Configure and Troubleshoot Smart Licensing Policy on ACI Platforms

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Introduction

This document describes how to use Smart Licensing Policy to manage software licenses on the Cisco Application Centric Infrastructure (ACI) Platform.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions.

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.

Background Information

This document describes how to work with Cisco Smart Licensing Policy to troubleshoot, configure, and manage software licenses on the Cisco Application Centric Infrastructure (ACI) Platform.

What is Cisco Smart Licensing Policy (SLP)?

Cisco Smart Licensing is a software management platform that manages all the Cisco product licenses. Based on your feedback, Cisco Smart Licensing has been enhanced and a new platform, called SLP, has been proposed. The purpose of SLP is to simplify smart licensing and make it possible for you to configure and maintain. It is introduced in ACI version 5.2(4).

Are you new to Smart Licensing and/or Smart Account administration?

Visit and sign up for the new administrator training course and recording:

- <u>Cisco Community Get Smart with Cisco Smart Accounts/Smart Licensing and My Cisco</u> <u>Entitlements</u>
- Smart accounts can be created here: <u>Smart Accounts</u>
- Smart accounts can be managed here: Smart Software Licensing

What is an ID token?

Used to securely Register products to a Smart Account and Virtual Account. ID Tokens are "organizational identifiers" used to establish identity when a product is registered. These token in SLP is used with a different method of registration which are explained later in this document.

Generate an ID token from CSSM

In order to generate, go to <u>Cisco Software Central</u> and navigate to Manage Licenses > Inventory > General > New Token as shown in the image.

Cisco Softwa	re Central		cisco	ы Э		Q	Ŵ	⊕us en
Cisco Software Smart S	Central > Smart Softw Oftware Lice	are Licensing			tilb intern	alTestDemoAccount62.cisco.com Support Help		
Alerts Inven	tory Convert to Sma	art Licensing Reports Prefere	ences On-Prem Accounts Ac	tivity				
Virtual Acc	ount: ACI-BGL-S	SMART						
General	Licenses Pr	roduct Instances Event Log						_
Virtual Ac Description Default Vir	count n: tual Account:	ACI SMART LICENSING	ACCOUNT FOR BGL TAC					
Product I The registrati	nstance Registra	tion Tokens used to register new product instanc	ces to this virtual account.					
New Tok	en							
Token	Expirat	tion Date Uses	s Export-Controlled	Description	Created By	Actions		
			No Records Found					
The token will	I be expired when either	the expiration or the maximum uses	is reached			No Records to Display		

Once generated, you can copy or download into Actions:

	g				
lerts Inven	tory Convert to Smart Licensing R	eports Preferences	On-Prem Accounts Activi	ty	
/irtual Acco	ount: ACI-BGL-SMART				
General	Licenses Product Instances	Event Log			
Default Vin	Aud and Account: No Instance Registration Tokens on tokens below can be used to register no	w product instances to this	virtual account.		
	en				
New Tok					
New Tok Token	Expiration Date	Uses	Export-Controlled	Description	Created By Actions
New Token Token Nml2ZGMzh	Expiration Date	Uses 90 days)	Export-Controlled Allowed	TAC	Created By Actions mayeer Actions

SLP License and the Product States

In ACI SLP, the need for 90 days of the evaluation period and product registration is eliminated. Product registration is no longer needed. You need to report license usage in the best effort. In addition to this, license authorization status on client view is eliminated. A license entitlement has two statuses now: In Use or Not In Use. Since the APIC controller only manages those licenses that are currently In Use, on APIC UI/CLI you can only see every license entitlement that is In Use.

Supported Methods with SLP

There are different methods to configure Smart License Policy which can be differentiated as follows:

1. Online Mode

2. Offline Mode

In ACI SLP, introduce the concept of Resource Utilization Measurement report (RUM report). A RUM report is a file in XML format that contains the report of license usage. So, the terminology **license usage report** and **Rum report** interchangeable; both refer to report license usage. With online mode, a user needs to configure the network and to make the APIC controller connected to CSSM either directly or indirectly, also in online mode, APIC can automatically send RUM reports to and get acknowledgement from CSSM.

