Troubleshoot License Alarm for NCS2K and ONS15454

Contents

Introduction

This document describes general license-related alarms raised for Network Convergence System 2000 (NCS2k) and the procedure to troubleshoot and install the license.

License Types

1. Evaluation license: The evaluation license is defaulted with all new cards and supports for 180 days (for most of the features).
2. Temporary license: Temporary licenses need to be requested from Cisco.
3. Permanent license: Permanent licenses need to be requested from Cisco.

Alarms and Conditions

Evaluation License in Use

Condition EVAL-LIC or Evaluation license in Use alarm to be raised against card if the feature is provisioned and permanent license not installed.

LICENSE-EXPIRED

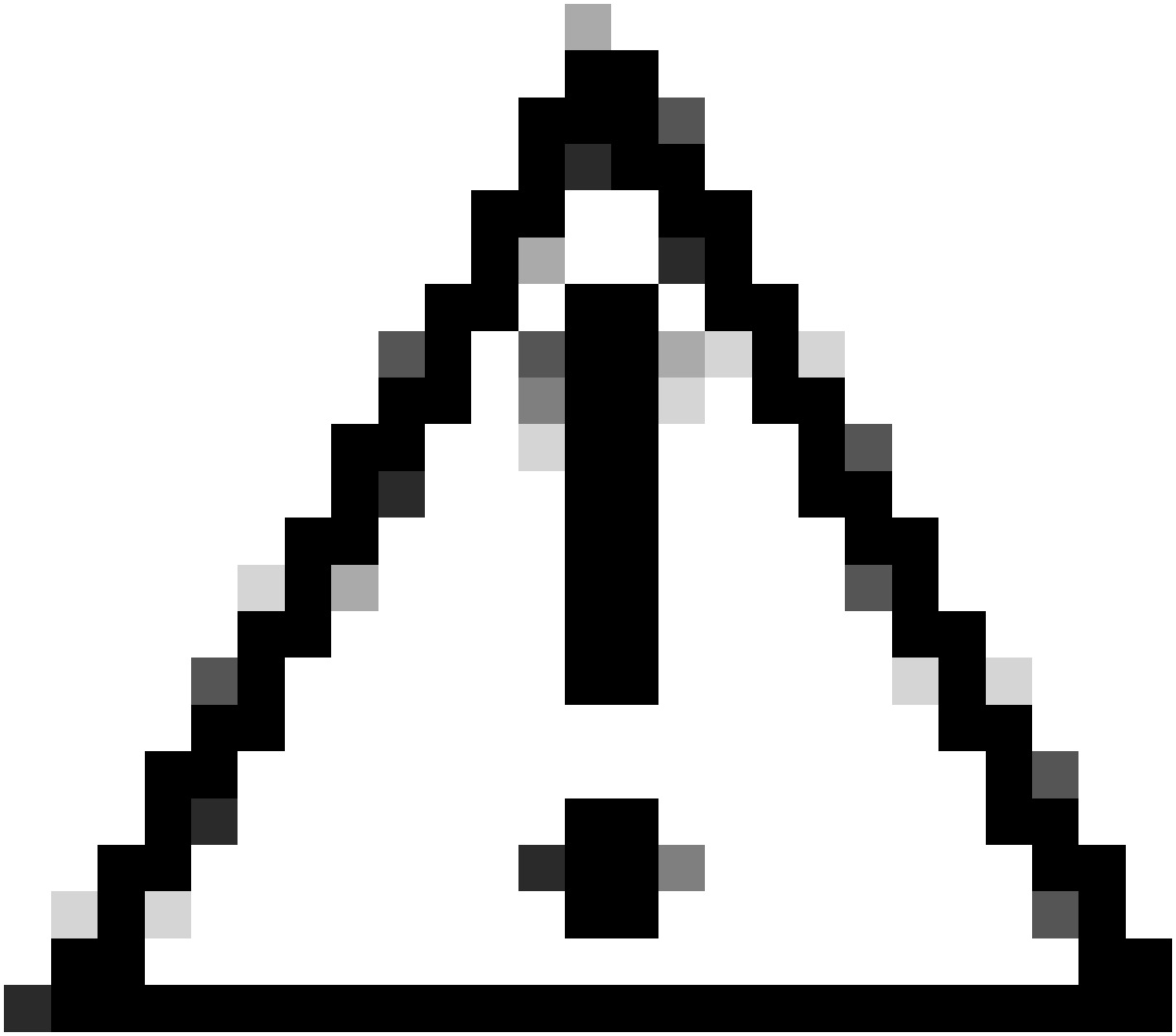
Default Severity: Critical (CR), Service-Affecting (SA)

The License Expired (LICENSE-EXPIRED) alarm is raised when an evaluation license or a temporary license expires and there is no other valid license installed on the device. When a switchover of the control card or soft reboot/hard reboot of the target line card is performed. After the reboot, the card raises an LIC-MISSING alarm. Cisco recommends not performing controller switchover or line card reset. It takes down the traffic.

