license usage data and licensing information.

Test HTTPS connectivity.

```
//If the transport type is set to smart:
switch# telnet smartreceiver.cisco.com 443 vrf management
Trying 173.36.127.32...
Connected to smartreceiver.xglb.cisco.com.
Escape character is '^]'.
^]
dcos-telnet> status
Connected to smartreceiver.xglb.cisco.com.
```

```
//If the transport type is set to callhome:
switch# telnet tools.cisco.com 443 vrf management
Trying 2001:420:1201:5::a...
Trying 72.163.4.38...
Connected to tools.cisco.com.
Escape character is '^]'.
^]
dcos-telnet> status
Connected to tools.cisco.com.
```



# Troubleshooting Check-List

## 1-5 CSLU Registration

Check if the PI registration URL is configured correctly.

### Option1:

Define a static hostname-to-address mapping for DNS discovery of cslu-local.

### Option2:

Use the CSLU IP instead of hostname or FQDN.

#### //Option1:

```
switch# sh license status
Smart Licensing using Policy:
  Status: ENABLED
Transport:
  Type: CSLU
  Cslu address: cslu-local
```

```
switch# sh run | egrep cslu-local
ip host cslu-local 10.124.46.53
```

#### //Option2:

```
switch# sh license status
Smart Licensing using Policy:
  Status: ENABLED
Transport:
  Type: CSLU
  Cslu address: http://10.124.46.53:8182/cslu/v1/pi
```

IP address of the Windows host where you have installed CSLU

# Troubleshooting Check-List

## 1-6 CSLU Connectivity

Only 8182 is the port number that CSLU uses to communicate with PI.

Test 8182 port connectivity.

```
switch# telnet 10.124.46.53 8182 vrf management
Trying 10.124.46.53...
Connected to 10.124.46.53.
Escape character is '^]'.
^]
dcos-telnet> status
Connected to 10.124.46.53.
```

# Troubleshooting Check-List

## 1-7 SSM On-prem Registration

Check if the SSM On-Prem URL is configured correctly:  
[https://Cisco\\_SSM\\_OnPrem/cslu/v1/pi/XYZ-ON-PREM-1](https://Cisco_SSM_OnPrem/cslu/v1/pi/XYZ-ON-PREM-1).

**XYZ-ON-PREM-1** is the tenant ID. It can be found as follows:

Step 1 Log into On-Prem and select the Smart Licensing workspace screen, then select the Inventory tab.

Step 2 Select a Local Virtual Account (top right corner) from the local Virtual Account drop-down list.

Step 3 In the Inventory table General tab, click the CSLU Transport URL link. The Product Registration URL pop-up opens listing the URL with the Tenant ID.

```
switch# sh 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:

[https://10.124.46.56/cslu/v1/pi/DL\\_LVA-1](https://10.124.46.56/cslu/v1/pi/DL_LVA-1)

# Troubleshooting Check-List

## 1-8 SSM On-prem Connectivity

When PI communicates with the CSSM, it establishes a secure HTTPS connection with the CSSM to exchange license usage data and licensing information.

Test HTTPS connectivity.

```
switch# telnet 10.124.46.56 443 vrf management
Trying 10.124.46.56...
Connected to 10.124.46.56.
Escape character is '^]'.
^]
dcos-telnet> status
Connected to 10.124.46.56.
```

# Troubleshooting Check-List

## 1-9 NTP

Check if the NTP server is configured to ensure that the system clock is synchronized by NTP.

```
switch# sh ntp peers
```

```
-----  
Peer IP Address      Serv/Peer  
-----  
146.112.61.107      Server (configured)
```