In offline mode, because APIC is completely isolated without any network connection with CSSM either directly or indirectly, a user is required to periodically download the RUM report from APIC, import it into CSSM, download acknowledgement from CSSM and import it into APIC.

Based on the connectivity of APIC with CSSM, you can decide whether to use online or offline mode, which thus also has multiple methods in online mode, explained as follows:

Method 1. Direct Connect to CSSM



This method is the most commonly used network mode. The Cisco APIC must have Internet connectivity so that Cisco APIC can send RUM reports to the CSSM directly. The DNS must be configured and the CSSM hostname (tools.cisco.com) must be pingable.

To configure:

- Step 1. Log in to the Cisco APIC GUI.
- Step 2. On the menu bar, navigate to System > Smart Licensing > Actions > Configure Network Settings.
- Step 3. Select Direct connect to CSSM.
- Step 4. URL and Port Number are unchangeable here.
- Step 5. Paste product instance ID token, which is already obtained from your CSSM virtual account.

Step 6. Click OK.



Product Instance ID Token

Once successfully synced with CSSM, the Smart Account and Virtual Account names are updated on the Smart Licensing Page as shown in the image.

cisco	APIC										admin 🝳	• 🏞 🛛	•
System	Tenants	Fabric	Virtual Networking	Admin	Operations	Apps	Integrations						
QuickStart I	Dashboard	I Controllers	s I System Settings	Smart Lice	nsing Faults	History	I Config Zones I	Active Sessions	I Security				
Smart	t Licer	nsing									Acti	ions ~ 🕜	9 ()
General F	Faults												
Network S	ettings nect to Cisco	Smart Softw	s sare Manager II	mart Account MaternalTestDem	lame oAccount62.cisc	o.com	Virtual Ac	count Name SMART		Product Instanc	ce Name		
(CSSM)		o on art oorth	are monager							-			
Filter by att	tributes												
License N	ame		Status			Entitlemen	nt Tag		Description	h	instance Count		
	PASE 100		🖓 in Lise			regid.2018		106107	ACI Base License for 10/25/40	+G			
AGI_LEAF	_DAGE_100		0 11 030			f9d1-4f11	-b694-a1e2a59011	41	except N9K-C9348GC-FXP	na J	,		

Smart Account and Virtual AccountNames areUpdated

Method 2. Cisco Transport Gateway

With this method, the Cisco APIC does not require Internet connectivity. The Cisco APIC sends RUM reports to the CSSM with help of the transport gateway. The Cisco transport gateway middleware must be already installed in the data centre and reachable to APIC. For Transport Gateway mode, the URL format is: http<s>://<ip>

In order to install and configure Transport Gateway, a user can reference the documentation of Cisco Transport Gateway:

https://www.cisco.com/c/dam/en/us/td/docs/switches/lan/smart_call_home/user_guides/SCH_Ch4.pdf

To configure:

Step 1. Log in to the Cisco APIC GUI.

Step 2. On the menu bar, navigate to System > Smart Licensing > Actions > Configure Network Settings.

Step 3. Select Cisco Transport Gateway.

Step 4. Edit the URL with the correct IP (IP of Cisco Transport Gateway) and port;http<s>://<ip or hostname><port>/Transportgateway/services/DeviceRequestHandler.

Step 5. Paste product instance ID token, which is already obtained from your CSSM virtual account.

Step 6. Click OK.

cisco APIC				admin 🔇 🗊 🏠 🕲 💷
System Tenants Fabric Virtua	al Networking Admin	Operations Apps Integrations		
QuickStart Dashboard Controllers S	System Settings Smart Lie	ensing Faults History Config Zones Active Sessions Security		
Smart Licensing		Configure Network Settings	:	
General Faults		Smart License Mode		
Network Settings Clisco Transport Gateway		Cisco Transport Gateway	Product Ir apic1	nstance Name
		Product Instance ID Token		
Filter by attributes		NDVmZDRjNTktMjQxMC00NWZiLWFjY2ltMTYzYTBkYTEwMTY1LTE20TM		
License Name	Status			Instance Count
ACI_LEAF_BASE_10G	⊘ In Use	Cancel	for 10/25/40+G X and FX TORs BGC-FXP	3

Method 3. HTTP/HTTPS Proxy

With this method, the Cisco APIC does not require Internet connectivity. The Cisco APIC sends RUM reports to the CSSM from your web proxy. Ensure the web proxy server is configured to allow the smart licensing messages. Also, the firewall must have rules to pass communication to reach the destination (https://tools.cisco.com/its/service/oddce/services/DDCEService).