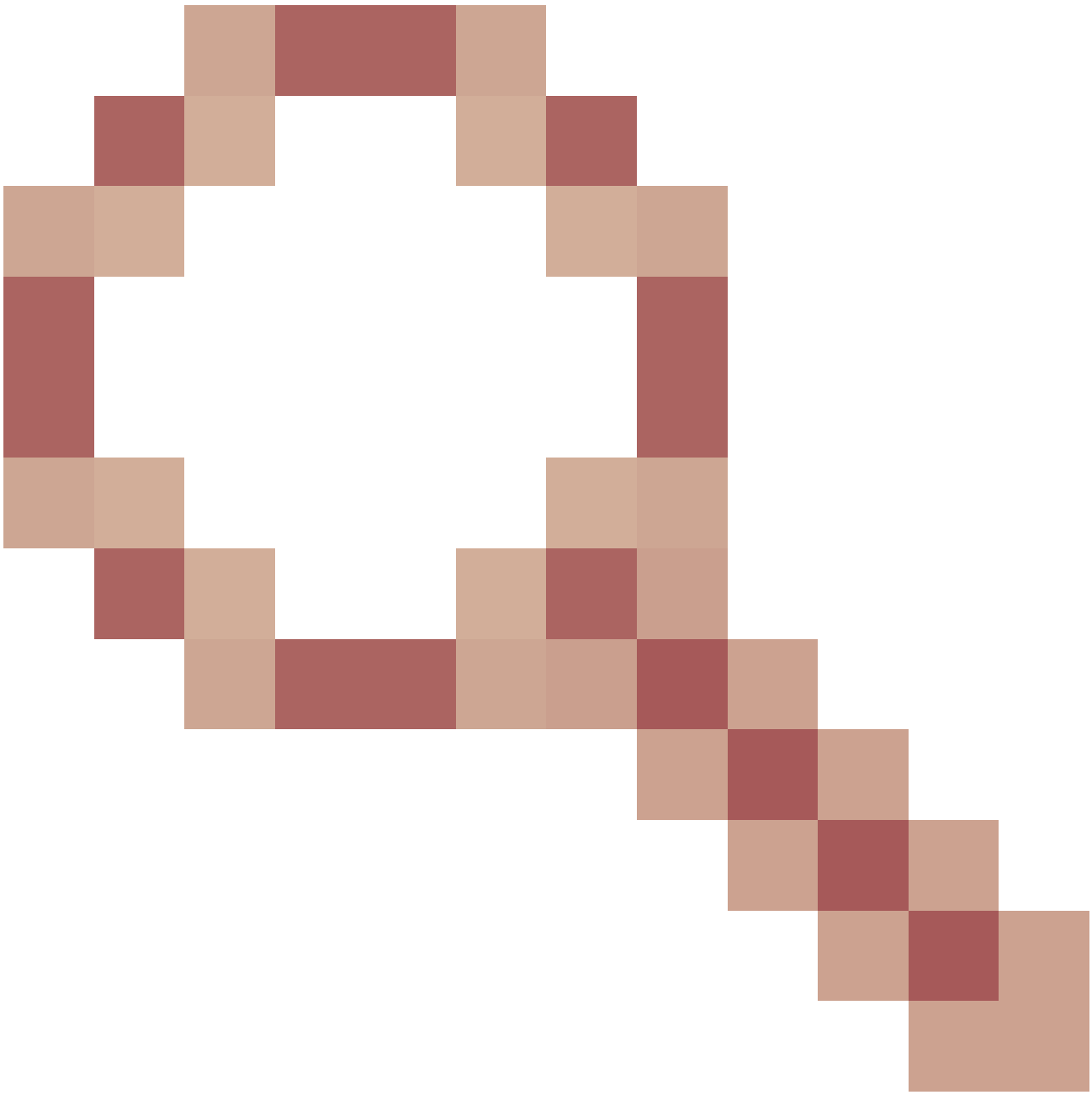
Before the license expires, the user is to be notified with LIC-EXPIRING-SOON (in the range of 1 to 14 days) and LIC-EXPIRING-SHORTLY (in the range of 0 to 24 hours) alarms.

