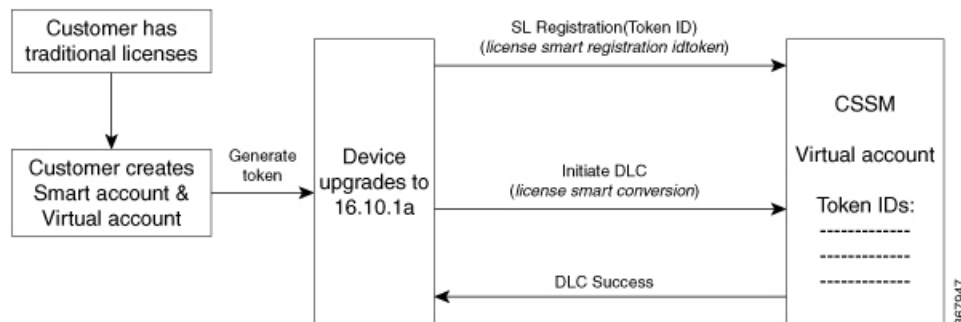




Migrate from Traditional Licensing to Smart Licensing

Cisco employs two types of license models - Traditional or Classic Licensing and Smart Software Licensing. If you are an existing user who is using a device earlier than Cisco IOS XE Release 16.10.1a, you are most likely using Traditional Licensing such as an RTU license, paper license, or a PAK license. If you want to upgrade to the Cisco IOS XE Release 16.10.1a or later SL-only image, you must migrate to Smart Licensing. The following image specifies the high-level steps to migrate to Smart Licensing:

Figure 1: Migrate to Smart Licensing



When you upgrade to IOS XE Release 16.10.1a or later, your existing licenses change to the evaluation (EVAL) state till the device registration is complete. However, existing features continue to function without interruption. After registration, the licenses change to the AUTHORIZED state.

1. Ensure that all the prerequisites are met before you migrate to Smart Licensing. See the [Prerequisites](#) section.
2. Load the 16.10.1a or later image. See the [Load the 16.10.1a or Later Image, on page 2](#) section.
3. Generate a token ID using the CSSM Portal. See the [Generating a New Token from Cisco Smart Software Manager](#) section.
4. Register your device using the token that you generated. See the [Registering Device using the id Token](#) section.
5. Initiate DLC conversion. See the [Initiate DLC, on page 3](#) section.



Note For IOS XE, DLC is not supported on ASR 1000 Series RP2 platforms running non-universal K9 images. As a workaround, you can migrate to intermediate releases such as IOS XE 16.3, 16.6, or 16.9, before migrating to IOS XE 16.10.1a or later. Or, contact the Cisco TAC team by telephone to migrate from traditional licenses to smart licenses.

The following sections describe the migration workflow in detail:

- [Load the 16.10.1a or Later Image, on page 2](#)
- [Device Led Conversion, on page 2](#)
- [Initiate DLC, on page 3](#)
- [Verify the Migration Status in CSSM Portal, on page 3](#)
- [Verify DLC Status on Satellite, on page 4](#)

Load the 16.10.1a or Later Image

As the first step of migrating to Smart Licensing, you must load the Cisco IOS XE 16.10.1a or later image. When you upgrade to this image, Smart Licensing is automatically enabled.



Note You cannot execute the `license smart enable` command on the device.

After you load the SL-only image, proceed to [Generating a New Token from Cisco Smart Software Manager](#).

Device Led Conversion

Device Led Conversion (DLC) is the process where a new device or a product instance is upgraded from Traditional to Smart Licensing when registered in Cisco Smart Software Manager (CSSM). All licenses on the device automatically convert from Classic or Perpetual Right-to-Use (RTU) License to Smart License without the need for any manual conversion.



Note You can perform the DLC operation only once during the life of the device.



Important CSR does not support DLC in the Cisco IOS XE 16.10.1a release. You can either deposit licenses directly or you can convert licenses in CSSM and License Registration Portal (LRP).



Note ASR does not support OTV, LISP, VPLS, and FPI licenses for DLC.