In Proxy mode, a user needs to configure proxy IP and port. Along with that, a product instance ID token is required and can be obtained from the user's CSSM virtual account.

To configure:

Step 1. Log in to the Cisco APIC GUI.

Step 2. On the menu bar, navigate toSystem > Smart Licensing > Actions > Configure Network Settings.

Step 3. SelectCisco HTTP/HTTPS Proxy.

Step 4. Please provide the IP address and Port number of the proxy.

Step 5. Paste product instance ID token, which can be obtained from your CSSM virtual account.

Step 6. Clickok.

cisco	APIC										admin 🔇 🔁 🔧 😂	•
System	Tenants	Fabric	Virtual Networking	Admin	Operations	Apps	Integrations					
QuickStart	Dashboard	Controllers	s System Settings	Smart Lice	nsing Faults	History	Config Zones	Active Sessions	Security			
Smart	Licer	nsing			Configu	ire Net	work Set	tings	×		Actions ~	0
General F	aults				Smart License	Mode		-				
					HTTP/HTTPS	Proxy			~			
Network S				art Account	URL						instance Name	
HTTP/HTT	PS Proxy				https://tools.c	sco.com/its/	service/oddce/se	ervices/DDCEServic	се	apic1		
					IP Address •							
					10.1.1.2							
License Na	ame		Status		Port •						Instance Count	
	RASE 10G				443					for 10/25/40+G X and EX TORs	3	
					Product Instan	ce ID Token				BGC-FXP		
					NDVmZDRjN	TktMjQxMC0	00NWZiLWFjY2ltN	/TYzYTBkYTEwMT	Y1LTE2OTM			
								Canc	el OK			

Method 4. On-Prem

With this method, the Cisco APIC does not require Internet connectivity, whereas On-Prem needs Internet connectivity. The Cisco APIC sends RUM reports to the CSSM via the On-Prem. The On-Prem middleware must be already installed in the data center. This mode was earlier known as Cisco Smart Software Manager Satellite (Manager Satellite) in Cisco ACI Smart Licensing (SL).

To Configure:

Step 1. Log in to the Cisco APIC GUI.

Step 2. On the menu bar, navigate toSystem > Smart Licensing > Actions > Configure Network Settings.

Step3. Select Cisco Smart Software Manager On-Prem.

cisco APIC		admin 🔇 💷 🌺 🐼 🔍
System Tenants Fabric Virtual Networking Admin	Operations Apps Integrations	
QuickStart Dashboard Controllers System Settings Smart Lice	nsing Faults History Config Zones Active Sessions Sec	unity
Smart Licensing	Configure Network Settings	X Actions > O ?
 Smart Licensing is not configured Ensure this product has either access to the internet, a Smar For Direct Connect, Transport Gateway or HTTP/HTTPs Prox product instance ID token. For Smart Software Manager On-Prem, you need to log on N Learn more about Smart Software Licensing Configure Network Settings 	Smart License Mode Cisco Smart Software Manager On-Prem Direct connect to CSSM Cisco Smart Software Manager On-Prem HTTP/HTTPS Proxy Cisco Transport Gateway Cisco Smart Licensing Utility (CSLU)	ay is installed on your network.
General Faults Filter by attributes License Name Status Last Login Time: 2022-09-04107.31 UTC-00.00	Offline Entitlement Tag Descri regid.2018- ACI Ba	ption Instance Count se License for 10/25/40+G Leaf
		China dynam min. 202 - 9 of 10.00 distance

You must provide the URL to the Cisco Smart Software Manager On-Prem. To get the URL, log in to the Cisco Smart Software Manager On-Prem GUI. Navigate to Inventory > General and click the CSLU TransportURL link.