Temporary License (TEMP-LIC)

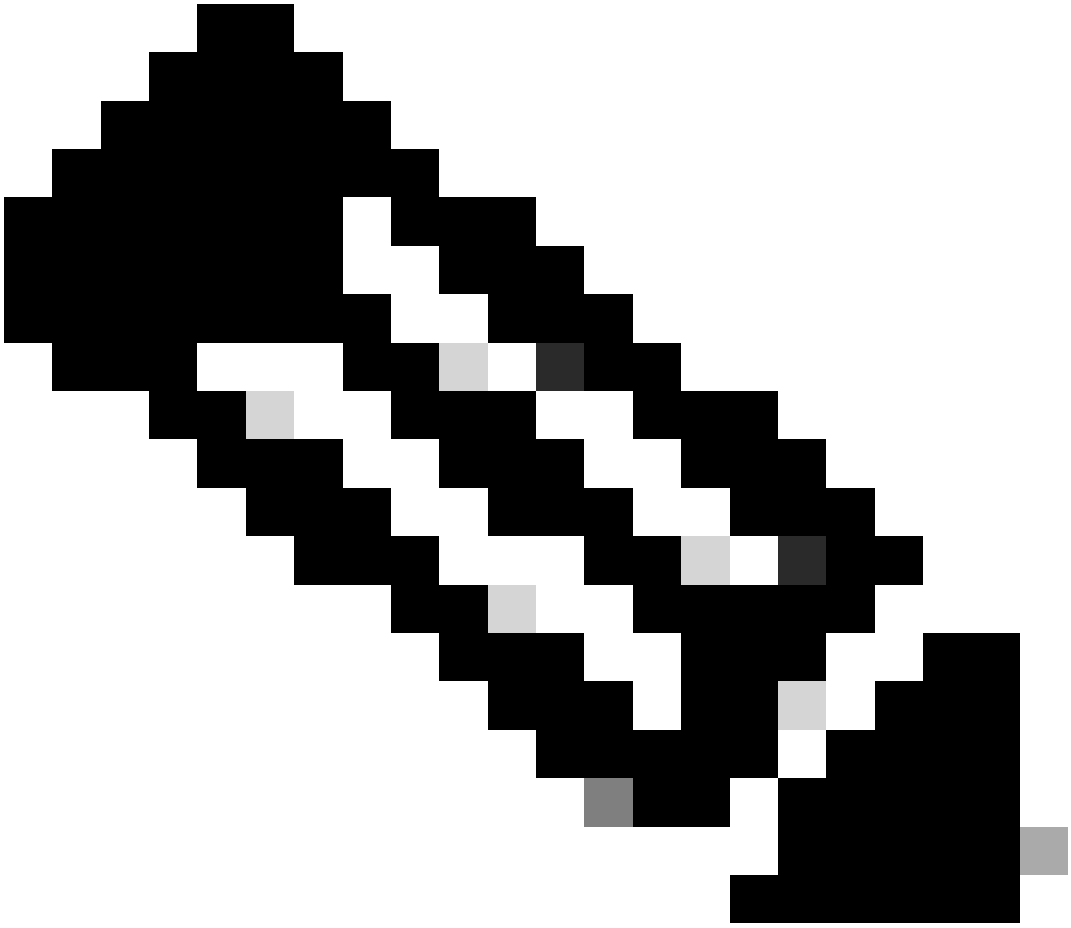
The alarm is raised just to indicate that a valid temporary license is in use. Installing a permanent license clears the alarm. The alarm is Non-Service-Affecting (NSA).



Caution: Cisco bug ID CSCvz30524



: A TNC switch or Line Card (LC) manreset with an expired license can result in no relevant alarms or a silent trunk laser off condition.