```
switch#
```

```
switch# show clock
```

```
11:53:35.962 UTC Fri Mar 24 2023
```

```
Time source is NTP
```

# Troubleshooting Check-List

## 1-10 Debug Message

### ■ Confirm establish trust successful

`show system internal license event-history sldebug | i i SANotifTrustSucc`

2023-03-25T22:38:02.210623000+09:00 [M 1] [licmgr] E\_DEBUG\_INTERNAL SLAD - SANotifTrustSucc-Notification type SmartAgentNotifyTrustInstallSuccess going to 0x564bd7297ff0 calling 0x564bd6f24fda then (nil)

### ■ Confirm report saved

`show system internal license event-history sldebug | i i SAUtilReport`

2023-03-25T22:38:36.658511000+09:00 [M 1] [licmgr] E\_DEBUG\_INTERNAL SLAD - SAUtilReport-Successfully start job SAUtilityReportsSaveJob timer leaf 10 Seconds

### ■ Confirm report sent

`show system internal license event-history sldebug | i i SAExtEvent`

2023-03-25T22:38:42.067184000+09:00 [M 1] [licmgr] E\_DEBUG\_INTERNAL SLAD - SAExtEvent-Successfully start job SAUtilityReportJob timer leaf 2592000 Seconds

### ■ Confirm ACK received

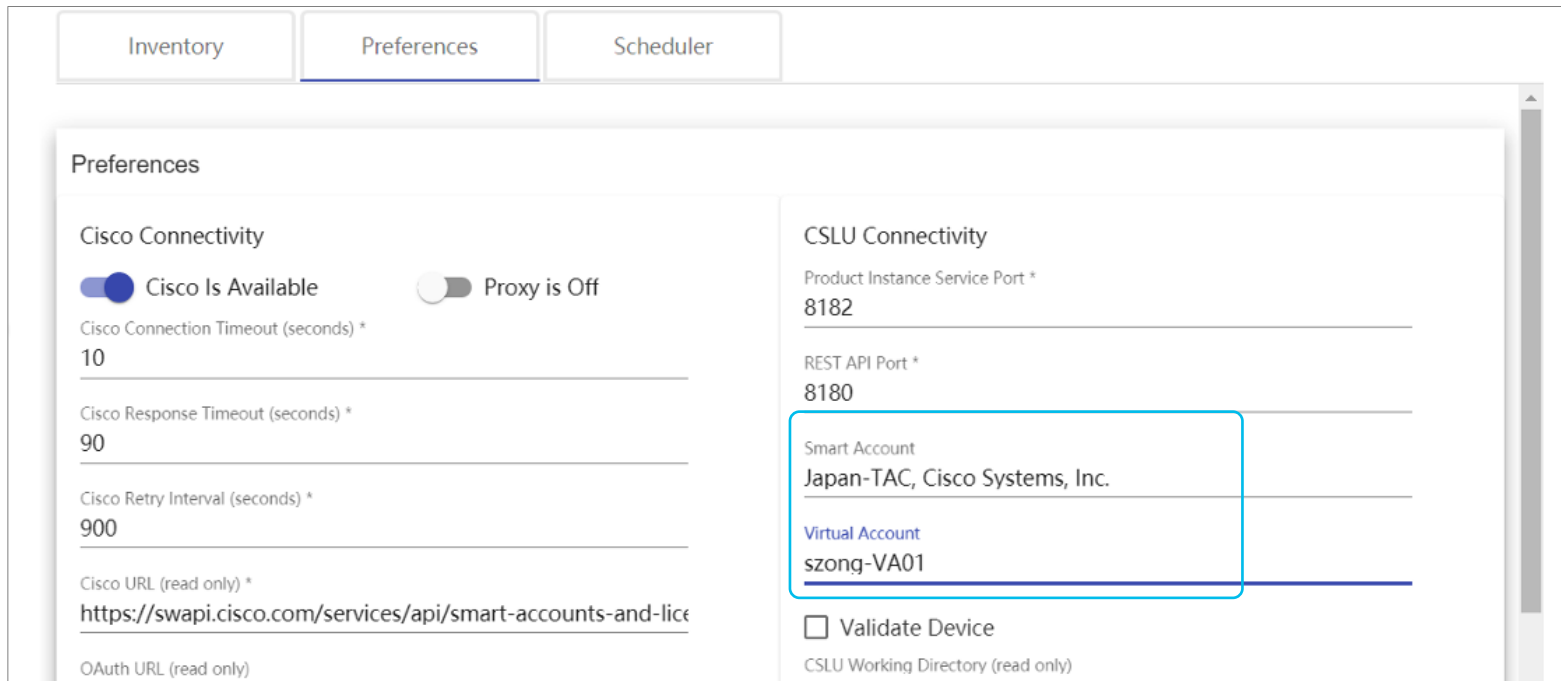
`show system internal license event-history sldebug | i i SAConversionPoll`

2023-03-25T22:43:44.479389000+09:00 [M 1] [licmgr] E\_DEBUG\_INTERNAL SLAD - SAConversionPoll-SACL License SACL-TRACE: successful received the response from the server

# Troubleshooting Check-List

## 2-1 Smart Account/Virtual Account Setting

Check if the Smart Account and Virtual Account are configured correctly.



The screenshot shows the 'Preferences' tab in a web interface. It is divided into two main sections: 'Cisco Connectivity' and 'CSLU Connectivity'. A blue box highlights the 'Smart Account' and 'Virtual Account' fields in the 'CSLU Connectivity' section.

Category	Field	Value
Cisco Connectivity	Cisco Is Available	On
	Proxy is Off	Off
	Cisco Connection Timeout (seconds) *	10
	Cisco Response Timeout (seconds) *	90
	Cisco Retry Interval (seconds) *	900
CSLU Connectivity	Product Instance Service Port *	8182
	REST API Port *	8180
	Smart Account	Japan-TAC, Cisco Systems, Inc.
	Virtual Account	szong-VA01
	Validate Device	<input type="checkbox"/>

Additional fields visible in the 'Cisco Connectivity' section include 'Cisco URL (read only) \*' with the value 'https://swapi.cisco.com/services/api/smart-accounts-and-lice' and 'OAuth URL (read only)'.

# Troubleshooting Check-List

## 2-2 DNS Resolution

Check DNS configuration and DNS resolution.