Alerts Inver	tory Convert to Smart Lice	insing Reports	Product Reg	jistration URL	*		
ocal Virtual Accoun	t: Default Licenses Prod	uct Instances SL Us	Press ctrl + c to cop	by selected text to clipboard. Event Log			
Local Virtual Account							
Description Default Local Virtual	Th Account: Ye	is is the default virtual accou	int created during c	ompany account creation.			
Product Instance Reg The registration tokens bet Smart Transport Registrati Smart Call Home, you mus destination URL value. New Token	istration Tokens ow can be used to register new produc on URL.For products that support Smar t configure the "destination address htt	Linstances to this Local Virtual Ac t Licensing Using Policy that use p [*] on the product to use the Sma	count. For products th celu as transport, you r rt Call Home Registrati	at support Smart Transport, yo must configure the "license sm on URL. The recommended me	u must configure the "license smart un art transport calu" to use the CSLU Tra thtod is Smart Transport. Please consu	' on the product to use the nsport URL. For legacy pro it your Products Configurat	ducts that still use tion Guilde for setting the
Token	Expiration Date	Uses		Description	Export-Controlled	Created By	Actions
The token will be expired wh	en either the expiration or maximum nu	mber of uses is reached.					No Records to Display

Step 4. Copy the CSLU URL and paste it into the URL field in the Cisco APIC GUI.

You do not need to specify your product instance ID token. The Cisco APIC uses a built-in certificate to communicate with the Cisco Smart Software Manager On-Prem.

alialia cisco	APIC								admin 🝳	•
System Te	enants Fabric	Virtual Networking	Admin	Operations Apps	Integrations	a Sassions I Sasuri	5			
Smart I General Fac	_icensing			Configure Net	twork Setting	S	×		Ċ	Actions ~
Network Sett Cisco Smart	ings Software Manager O	n-Prem -	imart Accourr	URL • UR	anager On-Prem cslu/v1/pi/ACI-BGL-SM/	ART-1	~	Product In: apic1		
Filter by attrib						Cancel O	к			
ACI_LEAF_B	ASE_10G	⊘ In Use		regid.20 01.com.c f9d1-4f1	0 18- cisco.ACI_LEAF_BASE_1 1-b694-a1e2a5901141	ACI Base 0G,1.0_7c Models: / N9K-C93	License All EX an 348GC-F	e for 10/25/40+G Leaf nd FX TORs except XP	3	
Last Login Time: 2022-	09-05T10:22 UTC+00:00								Current System T	me: 2022-09-05T11:19 UTC+00:0

Once successfully synced, Smart-Software-Manager On-Prem Inventory is updated with licenses in use.

ocal Virtual Accou	unt: Default								
General	Licenses	Product Instances	SL Using Policy	Ev	ent Log				
By Name By Tag	Available Actions -	Manage License Tags	Đ		Search by License	Q			
						1	0 🔻 SI	nowing Page 1 of 1(1 Records) 4 44))	× M
License		Billing	Purchased	In Use	Substitution	Balance	Alerts	Actions	
ACI Base Licer	nse for 10G+ Leaf XF	Prepaid	3		3	0		Actions -	
						1	0 🔻 SI	nowing Page 1 of 1(1 Records) 4 44)4	н

Method 5. Cisco Smart Licensing Utility

With this method, the Cisco APIC does not require Internet connectivity. The Cisco APIC sends RUM reports to CSSM via the CSLU. The CSLU which is the Microsoft Windows version of the middleware must be already installed in the data center. The URL for the CSLU can be configured in APIC as per this format:<u>http://ip_or_hostname:port/cslu/v1/pi</u>

Here IP or hostname is the CSLU IP address or hostname. HTTPS is not supported.

To configure:

Step 1. Log in to the Cisco APIC GUI.

Step 2. On the menu bar, navigate to Inventory System > Smart Licensing > Actions > Configure Network Settings .