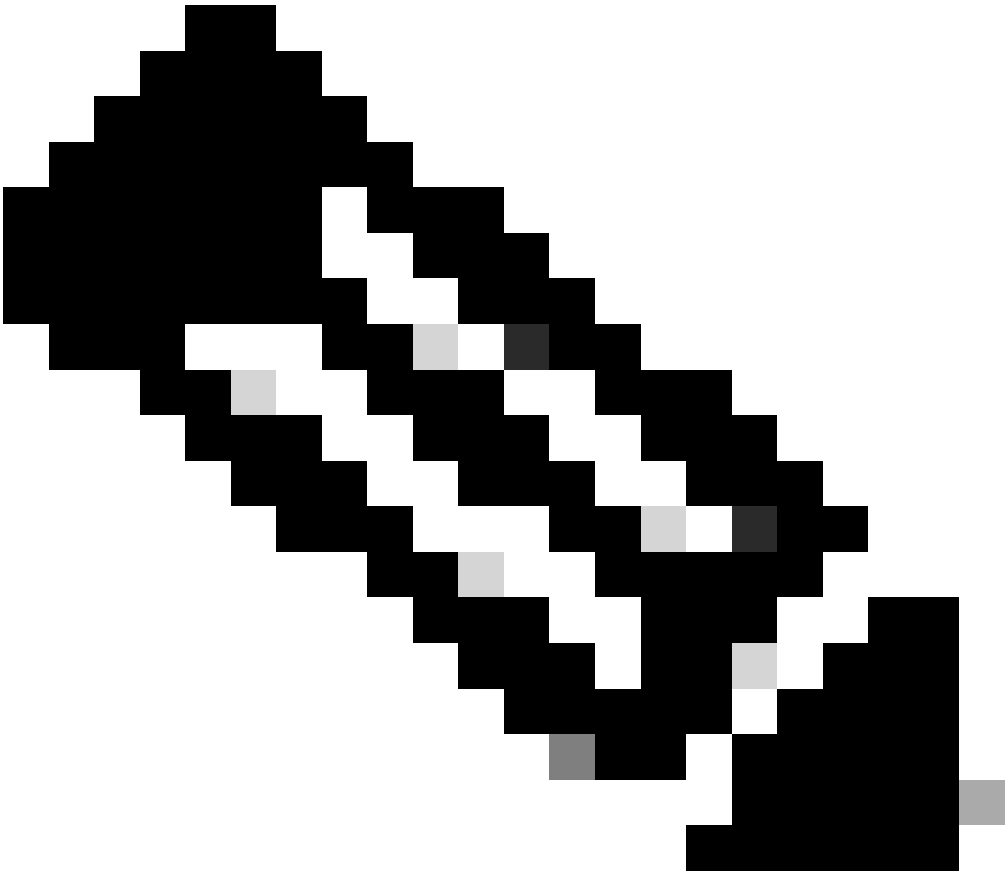
Note: Some card like 400G-XP does not allow the traditional process of a license generated via a PAK, 400G-XP licensing is a "trust-based licensing". CTC does not have a license tab for the 400G-XP card. Other NCS2k cards with trust-based licensing is; NCS2K-FSSMR-2-LIC=.

License Installing

Prerequisites

Collect this info before requesting a license from Global Licensing Operations (GLO):

1. Cisco sales order number
2. License SKU/PID of part
3. Smart account name/domain
4. Virtual account name
5. PAK number if any
6. Card Serial number