```
C:\Users\calo>nslookup swapi.cisco.com
```

```
Server: dns-blr1.cisco.com
```

```
Address: 72.163.128.140
```

```
Name: swapi.xglb.cisco.com
```

```
Address: 72.163.15.184
```

```
Aliases: swapi.cisco.com
```

Cisco Smart License Utility 2.2.0  
CSLU Product Instances Data Edit Help

Inventory Preferences Scheduler

Preferences

Cisco Connectivity

☒ Cisco Is Available ☐ Proxy is Off

Cisco Connection Timeout (seconds) \*  
10

Cisco Response Timeout (seconds) \*  
90

Cisco Retry Interval (seconds) \*  
900

Cisco URL (read only) \*  
https://swapi.cisco.com/services/api/smart-accounts-and-lic

OAuth URL (read only)  
https://cloudso.cisco.com/as/

Run Upload Interval (days)  
90

CSLU Connectivity

Product Instance Service Port \*  
8182

REST API Port \*  
8180

Smart Account  
Japan-TAC, Cisco Systems, Inc.

Virtual Account  
szong-VA01

☐ Validate Device

CSLU Working Directory (read only)  
C:\Users\yuanhluo\AppData\Roaming\CSLU

Default Connection Method  
Product Instance Initiated Only

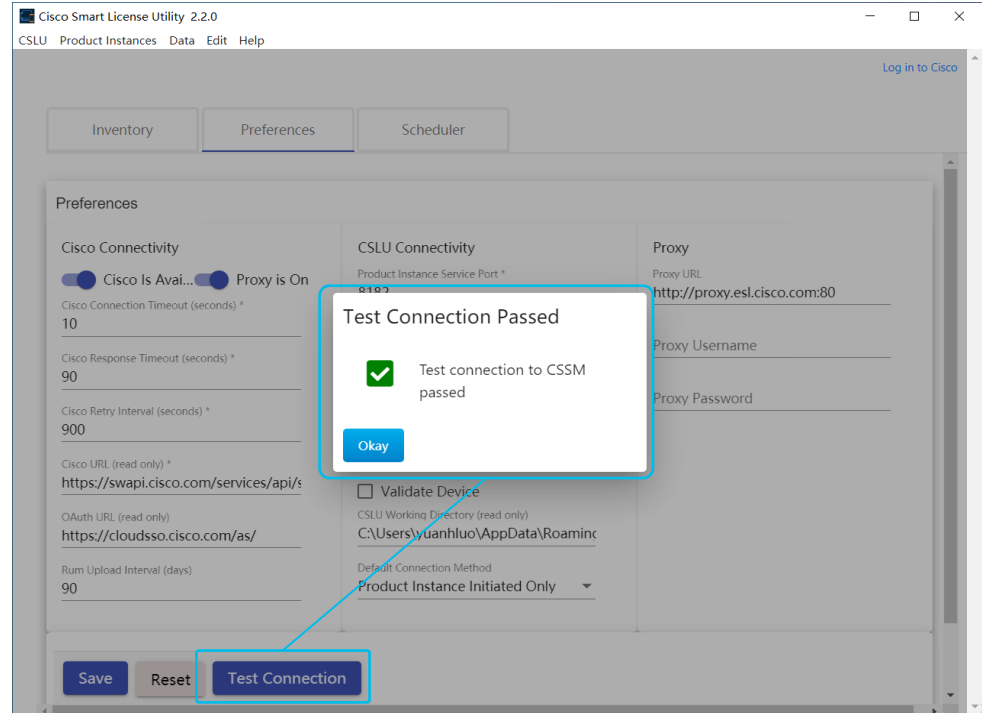


# Troubleshooting Check-List

## 2-3 CSSM Connectivity

From the CSLU Main screen, select the **Preferences** tab.

In the Preferences tab, Click **Test Connection** to test network reachability to CSSM.



# Troubleshooting Check-List

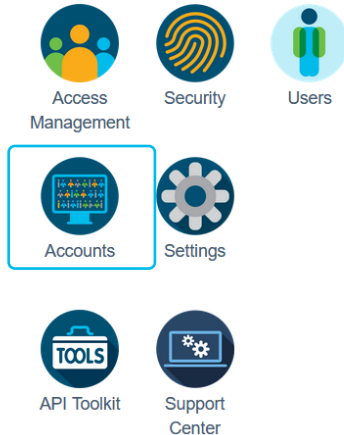
## 3-1 Local Account Setting

From the SSM On-Prem Administration workspace, Click the **Accounts** widget to check Cisco Smart Account and Cisco Virtual Account fields of the Local Account.

On-Prem Admin Workspace



### Smart Software Manager On-Prem



#### Accounts

Account Account Requests Event Log

New Account

Search by Account Name

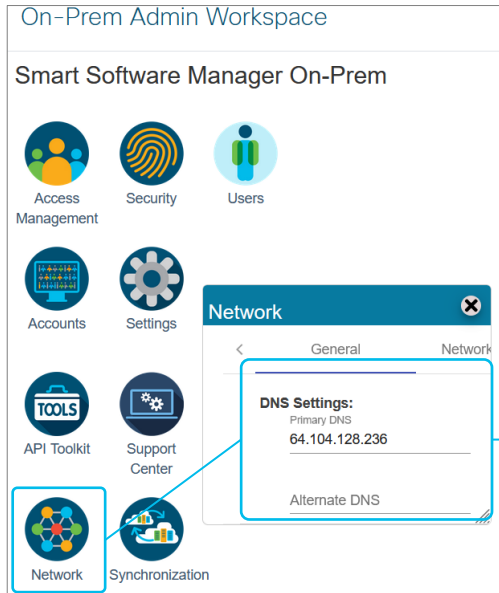
Account	Requested By	Cisco Smart Account	Cisco Virtual Account	Account Status	Actions
DL_LVA	yuanhluo@cisco.com	Japan-TAC, Cisc...	DL_VA	Active	Actions

Showing All 1 Records

# Troubleshooting Check-List

## 3-2 DNS Resolution

Check DNS configuration and DNS resolution.