Step 3. Select Cisco Smart Licensing Utility (CSLU).

cisco APIC				admin 🔇 🖬 🍋 😨 💷
System Tenants Fabric Virte	ual Networking Admin	Operations Apps Integrations		
QuickStart Dashboard Controllers	System Settings Smart Lice	ensing Faults History Config Zones Active Sessions Securit	y	
Smart Licensing		Configure Network Settings	×	
General Faults		Smart License Mode		
Network Settings	Smart Account	Cisco Smart Licensing Utility (CSLU)	Yoduct Ins	
Cisco Smart Licensing Utility (CSLU)	InternalTestDe	http://10.197.240.115:8182/cslu/v1/pi	apic1	
Filter by attributes		Cancel OK		
License Name	Status		_	Instance Count
ACI_LEAF_BASE_10G	⊘ In Use	regid.2018- ACI Base 1 01.com.cisco.ACI_LEAF_BASE_10G,1.0_7¢ Models: AI f9d1-4f11-b694-a1e2a5901141 N9K-C934	icense for 10/25/40+G Leaf I EX and FX TORs except 8GC-FXP	3

In the previous URL, the port is taken from as Product Instance Service Port under preferences from CSLU GUI.

Inventory Preferences Scheduler		
references		
Cisco Connectivity Cisco Is Available Cisco Connection Timeout (seconds) *	CSLU Connectivity Product Instance Service Port * 8182 REST API Port *	
Cisco Response Timeout (seconds) * 30	8180 Smart Account	
Cisco Retry Interval (seconds) * 000	Virtual Account ACI-BGL-SMART	
https://swapi.cisco.com/services/api/smart-accounts-and-licensi	Validate Device	
DAuth URL https://cloudsso.cisco.com/as/	CSLU Working Directory C:\Users\acibgl\AppData\Roaming\CSLU	
Rum Upload Interval (days)	Default Connection Method Product Instance Initiated Only	-

Once successful, the sync licensing page is updated with the Smart Account name and Virtual Account

name as shown in the image.

cisco	APIC												admin C	00	
System	Tenants	Fabric Virtua	l Networking	a Admin	Operati	ons Ap	ps I	Integrations							
QuickStart	I Dashboard	Controllers S	System Setting	s Smart Lie	ensing	Faults His	story	Config Zones	Active Sessions	Security					
Smar	t Licen	sing												Actions ~	0?
General	Faults														
Network S Cisco Sm	Settings art Licensing U	Itiliity (CSLU)		Smart Accoun InternalTestDe	Name moAccount	62.cisco.con	1	Virtua ACI-E	I Account Name BGL-SMART			Product Inst apic1	tance Name		
Filter by a	ttributes														
License M	Name		Status			Ent	tlement '	Tag		Description	n		Instance Coun	t	
ACI_LEAF	BASE_10G		⊘ In Use			regi 01.0 f9d	d.2018- com.cisco 1-4f11-b	b.ACI_LEAF_B 694-a1e2a59	8ASE_10G,1.0_7c	ACI Base Li Models: All N9K-C9348	icense for 10/25/ EX and FX TORs 3GC-FXP	40+G Leaf except	3		

Method 6. Offline Method

In offline mode, the Cisco APIC is isolated without any network connection with the CSSM either directly or indirectly. Because the Cisco APIC cannot reach the CSSM through a network connection, every 12 months you must download a RUM report from the Cisco APIC and import the report into the CSSM. Afterwards, you must download an acknowledgement from the CSSM and import the acknowledgement into the Cisco APIC.

To configure:

- Step 1. Log in to the Cisco APIC GUI.
- Step 2. On the menu bar, navigate to System > Smart Licensing.
- Step 3. In the Work pane, navigate to Actions > Download Rum Report.

The RUM report file is automatically downloaded to the default folder on your browser.

cisco	APIC										admin 🔇 🗗 🔧	•
System	Tenants	Fabric	Virtual Networking	Admin	Operations	Apps	Integrations					
QuickStart	Dashboard	I Controller	I System Settings	Smart Lice	ensing Fault	I History	Config Zones	Active Sessions	I Security			
Smar	t Licer	nsing									Actions ^	00
General	Faults										Configure Network Settings	
											Download Rum Report	
											Import Acknowledgement	
Network	Settings		Sm	art Account	Name		Virtual	Account Name	Pro	duct Ins	stance Name	
Offline							-		apic	c1		
Filter by a	ttributes											
License	Name		Status			Entitleme	ent Tag		Description		Instance Count	
ACI_LEA	F_BASE_10G		⊘ In Use			regid.201 01.com.c	8- isco.ACI_LEAF_B/ 1-b694-a1e2a590	ASE_10G,1.0_7c	ACI Base License for 10/25/40+G I Models: All EX and FX TORs except	Leaf ot	3	
						1001 411			101 0001000 110			

Once the report is downloaded (LicenseUsageRumReport.xml), you can import it into CSSM.