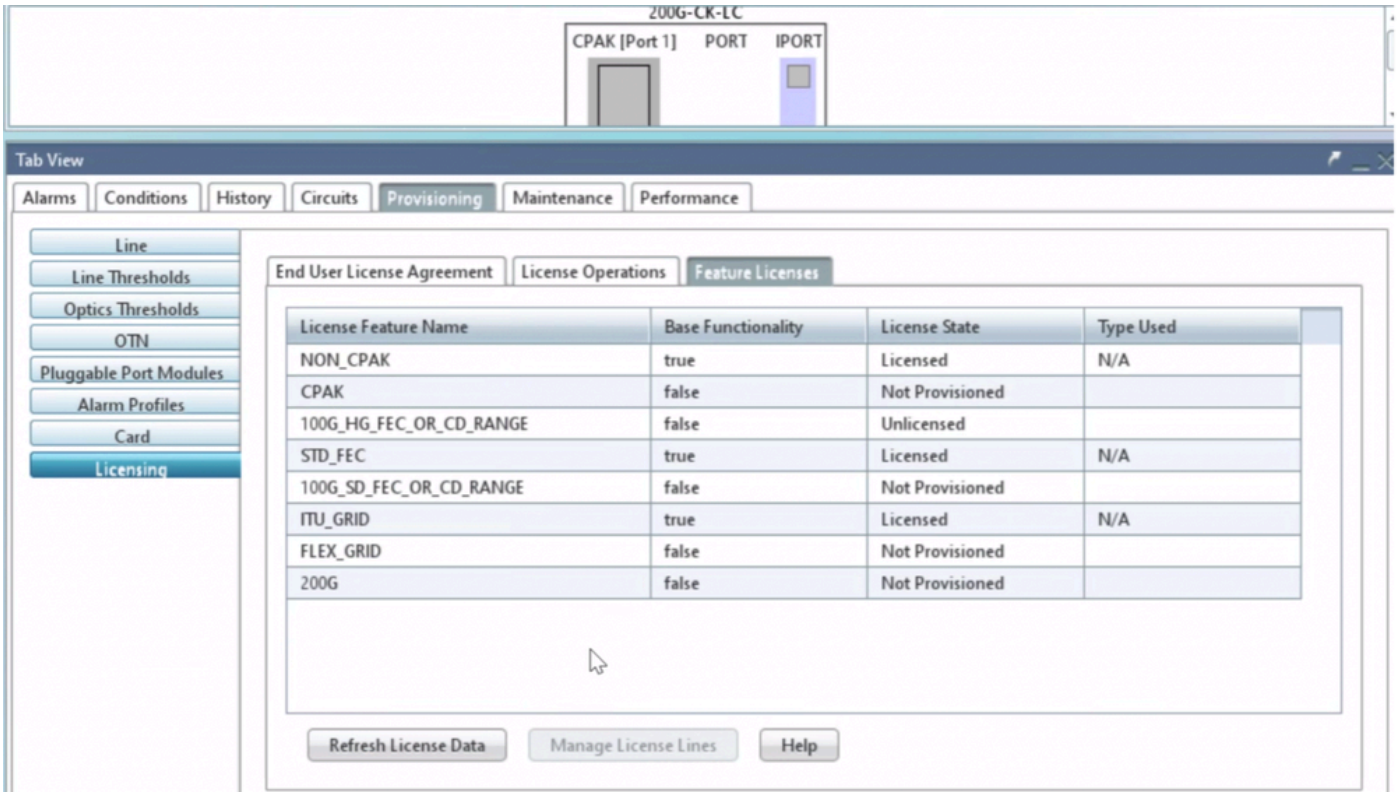


Note: Points 2, 5, and 6 are mandatory for new licenses.

Information Needs to be Collected from Cisco Transport Controller (CTC) Application

Sample steps shared for card 200G-CK-LIC and feature 100G_HG_FEC_OR_CD_RANGE:

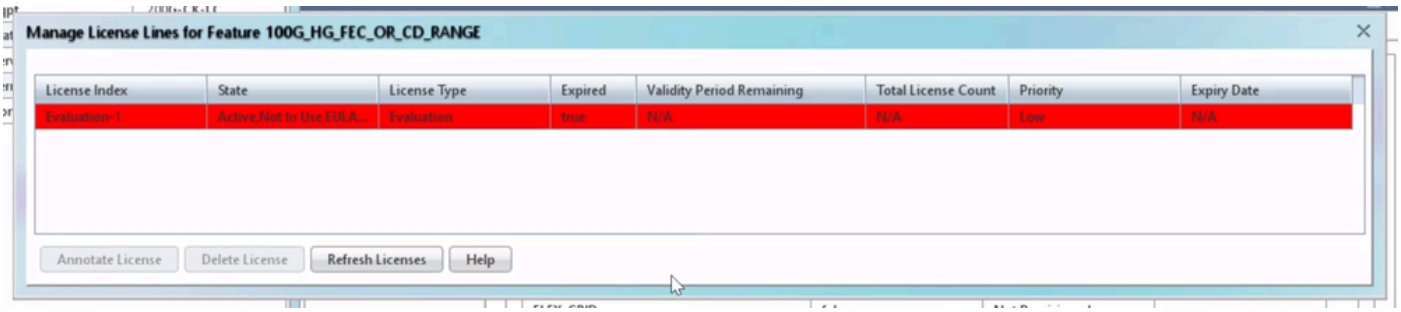
1. Navigate to Card view > Provisioning > Licensing > Feature Licenses as shown in this image.



Feature Licenses table

2. Check License State.

3. If a value is Unlicensed, select the row from the Feature Licenses table and click on **Manage License Lines** as shown in the image.