```
[admin@SSM-On-Prem ~]$ onprem-console
SSM On-Prem Console
```

```
>> nslookup swapi.cisco.com
```

```
Server:      64.104.128.236
```

```
Address:     64.104.128.236#53
```

```
swapi.cisco.com canonical name = swapi.xglb.cisco.com.
```

```
Name:   swapi.xglb.cisco.com
```

```
Address: 72.163.15.184
```

```
>> nslookup cloudsso.cisco.com
```

```
Server:      64.104.128.236
```

```
Address:     64.104.128.236#53
```

```
Non-authoritative answer:
```

```
Name:   cloudsso.cisco.com
```

```
Address: 173.37.144.211
```

```
Name:   cloudsso.cisco.com
```

```
Address: 2001:420:1101:4::b
```

# Troubleshooting Check-List

## 3-3 SSM Connectivity

Verify that the SSM On-Prem can reach cisco.com.

- swapi.cisco.com
- cloudsso.cisco.com

```
[admin@SSM-On-Prem ~]$ onprem-console
SSM On-Prem Console
>> curl -v https://swapi.cisco.com
* About to connect() to swapi.cisco.com port 443 (#0)
* Trying 72.163.15.184...
* Connected to swapi.cisco.com (72.163.15.184) port 443
(#0)