Step 4. Login to Software.cisco.com and navigate to Manage License.

Step 5. From the Menu, click on Reportsand select the Usage Data Filesoption as shown in the image.

illi Inten	nalTestDemoAccount62.cisco.com Support Help									
	Support Help									
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.										
Search by File Name, Virtual Account										
Devices A	Acknowledgement									
1 1	Download									
	Showing 1 Record									
		Showing 1 Record								

Step 6. Click on Upload Usage Dataand select fileLicenseUsageRumReport.xmlas shown in the image.

Cisco Software Central		uluuli cisco		C	2 🕅	US EN		
Cisco Software Central > Smart Software Licensing Smart Software Licensing Alerts Inventory Convert to Smart Licensing Reports Report Usage Data Files Report	Upload Usage D Please select the Usage File • Usage Data File:	ata e you wish to upload. Browse LicenseUsageRun	iReport.xml	load Data Car	all i	tternalTestDemoAccount62.cisco.cor Support Hel	n 9 	
Devices can be configured to report the features the This usage then determines which licenses are needed.	that they are using. eeded, in order to be compliant. Reported Virtual Account 2022-Sep-05 ACI-BGL-SMART			Search by File Narr Status rs	ne, Virtual Account Devices 1	Q Acknowledgement Download Showing 1 Record		
Contacts Feedback	Help Site M	ap Terms & Conditio	ns Priva	cy Statement	Cookie Policy	Trademarks		

Step 7. Select the Virtual Accounts which has the licenses.

Cisco Software Central		uluiu cisco			Q		₩ ^{US} EN	
Cisco Software Central > Smart Software Licens Smart Software Licensing Alerts Inventory Convert to Smart Licensing Reports Report Usage Data Files Repo Devices can be configured to report the features This usage then determines which licenses are bar	Select Virtual Acc Some of the usage data files virtual account is unrecognize Please select an account A Select one account Select a virtual acc	ounts do not include the name of the vi d. t for all files: <u>AC</u> ount per file:	rtual account the	at the data refers to, or	× dla n	nternalTestDemoAccount62.cisco.com Support Help		
Upload Usage Data	Reported	Virtual Account	Reporting	Search by File Name	e, Virtual Account Devices	C, Acknowledgement		
LicenseUsageRumReport.xml	2022-Sep-05	No Errors		1	Download Showing 1 Record			
Contacts Feedback	Help Site Map	o Terms & Conditions	s Priva	acy Statement	Cookie Policy	Trademarks		

Once submitted you have to wait until the reporting status becomes No Errorsand the Acknowledgement field has the option to download.

Step 8. Once the download option is available, click on Download and Acknowledgement is downloaded as file nameACK_LicenseUsageRumReport.xmlas shown in the image.

= 0	Disco Software Central		cisco				C		
	Cisco Software Central > Smart Software Licensing				InternalTestDemoAccount62.cisco.com				
	Smart Software Licensing						Support Hel	, ,	
	Alerts Inventory Convert to Smart Licensing	Reports Preferences	On-Prem Accounts Activ	vity					
	Reports								[
	Report Usage Data Files Reporting	g Policy Synch File	for Device Controllers						<u> </u>
	Devices can be configured to report the features tha This usage then determines which licenses are nee	t they are using. ded, in order to be complian	ıt.						
	Upload Usage Data				Search by File Name, Virtual Account		Q.		
	Usage Data File	Reported	Virtual Account	Reporting S	Status	Devices	Acknowledgement		
	LicenseUsageRumReport.xml	2022-Sep-05	ACI-BGL-SMART	1 No Errors		1	Download		
							Showing 1 Record		
	Contacts Feedback	Help Site M	ap Terms & Conditio	ns Privac	y Statement	Cookie Policy	Trademarks		

You need to import the acknowledgement to APIC:

Step 9. Log in to the Cisco APIC GUI.