License Detail

4. If the license is expired, you need to get a new license file.

5. Mark the license feature name and search for SKU in the [card datasheet.]

For example:
100G_HG_FEC_OR_CD_RANGE feature is showing Unlicensed Fetch Feature ID (SKU) for 100G_HG_FEC_OR_CD_RANGE feature

1. Open Datasheet for Card 200G-CK-LIC.

2. Look into Ordering Information as shown in the image.

Table 11. Ordering Information

Part Number	Description
NCS2K-200G-CK-C=	50G/100G/200G CPAK Multi Rate Line Card - SD FEC C Band
NCS2K-200G-CK-LIC=	CPAK MR Line Card - C-Band - Licensed
NCS2K-100G-CK-LIC=	100G CPAK MR SD-FEC Line Card - C-Band - Licensed (includes Client, FS, HG FEC and SD FEC)
L-NCS2K-CK-CL=	SW license - CPAK Client
L-NCS2K-FS=	SW license - Flex-Spectrum on WDM Trunk port
L-NCS2K-DQPSK-LH=	SW license - HG-FEC on 100G CP-DQPSK WDM Trunk port
L-NCS2K-SD-FEC=	SW license - Soft-Decision FEC on WDM Trunk port
L-NCS2K-SFEC-BPSK=	SW license - SD-FEC & BPSK on 50G WDM Trunk port
L-NCS2K-SFEC-16Q=	SW license - SD-FEC & 16-QAM on 200G/250G WDM Trunk port

Ordering Information for 200G-CK-LIC

Select L-NCS2K-DQPSK-LH= SW license - HG-FEC on 100G CP-DQPSK WDM Trunk port.

6. Fetch UDI information from the Card:

a. Telnet to the node.

b. Navigate to the card.

c. Fetch log for license_ui_show_udi

```
WARNING
This system is restricted to authorized users for business purposes. Unauthorize
access is a violation of the law. This service may be monitored for administrati
and security reasons. By proceeding, you consent to this monitoring.

ATTENTION!!!
This shell is intended for QUALIFIED PERSONNEL ONLY.  Customer Use of
this shell is not recommended OR supported by the Technical Assistance
Center.  Inappropriate use of shell Commands can have a Negative AND
Service Affecting impact on your network.  Please consult the User
Documentation for appropriate troubleshooting procedures.

To exit without logging in, enter Control-D at the login prompt.
To exit after logging in, type "logout" at the prompt.



Login: CISCO15

Password:XXXXXX

To discontinue logging in, type control-d or wait 60 seconds.
After logging in, type 'enablec' to enable abort key (control-c).


->
```

```
-> enablec
value = 3 = 0x3
->
-> shelfConns

ShelfId: ShelfIp:           Link:   Cause:            Dwnld
-------- ------------------ ------- ----------------------
1        192.168.190.160    Full    Prov/Init Complete N        --->Select Shelf and telnet to it's IP
value = 50 = 0x32 = '2'
->
->
->telnet "192.168.190.xxx"                                      ---> Need to enter password (default)
->
->
->caDump                                                       ---> list of cards within shelf. Copy IP
chassis type = M6_ETSI, my slot = 8, myCpu = 0, myCpuId=0x8
max slot=9 max cpuid=0x12
My MAC = D0:0F:02:00:00:02
My IP = 192.168.190.101 (0xC0XXXX65)
bits references per chassis = 2, references per IO slot = 3
Slot      Name       Capabilities                                          SCL       IP        Protection
---- -------------- ------------------------------------------------- --- -------------- ----------
  1  TNC-1           1:1-M IO TCC OCN-OK CPU                             0 192.168.190.100     1:1
     PTP-1           1:1-M CPU PTP                                       2 192.168.190.227     1:1
  2  IO-1            12 48M2 1:1-M 1:N-M IO OCN-OK CPU                  10 192.168.190.235     1:1
  3  IO-2            12 48M2 1:N-M 1:1-P IO OCN-OK CPU                  11 192.168.190.11      1:1
  4  IO-3            12 48M2 1:1-M 1:N-P IO OCN-OK CPU                  12 192.168.190.237     1:1
  5  IO-4            12 48M2 1:N-M 1:1-P IO OCN-OK CPU                  13 192.168.190.13      1:1
  6  IO-5            12 48 48M2 192 1:1-M 1:N-M IO OCN-OK CPU            6 192.168.190.6       1:1
  7  IO-6            12 48 48M2 192 1:N-M 1:1-P IO OCN-OK CPU            7 192.168.190.7       1:1
  8  TNC-2           1:1-P IO TCC OCN-OK CPU                             1 192.168.190.101     1:1
     PTP-2           1:1-P CPU PTP                                       3 192.168.190.228     1:1
value = 1 = 0x1
->
->
-> telnet "192.168.190.235"                                  ---> Login to Card


To discontinue logging in, type control-d or wait 60 seconds.
After logging in, type 'enablec' to enable abort key (control-c).


-> enablec
value = 3 = 0x3
->
-> mManufDisplay
HW Part Number       : 800-4XXX6-06
HW Revision          : A0
Card serial number   : CATXXXXX028
Card Name            : 200G-CK-LC
CLEI Code            : WOTXXXXBAA
Equipment ID         : 0x2828
Application filename : 200G.BIN
Extended Information : 1528.77;50;96;PID=NCS2K-200G-CK-LIC;VID=V06 ;
Firmware Version     : 57-6398-05
Copyright            : Copyright (c) 2001-2006 by Cisco System
->
->
->license_ui_show_udi
Device# PID                    SN                    UDI
------------------------------------------------------------------------------
*0      NCS2K-200G-CK-LIC      CATXXXXX028           NCS2K-200G-CK-LIC:CATXXXXX028          ---> UDI
```