>>
>> curl -v https://cloudsso.cisco.com
* About to connect() to cloudsso.cisco.com port 443 (#0)
* Trying 173.37.144.211...
* Connected to cloudsso.cisco.com (173.37.144.211) port
```

# Troubleshooting Check-List

## 3-4 Time Setting

Verify that the time on the SSM On-Prem is correct.

The screenshot displays the 'On-Prem Admin Workspace' interface. On the left, a sidebar contains icons for Access Management, Security, Users, Accounts, Settings (highlighted with a blue box and an arrow), API Toolkit, Support Center, Network, and Synchronization. The main panel is titled 'Smart Software Manager On-Prem' and features a 'Settings' tab. Within the 'Settings' tab, the 'Time Settings' sub-tab is active. The 'Current Time (UTC-0)' is shown as 'Sat, Mar 25 2023 05:41:40'. The 'Time Zone' is set to 'UTC-0'. Under 'Time Setting (UTC-0)', the 'Manually Set Time' toggle is turned off. The date is '3/25/2023'. The time is set to 5:41:07. The 'Synchronize With NTP Server' toggle is turned on. Below this, the 'Server Address 1' is '10.64.58.50' and 'Port 1' is '123'. The 'Server Address 2' and 'Port 2' fields are empty.

# Troubleshooting Check-List

## 4-1 Licenses Consumption

Navigate to the Smart Software Licensing screen, select **Inventory** > **Licenses** to check the consumption of licenses in the Smart Account/Virtual Account.

The screenshot displays 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". The user is logged in as "Japan-TAC, Cisco Systems, Inc.". The navigation menu includes "Alerts", "Inventory", "Convert to Smart Licensing", "Reports", "Preferences", "On-Prem Accounts", and "Activity". The "Inventory" tab is selected, and the "Licenses" sub-tab is active. The virtual account is "DL\_VA". There is a "Minor" alert icon and a "Hide Alerts" link. The "On-Prem Virtual Account (DL\_LVA)" is selected. The "Licenses" tab is active, showing a table of license consumption. The table has columns for License, Billing, Available to Use, In Use, Substitution, Balance, Alerts, and Actions. The table lists four licenses: "DCN Advantage for 10G+ Leaf XF", "DCN Advantage for 1G+ Leaf GF", "NXOS FAB for Nexus 9300 10G+ Leaf XF", and "NXOS LAN for Nexus 9300 10G+ Leaf XF". The "DCN Advantage for 1G+ Leaf GF" license has a warning icon and the text "Licenses Expiring".

Virtual Account: DL\_VA

On-Prem Virtual Account (DL\_LVA)

General Licenses Product Instances Event Log

Available Actions Manage License Tags Show License Transactions

By Name By Tag Search by License

Advanced Search

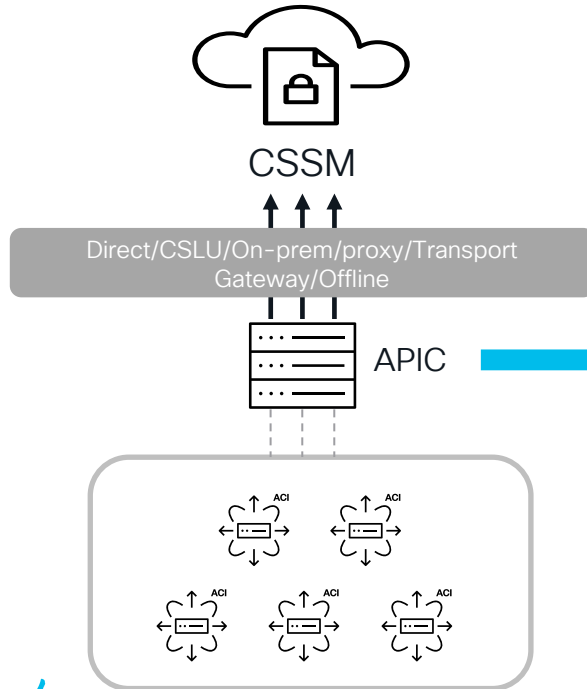
<input type="checkbox"/> License	Billing	Available to Use	In Use	Substitution	Balance	Alerts	Actions
DCN Advantage for 10G+ Leaf XF	Prepaid	2	0	To Lower: -1	+1		Actions
DCN Advantage for 1G+ Leaf GF	Prepaid	2	0	-	+2	Licenses Expiring	Actions
NXOS FAB for Nexus 9300 10G+ Leaf XF	Prepaid	0	1	From Higher: +1	0		Actions
NXOS LAN for Nexus 9300 10G+ Leaf XF	Prepaid	0	1	From Higher: +1	0		Actions

# Agenda

- SLP Introduction
- SLP Workflow
- Troubleshooting Check-List
- **Special Cares on Specific Platform**
- Case Study
- References

# Special Cares on ACI

License mode supported in ACI