Step 10. On the menu bar, navigate toSystem > Smart Licensing.

Step 11. In the Work pane, navigate toActions > Import Acknowledgement.

Step 12. ClickChoose File, navigate to where you downloaded the acknowledgement file, choose the file and click Open.

Step 13. Click OK.

cisco	APIC										admin 🔍 🗩 👫	•
System	Tenants	Fabric	Virtual Networking	Admin	Operations	Apps	Integrations					
QuickStart	Dashboard	I Controller	s I System Settings	Smart Licen	ising Faults	History	Config Zones	Active Sessions	Security			
Smart	t Licer	nsing									Actions ^	0?
General	Faults										Configure Network Settings	
											Download Rum Report	
											Import Acknowledgement	
Offline	Settings		Sn -	hart Account N	lame		-	Account Name		apic1	stance Name	
Filter by at	tributes											
License N	lame		Status			Entitleme	nt Tag		Description		Instance Count	
ACI_LEAF	_BASE_10G		⊘ In Use			regid.201 01.com.ci f9d1-4f11	8- sco.ACI_LEAF_B I-b694-a1e2a59(ASE_10G,1.0_7c	ACI Base License for 10/25/4 Models: All EX and FX TORs e N9K-C9348GC-FXP	0+G Leaf except	3	

Once successful, the sync licensing page is updated with the Smart Account name and Virtual Account name as shown in the image.

cisco	APIC											admin	Q 🗨 🖁	00
System	Tenants	Fabric	Virtual Networking	Admin	Operations	Apps	Integration	s						
QuickStart	I Dashboard	I Controller	s I System Settings	Smart Lice	ensing Faults	I History	I Config Zones	Active Sessions	I Security					
Smar	t Licer	nsing											Actions	∽ © ?
General	Faults													
Network S	Settings		s	imart Account nternalTestDen	Name noAccount62.ci:	sco.com	Vir AC	tual Account Name I-BGL-SMART			Product Ins apic1	tance Name		
Filter by a	ttributes													
License I	Name		Status			Entitlem	ent Tag		Description			Instance Co	ount	
ACI_LEAI	F_BASE_10G		⊘ In Use			regid.20 01.com.o f9d1-4f1	18- cisco.ACI_LEAI 1-b694-a1e2a	E_BASE_10G,1.0_7 15901141	ACI Base Lice Models: All E N9K-C9348G	ense for 10/25/40 X and FX TORs e C-FXP	0+G Leaf xcept	3		
Last Login Time: 2	022-09-05T08:47	UTC+00:00										Current	System Time: 2022-	-09-05T10:20 UTC+00:0

Troubleshoot Cisco ACI Smart Licensing Policy

Faults

In ACI a fault is raised when a specific problematic condition or warning occurs before you start to troubleshoot. It is always good to check if any fault exists which redirects us in the right direction, the table lists the smart licensing faults:

F3057	This is a warning fault, that indicates that you have not configured a network setting yet. Even if you want to choose the offline mode, configure the Offline network setting. Configure a network setting that 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 System > Smart Licensing, and selectActions > Synchronize CSSM. This action clears the fault shortly afterwards.
F4222	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. When you import the acknowledgement file into the Cisco APIC, it clears the fault.
	In the online modes, this fault indicates that, due to a networking issue, the Cisco APIC has been out of 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 System > Smart Licensing, and select Actions > Synchronize CSSM. This action forces the Cisco APIC to send the RUM report again. If the network setting is On-Prem, log in to the On-Prem GUI to do a manual synchronization from On-Prem or CSLU to the CSSM. After the synchronization is completed, the fault is cleared within 10 to 15 minutes.
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.