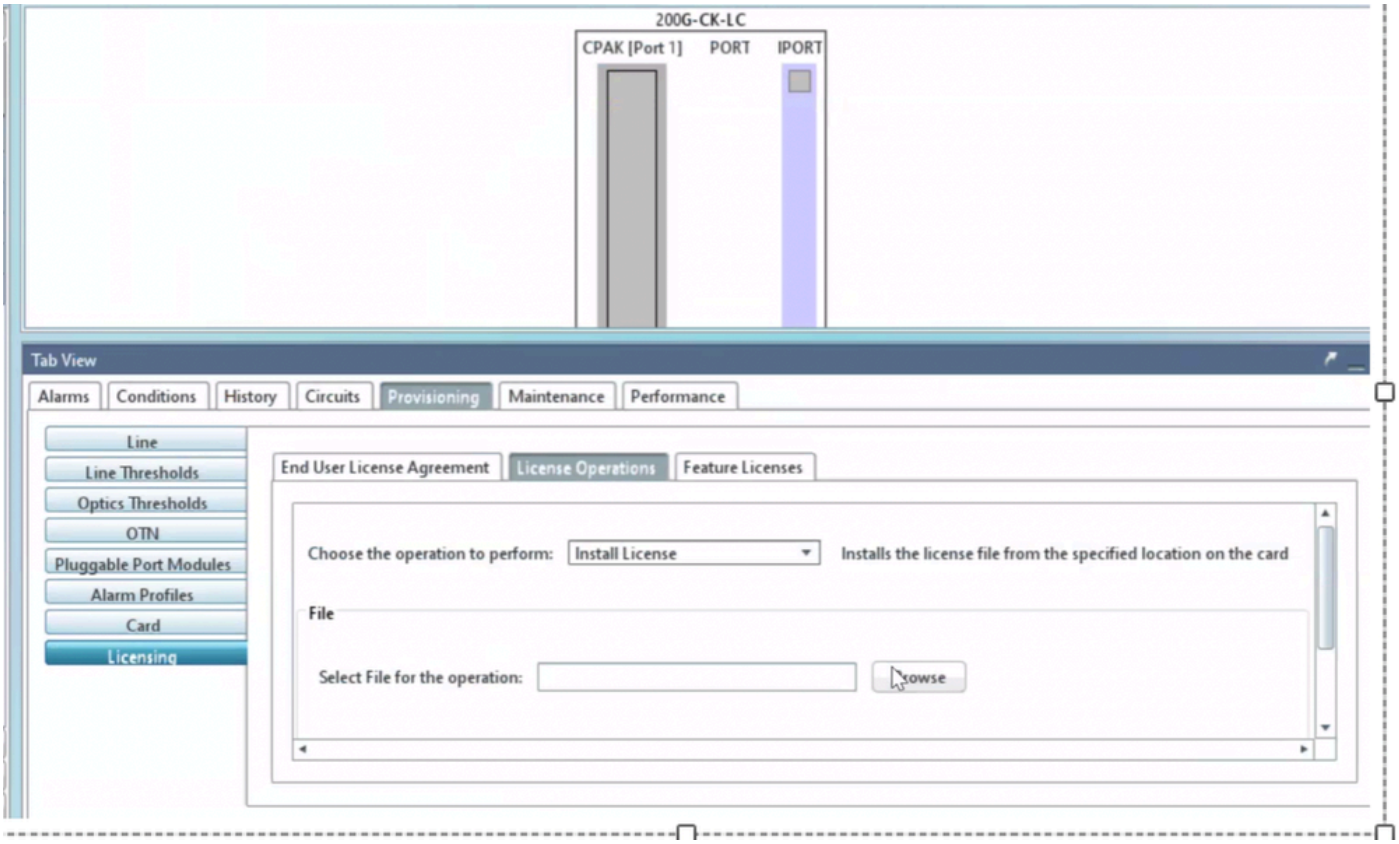
```
value
->
-> logout                                          ---> logout from card

telnet: Closed connection.
value = 0 = 0x0
->
```

7. Share SKU and UDI with the Licensing Team.

8. Once the license file is generated;

    1. Navigate to Card view > Provisioning > Licensing > License Operations.
    2. Browse the license file and install it as shown in the image.
    3. Then, navigate o to the Feature Licenses tab and click on Refresh License Data to verify the installation.