All license reports are centrally managed and reported through the APIC.



# Special Cares on ACI

## Check Fault on APIC

Fault ID	Description
F3057	This is a warning fault, indicating that you have not configured a network setting yet. Even if you want to choose the offline mode, configure the <b>Offline</b> network setting. Configuring a network setting clears this fault.
F4290	This fault indicates that the product instance ID token that you entered is either an invalid or expired token. Log in to the CSSM and create a new product instance registration token. Log in to the Cisco Application Policy Infrastructure Controller (APIC) GUI to enter the new ID token and reconfigure the network setting. This action clears the fault.
F4291	This fault indicates that network connectivity between the Cisco APIC and the CSSM or between the Cisco APIC and the transport server (Gateway, Proxy, On-Prem, or CSLU) has an issue. The Cisco APIC cannot communicate with the CSSM or transport server. After you resolve the network connectivity issue, log in to the Cisco APIC GUI, navigate to <b>System &gt; Smart Licensing</b> , and choose <b>Actions &gt; Synchronize CSSM</b> . This action clears the fault shortly afterward.
F4222	<p>This fault indicates that the Cisco APIC has not received acknowledgement of a RUM report for a long time and the acknowledgement has expired. In offline mode, manually download a RUM report and import the acknowledgement. Importing the acknowledgement file into the Cisco APIC clears the fault.</p> <p>In the online modes, this fault indicates that, due to a networking issue, the Cisco APIC has been out synchronization with the CSSM for a long time. Troubleshoot the network connectivity issue between the Cisco APIC and CSSM or between the Cisco APIC and transport server, as well as between the transport server and CSSM. After you resolve the network connectivity issue, log in to the Cisco APIC GUI, navigate to <b>System &gt; Smart Licensing</b>, and choose <b>Actions &gt; Synchronize CSSM</b>. This action forces the Cisco APIC to send the RUM report again. If the network setting is <b>On-Prem</b>, log in to the <b>On-Prem</b> GUI to do a manual synchronization from On-Prem or CSLU to the CSSM. After the synchronization is completed, the fault will be cleared within 10 to 15 minutes.</p>
F4310	This fault indicates that you imported the wrong acknowledgement of a RUM report. An acknowledgement is uniquely associated with one RUM report. The imported acknowledgement must match the RUM report that you downloaded. Manually download the RUM report again and import the correct acknowledgement into the Cisco APIC, which clears the fault.

# Special Cares on ACI

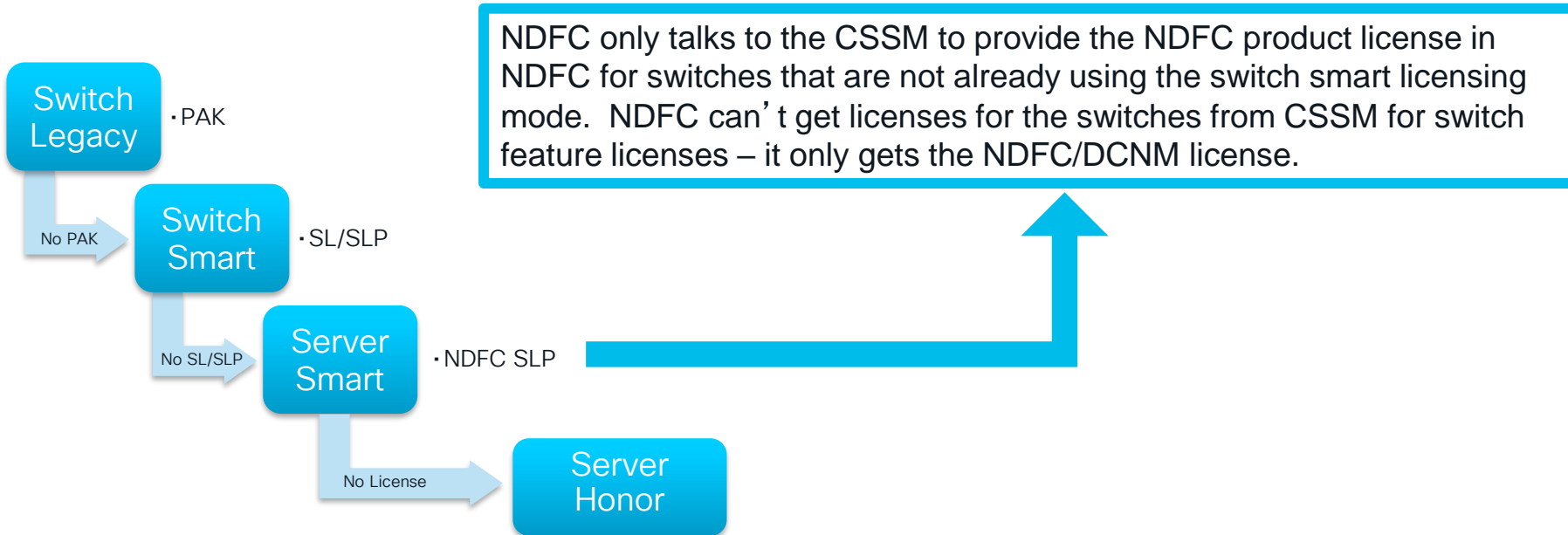
Collect below outputs before you contact Cisco TAC:

- show license all
- show license tech support



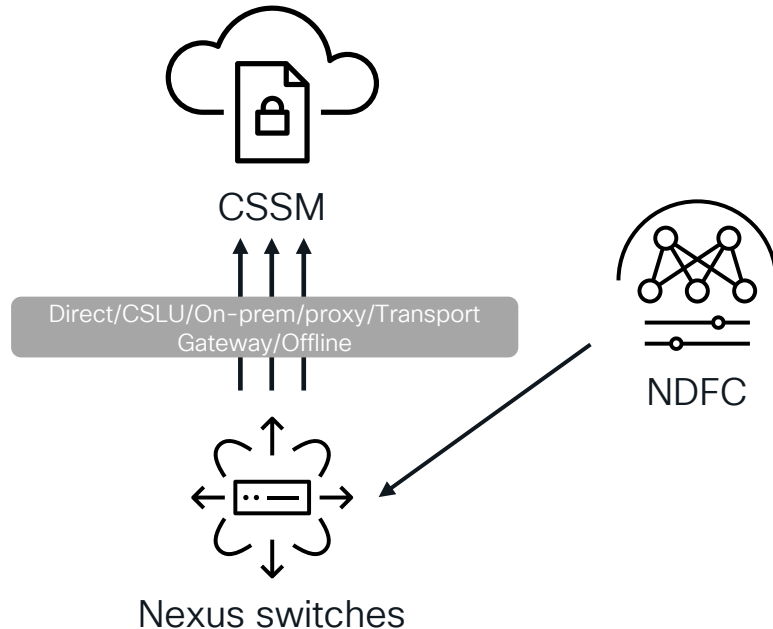
# Special Cares on NDFC

License mode supported in NDFC



# Special Cares on NDFC

## Switch Smart (SL/SLP)



NDFC won't talk to CSSM directly, only check out the NDFC license (DNCM-LAN) on switches during the discovery process.

# Special Cares on NDFC

## Check Points

PI - N9K