Show Commands

There are two CLI show commands that are useful to troubleshoot. To use these commands, log in to the Cisco Application Policy Infrastructure Controller (APIC) node 1 in the cluster as the admin user.

show license all

This show command displays smart licensing information from the Smart Agent (SA) trust store. The "Usage Reporting" section displays the timestamp of the last sent RUM report and the last received acknowledgement, as well as when to send the next RUM report and when to poll the next acknowledgement. If the timestamp of the last received acknowledgement is newer than the timestamp of the last sent RUM report, this indicates that the Cisco APIC successfully sent the RUM report and received the acknowledgement.

show license tech support

This show command displays much more detailed information than show license all. The console cannot display the complete result because of its length, but you can open the file /tmp/SA_Show_Tech_Support.txt to view all of the output.

Logs

When there is an issue with smart licensing please collect these logs:

```
/var/log/dme/log/svc_ifc_licensemgr.bin.log
/var/log/dme/log/ch_dbg.log
/var/log/dme/log/sa.log
```

Techsupport from APIC.

Known Issue

1. Registration Failed due to a Communication Problem (DNS not Configured)

In the Direct Connect to CSSM mode, if you forgot to configure DNS on the Cisco Application Policy

Infrastructure Controller (APIC) communication to tools.cisco.com fails.

make sure you have DNS configured in APIC and you can ping tools.cisco.com

To check if DNS is configured, runcat /etc/resolv.confon APIC CLI:

apic1# cat /etc/resolv.conf # Generated by IFC search apic.local nameserver 10.0.0.1 nameserver XX.163.128.140

In order to check if ping works, run ping on APIC controller CLI, ping must work for tools.cisco.com.

apic1# ping tools.cisco.com
PING tools.cisco.com (XX.163.4.38) 56(84) bytes of data.
64 bytes from tools1.cisco.com (XX.163.4.38): icmp_seq=1 ttl=235 time=250 ms
64 bytes from tools1.cisco.com (XX.163.4.38): icmp_seq=2 ttl=235 time=249 ms
64 bytes from tools1.cisco.com (XX.163.4.38): icmp_seq=3 ttl=235 time=249 ms

2. Cisco ACI Smart License Policy Upgrade Consideration

If you plan to upgrade to the Cisco Application Policy Infrastructure Controller (APIC) 5.2(4) release or later, and the Cisco APIC is already registered and the network or transport mode is Direct Connect to CSSM, Transport Gateway, or HTTP/HTTPS Proxy, you can directly upgrade the Cisco APIC from Cisco Application Centric Infrastructure (ACI) Smart Licensing (SL) to SLP. There is no need to perform any special procedure. After the upgrade, the Cisco APIC is still connected with the CSSM and can send RUM reports to the CSSM without any issues.

If instead the Cisco APIC is already registered and the network or transport mode is Manager Satellite, you can not directly upgrade the Cisco APIC from SL to SLP. This is because both the transport type and URL are changed for the Cisco Smart Software Manager On-Prem network mode that replaces Manager Satellite. You must perform these actions:

- 1. Upgrade the Manager Satellite to the latest version of Cisco Smart Software Manager On-Prem that supports SLP. After the upgrade, make sure On-Prem has network connectivity with the CSSM and synchronization still works between On-Prem and the CSSM.
- 2. Upgrade the Cisco APIC to the 5.2(4) release or later. After the upgrade, the Cisco APIC GUI displays that the network mode is Transport Gateway rather than Manager Satellite. You must reconfigure the network mode to Cisco Smart Software Manager On-Prem and copy the right URL from On-Prem GUI.

3. Error - Fail to Send Out Call Home HTTP Message (Quo Vadis Root CA)

QuoVadis Root CA 2 is decommissioned and can impact SSL communication from APIC, thus it raises a fault "Fail to send out Call Home HTTP". In order to check the same, you can parse call home logs under/var/log/dme/log/ch_dbg.log. If it prints these lines, follows the given BUG and Field Notice:

CH-TRANS-ERROR: ch_pf_curl_send_msg[539], failed to perform, err code 60, err string "Peer certificate CH-TRANS-DETAIL: ch_pf_http_long_buf_dump[264], dump:"SSL certificate problem: self signed certificate

https://www.cisco.com/c/en/us/support/docs/field-notices/721/fn72115.html

Cisco bug ID CSCwa97230