Troubleshoot Smart Licensing Issues

The following chapter describes some common Smart Licensing issues that you might encounter and possible solutions. This chapter contains the following sections:

Troubleshoot Smart Licensing

This section describes some common smart licensing issues you may encounter with IOS XE Release 16.10.1a and their possible solutions.

> **Note** The issues described in this section apply to release 16.10.1a only.

CSSM Registration Failure

Cause

HTTP Communication Failures

Sample Syslogs

Nov 15 14:18:48.373 PDT: %SMART_LIC-3-AGENT_REG_FAILED: Smart Agent for Licensing Registration with the Cisco Smart Software Manager or satellite failed: Fail to send out Call Home HTTP message.

Nov 15 14:18:48.373 PDT: %SMART_LIC-3-COMM_FAILED: Communications failure with the Cisco Smart Software Manager or satellite: Fail to send out Call Home HTTP message.

Verification Steps

Execute the `show license all` command and locate the failure reason in the output. See the following sample output:

```
Registration:
Status: REGISTERING - REGISTRATION IN PROGRESS
Export-Controlled Functionality: NOT ALLOWED
Initial Registration: FAILED on Nov 15 14:18:48 2018 PDT
```

```
Failure reason: Fail to send out Call Home HTTP message.  Next Registration Attempt: Nov
15 14:38:20 2018 PDT
```

Recommended Solution

Ensure connectivity to the CSSM portal. See the section.

CSSM Registration Failure reason: Invalid tokenID

Sample Syslogs

```
Nov 15 19:03:07.272: %SMART_LIC-3-AGENT_REG_FAILED: Smart Agent for Licensing Registration
 with the Cisco Smart Software Manager or satellite failed: Error received from Smart
Software Manager: {"token": ["The token '<tokenID>' is not valid."]}
```

Verification Steps

Execute the `show license all` ommand and look for failure reason in the output. See the following example output:

```
Registration:
Status: REGISTERING - REGISTRATION IN PROGRESS
Export-Controlled Functionality: NOT ALLOWED
Initial Registration: FAILED on Nov 15 14:32:24 2018 PDT
Failure reason: The token '<tokenID>' is not valid.
```

Recommended Solution

The Token ID that you entered is incorrect. Try registering the device again with the correct tokenID.

DLC syslog message with "DLC Already Completed"

Sample Syslogs

Nov 11 00:41:22.395: %SMART_LIC-6-CONVERT_LIC_SUCCESS: PID:ISR4451-X/K9,SN:FOC17221WLK License regid.2014-12.com.cisco.ISR_4400_Security,1.0_02ea4d4a-2469-46c1-afaf-d6cdfa1980aa has been converted to ISR_4400_Security with a count of 1^M *Nov 11 00:41:22.395: %SMART_LIC-6-CONVERT_ALREADY: PID:ISR4451-X/K9,SN:FOC17221WLK Smart License Conversion successful *Nov 11 00:41:24.637: %SMART_LIC-6-AUTH_RENEW_SUCCESS: Authorization renewal with the Cisco Smart Software Manager or satellite. State=OOC for udi PID:ISR4451-X/K9,SN:FOC17221WLK^M

Recommended Solution

You can perform the DLC operation only once during the lifecycle of a device. If you want to add new licenses after DLC conversion, you have to deposit those licenses in your Virtual Account.

CSSM Registration with Out of Compliance: Existing customers upgrading to 16.10.1a and later. Virtual Account with no tags

CSSM Registration displays out of compliance error message for existing users who are upgrading to the 16.10.1a release.

Troubleshoot Smart Licensing Issues

CSSM Registration with EVAL Expired: Existing customers upgrading to 16.10.1a. Licenses state after 90 days without registration

Sample Syslogs

Nov 15 15:15:34.444 PDT: %SMART_LIC-6-AGENT_REG_SUCCESS: Smart Agent for Licensing Registration with the Cisco Smart Software Manager or satellite for udi PID:ISR4461/K9,SN:FDO2213A0GL

Nov 15 15:15:36.509 PDT: %SMART_LIC-4-CONFIG_NOT_SAVED: Smart Licensing configuration has not been saved

Nov 15 15:15:39.357 PDT: %SMART_LIC-3-OUT_OF_COMPLIANCE: One or more entitlements are out of compliance

Nov 15 15:15:39.358 PDT: %SMART_LIC-6-AUTH_RENEW_SUCCESS: Authorization renewal with the Cisco Smart Software Manager or satellite. State=OOC for udi PID:ISR4461/K9,SN:FDO2213A0GL

Verification Steps

Execute the `show license all` command and look for failure reason in the output. For example, see the following output:

```
Registration:
License Authorization:
Status: OUT OF COMPLIANCE
Last Communication Attempt: SUCCEEDED
  Next Communication Attempt: Nov 16 03:15:39 2018 PDT
```

Recommended Solution

Your Virtual Account has no licenses deposited. Perform the DLC operation to deposit licenses and get them authorized.