```
N9K-2(config)# show license usage
```

License Authorization:  
Status: Not Applicable

(DCNM-LAN):  
Description: DCMN for LAN Adv License for Nexus9300\_XF  
Count: 1

Version: 1.0  
Status: IN USE  
Enforcement Type: NOT ENFORCED  
License Type: Generic

CSSM

<input type="checkbox"/> License	Billing	Available to Us	In Use	Substitution
⊕ DCMN Advantage for 10G+ Leaf XF	Prepaid	1	0	To Lower: -1
⊕ DCMN LAN Adv for Nexus 9300 10G+	Prepaid	0	1	From High... +1

Leaf XF

NDFC

License Management

Overview NDFC Smart Switch Switch License Files

Filter by attributes

Switch Name	Type	State
<input type="radio"/> N9K-2	Switch Smart	Smart

For switch smart, NDFC only check out the NDFC license (DCNM-LAN) on switches during the discovery process. NDFC can't be used by the switch to checkout switch licenses. Switches using smart licensing still need to talk to the CSSM for themselves to request the licenses needed or to report the license usage.

If there's any issue occurred in switch smart mode, follow the switch discover trouble shooting guide and previous switch side troubleshooting steps .

# Agenda

- SLP Introduction
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# Case 1

show license status

-----

<snip>

Usage reporting:

Last ACK received: <none>

Next ACK deadline: Jun 22 06:52:19 2023 UTC

Reporting push interval: 30 days

Next ACK push check: <none>

**Next report push: Mar 24 06:54:19 2023 UTC**

Last report push: <none>

Last report file write: <none>

Trust Code installed: <none>

switch# show clock

Warning: No NTP peer/server configured. Time may be out of sync.

**07:22:51.400 UTC Fri Mar 24 2023**

Time source is NTP

switch#

If **Next report push** is not updated, it indicates that there's a connection issue between PI and CSSM/CSLU/on-prem.

# Case 2