License Operations tab

Troubleshooting

Case 1. Evaluation License in Use

1. If the card is replaced and the evaluation license is in use, the alarm is reported. You need to transfer the license from the old card to the new card.
2. You can rehost the license with Cisco License Portal by referring to this guide.
3. Or, contact Cisco TAC for support.

Case 2. Error: UDI in the License Line does not Match with the Local UDI

Common Scenarios

1. While installing the new license.
2. License transfer.

Common Cause

The error message indicates that the UDI information provided while generating the license does not match the target card.

Fix

Provide the right UDI information and generate the license again.

Steps to fetch UDI information for NCS2k devices are shared in the topic License Installing.

Case 3. Error: Duplicate License

Common Scenarios

While installing a license for a new feature

Common Cause

License for that feature must be present on the target card.

Fix

Understand which feature license is required. The steps shared helps to list all active feature and licenses on the target card.

Steps to List All Features and Licenses

Sample screenshots are from Card: AR-MXP-LIC

1. Navigate to Card view > Provisioning > Licensing > Feature Licenses as shown in the image. 

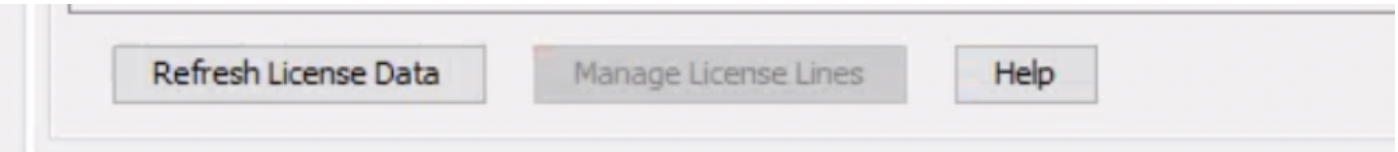
Feature Licenses tab

a. If the base functionality is true, then that feature does not require a license.

b. License State describes whether that feature is provisioned and licensed.

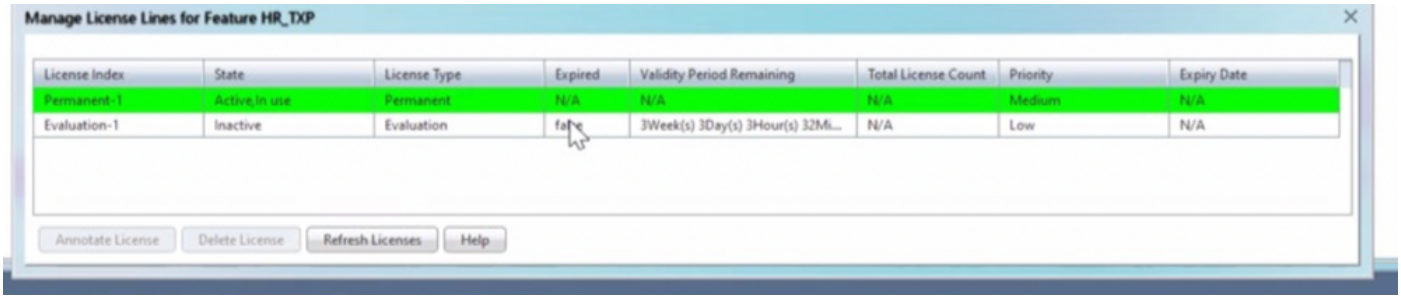
2. Please understand card mode and other provisioning before troubleshooting this issue.

3. For more details on the feature, you need to select that row in the **Feature Licenses** table and click on **Manage License Lines**



Manage License Lines button in Feature Licenses

4. New pop-up shows all licenses against that feature (evaluation, temp, and permanent).



Selected License Detail

Case 4. Error: Permission ticket URL has more than one permission:

- After replacing the 200G card, we started observing an "Evaluation in Use" alarm on the card.
- We initiated the process of rehosting the license files from the old SN to the new SN.
- Encountered an error: 'Permission ticket URL has more than one permission' while rehosting the license.
- Advised to select the 'Install' option instead of the 'Rehost License' option and retry.
- This helped to clear the alarm.