CSSM Registration with EVAL Expired: Existing customers upgrading to 16.10.1a. Licenses state after 90 days without registration

Existing customers upgrading to IOS XE Release 16.10.1a might see an "evaluation period expired" error message. This implies that the licenses are in the evaluation state after 90 days, and the device is yet to be registered.

Sample Syslogs

Nov 14 17:10:23.585 PDT: %SMART_LIC-4-EVAL_WILL_EXPIRE_WARNING: Evaluation period will expire in 1 hours. *

Nov 14 17:10:33.585 PDT: %SMART_LIC-3-EVAL_EXPIRED: Evaluation period expired

Nov 14 17:10:33.586 PDT: *** Evaluation period has expired ***

Verification Steps

Execute the `show license all` command and look for failure reason in the output. For example, see the following output:

```
Smart Licensing is ENABLED
 Registration:
  Status: UNREGISTERED
      Export-Controlled Functionality: Not Allowed
      License Authorization:
      Status: EVAL EXPIRED
```

```
License Usage:
License                    Entitlement tag           Count Status
  ----------------------------------------------------------------------
                          (ISR_4400_Application)         1 EVAL EXPIRED
```

Recommended Solution

Register the device and perform the DLC process if your Virtual Account has no license deposited.

DLC successful but license missing in Virtual Account

The DLC operation is successful but licenses are missing in the Virtual Account.

Possible Cause

The license could be in an "Out of Compliance" mode wherein you cannot use the corresponding features due to license unavailability.

Only those licenses seen when you execute the `show platform software license dlc` command are eligible for conversion. If a particular license is missing in the DLC path, that license cannot be converted. The license continues to be in the OOC or Out of Compliance mode.

Recommended Solution

You must manually deposit the licenses in your Virtual Account.

Invalid PAK file error during DLC

During DLC operation, you see an invalid PAK file error.

Sample Syslogs

Oct 23 00:06:24.234: CSL: pid = ISR4451-X/K9, sn = FOC17221WLK^M

Oct 23 00:06:24.238: CSL: pid = ISR4451-X/K9, sn = FOC17221WLK^M

Oct 23 00:06:25.827: %SMART_LIC-3-CONVERT_FAILED: PID:ISR4451-X/K9,SN:FOC17221WLK License conversion failed: Invalid License File^M

Recommended Solution

You must manually deposit the licenses in your Virtual Account.

HTTP Communication Failures

If you see HTTP Communication failure errors, verify whether:

- The HTTP server configuration on the switch is correct. To verify this, execute the `show run | s http` command.
- The Call Home address or URL is correct. To verify this, execute the `show call-home profile all` command.
- The HTTP using ping tools.cisco.com or the nnslookup translated IP.

- The HTTP client source interface is correct.

- The DNS/IP in the Call Home profile is correct.

- The ip route is pointing to the right route.

- The TCP443 is not blocked any where in the path.

PKI Certificates are not Saved

If the required PKI certificates for your smart licsenses are not saved, your license registration is not sucessful.

When smart license is registering, a cryto key is generated. This key is automatically saved. However, if another user is writing or configuring at the same time, an overwrite occurs. In this case, the key is not saved unless you manually save it.

Recommended Solution

Use the following sample EEM applet to save the configuration:

```
event manager applet PKI_CONFIG_SAVE auth by
event syslog severity warning pattern "%PKI-4-NOCONFIGAUTOSAVE"
action 2 syslog priority notifications msg "PKI Configuration was modified but not saved.
Issuing write memory to save new IOS PKI configuration"
action 3 cli command "enable"
action 4 cli command "write memory"
```

Troubleshoot Specific License Reservation

This section describes the steps to troubleshoot issues when configuring Specific License Reservation.

Reservation install file failed: Bad input parameter

When you register the device using the `license smart reservation install` command, a bad input parameter error is displayed.

Sample Syslogs

```
#license smart reservation install file bootflash:auth1.txt
%Error opening bootflash:auth1.txt (Permission denied)Reservation install file failed: Bad
 input parameter
```

The sys log indicates that the auth file is incorrect.

Recommended Solution

Verify that the file containing the authroization code is loaded on the device flash. See Register the Device Using the Authorization Code.

If you have an issue with the authorization code, generate an auth code from the CSSM. For more information, see Generating an Auth Code from Cisco Smart Software Manager.

Invalid Return Code

When entering the Reservation Return Code on the CSSM portal, the following error is displayed:

The Reservation Return Code you entered is not valid. Ensure that you have entered the entire code.

Recommended Solution

Verify that you have entered the correct Reservation Return Code and that there is no extra character or space in the code. After you have verified the code, try again.