```
show license status
```

```
-----
```

```
<snip>
```

```
Usage reporting:
```

```
  Last ACK received: <none>
```

```
  Next ACK deadline: Jun 20 12:25:03 2023 UTC
```

```
  Reporting push interval: 30 days
```

```
  Next ACK push check: Mar 22 12:35:23 2023  
  UTC
```

```
  Next report push: Apr 21 12:30:24 2023 UTC
```

```
  Last report push: Mar 22 12:30:24 2023 UTC
```

```
  Last report file write: <none>
```

**Next ACK push check** runs every 5 minutes and the Last ACK received is <none>.

If using direct connect to CSSM, that means something went wrong on CSSM.

If using CSLU/on-prem, probably there is an issue between CSLU/on-prem and CSSM



# Before Contact to TAC

Please collect below info before contact to Cisco TAC

- Nexus: Command “show tech license”
- APIC: Command “show license tech support”
- CSLU: <CSLU Working Directry>\var\logs
- On-Prem: Support Center > System Logs > Download All Logs

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# Reference

[Cisco Software Licensing Guide](#)

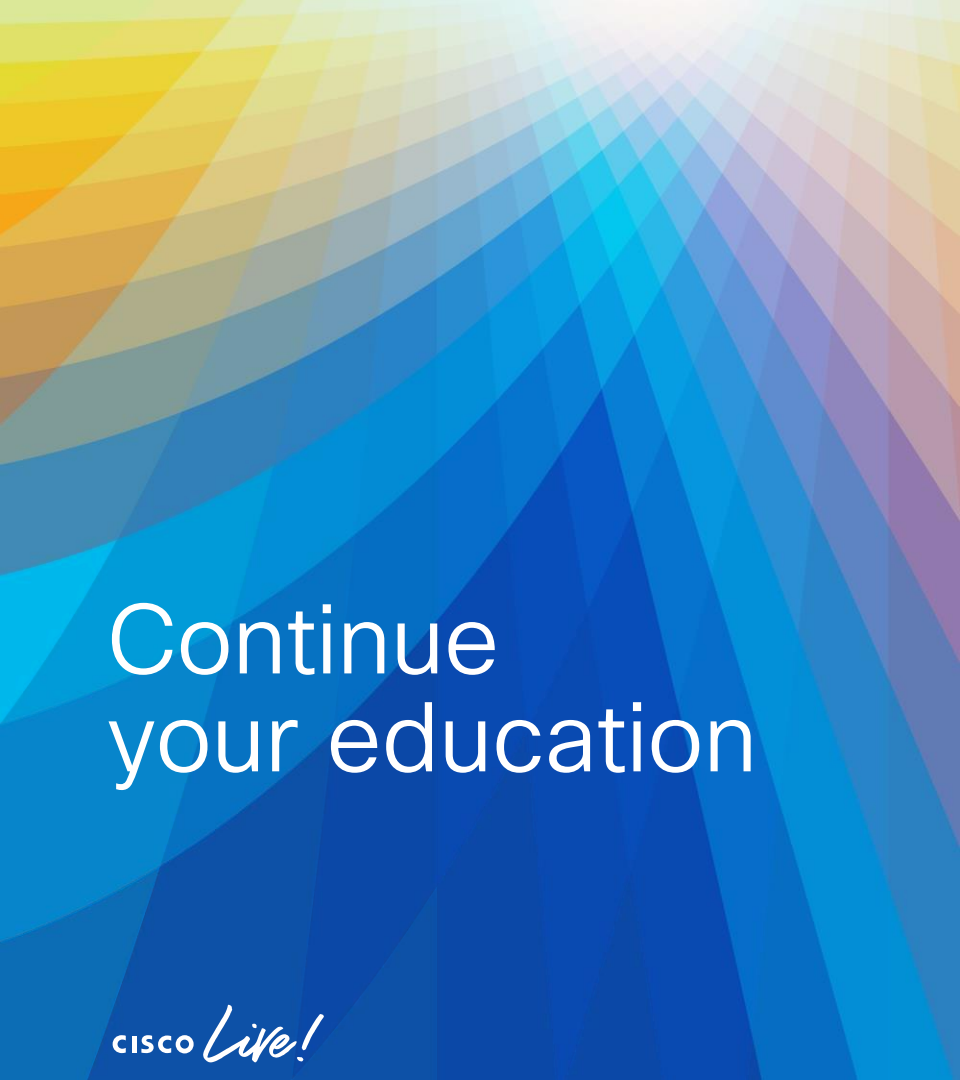
[Cisco Nexus 9000 and 3000 Series NX-OS Smart Licensing Using Policy User Guide](#)

[Cisco ACI Smart Licensing using Policy](#)

[Smart Licensing Using Policy for Cisco NDFC](#)

[Smart License Using Policy – FAQ](#)

[Smart Software Manager On-Prem](#)



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The bridge to possible

# Thank you

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The background is a vibrant, abstract graphic. It features a central bright white light source from which numerous colorful rays emanate, creating a sunburst or starburst effect. The rays transition through a spectrum of colors including yellow, orange, red, and various shades of blue and green. Overlaid on this are several large, semi-transparent, wavy shapes in similar color tones, giving the overall image a sense of motion and energy.

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