Initiate DLC

To initiate the DLC operation, execute the `license smart conversion start` command. If the DLC operation is complete, the device displays a "Completed" status.

The following is an example of DLC completion. Note the Completed output in the DLC Status field.

```
Device#show platform software license dlc
Index 1 Feature:          adventerprise
Permanent License:      0
EVAL RTU License:       1
RTU License:            0
Paper License:          0
DLC Status:             Completed
Index 2 Feature:
    Permanent License:   0
    EVAL RTU License:    1
    RTU License:         0
    Paper License:       0
    DLC Status:          Completed
Index 3 Feature:         fwnat_red
Permanent License:      0
EVAL RTU License:       1
RTU License:            0
Paper License:          0
DLC Status:             Completed
```

To verify whether the operation was successful, run the `show license all` command. The system displays a "Success" status if the DLC operation is successful. The following example shows a successful DLC operation:

```
Device#show license all | sec License Conversion:
License Conversion:
Automatic Conversion Enabled: False
Status: Successful on Nov 08 18:54:40 2018 IST
```

To convert broadband licenses using DLC for an ASR1000 device, execute the `subscriber license dlc <sessions>` command. This command sets the total number of broadband sessions that can be converted using DLC including paper licenses and PAK licenses.

To consume the broadband licenses in the 16.10.1a or later image, use the **subscriber license session** command. If this command is not configured, the broadband module also supports the automatic procuring of licenses for every 2K session brought up in the device.

Any broadband licenses from traditional licensing are consumed as 2k sessions in SL-only mode in 16.10.1a or later. For example, if a customer has 10 licenses as broadband and 4k in traditional licensing, after migrating to SL-only image, these licenses are visible as 12 licenses in feature broadband during the DLC conversion. Use the **show platform software license dlc** command to view the 12 licenses.

Verify the Migration Status in CSSM Portal

After the DLC conversion is successful, the smart licenses for your virtual account are authorized. You can verify the status of the migration by checking the message in the CSSM portal.

SUMMARY STEPS

1. Log in to the CSSM portal. Click **Inventory > Product Instances**.

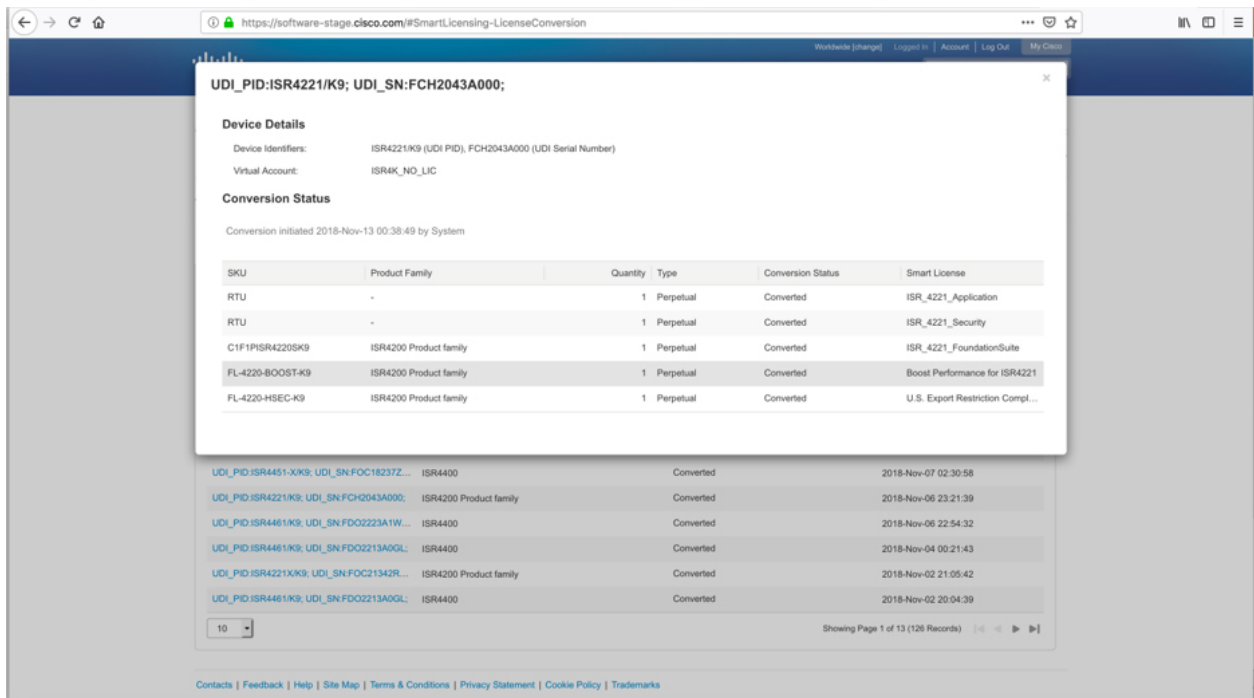
- Verify whether the DLC operation is successful by clicking the **Convert to Smart Licensing** tab, and clicking **Conversion History**. You see the following in the portal:

DETAILED STEPS

Step 1 Log in to the CSSM portal. Click **Inventory > Product Instances**.

If the migration is successful, the converted licenses are added in CSSM.

Step 2 Verify whether the DLC operation is successful by clicking the **Convert to Smart Licensing** tab, and clicking **Conversion History**. You see the following in the portal:



UDI_PID:ISR4221/K9; UDI_SN:FCH2043A000;

Device Details

Device Identifier: ISR4221K9 (UDI PID), FCH2043A000 (UDI Serial Number)

Virtual Account: ISR4K_NO_LIC

Conversion Status

Conversion initiated 2018-Nov-13 00:38:49 by System

SKU	Product Family	Quantity	Type	Conversion Status	Smart License
RTU	-	1	Perpetual	Converted	ISR_4221_Application
RTU	-	1	Perpetual	Converted	ISR_4221_Security
C1F1PISR42205K9	ISR4200 Product family	1	Perpetual	Converted	ISR_4221_FoundationSuite
FL-4220-BOOST-K9	ISR4200 Product family	1	Perpetual	Converted	Boost Performance for ISR4221
FL-4220-HSEC-K9	ISR4200 Product family	1	Perpetual	Converted	U.S. Export Restriction Compl...

UDI_PID:ISR4451-KX9; UDI_SN:FOC18237Z... ISR4400
Converted 2018-Nov-07 02:30:58

UDI_PID:ISR4221/K9; UDI_SN:FCH2043A000; ISR4200 Product family
Converted 2018-Nov-06 23:21:39

UDI_PID:ISR4451/K9; UDI_SN:FDO2223A1W... ISR4400
Converted 2018-Nov-06 22:54:32

UDI_PID:ISR4451/K9; UDI_SN:FDO2213A0GL; ISR4400
Converted 2018-Nov-04 00:21:43

UDI_PID:ISR4221/K9; UDI_SN:FOC21342R... ISR4200 Product family
Converted 2018-Nov-02 21:05:42

UDI_PID:ISR4451/K9; UDI_SN:FDO2213A0GL; ISR4400
Converted 2018-Nov-02 20:04:39

Showing Page 1 of 13 (126 Records)

It takes about an hour or more for the Conversion Status of the DLC to display as "Converted" on CSSM. This status means that the DLC is complete and that successful logs have been detected on the device.

Verify DLC Status on Satellite

This verification topic is applicable only if you have configured Smart Licensing for Satellite.

Step 1 Log in to the Satellite Server, and click the **Licenses** tab. If your device is registered successfully, the Licenses are in the **In Use** State.

After you initiate DLC, the Licenses move to the **Pending** state.

UDI_PID:ISR4331/K9;UDI_SERIAL_NUMBER:FDO19360L1V;

Device Details

Device Identifiers: ISR4331/K9 (Udi pid), FDO19360L1V (Udi serial number)
 Virtual Account: ISR-DLC-Prod-5.0

Conversion Status

Conversion Pending at Fri Nov 16 02:29:43 2018

SKU	Product Family	Quantity	Type	Conversion Status	Smart License
-	ISR 4331 PRD	0	SENTINAL_LINE	Pending	-
-	ISR 4331 PRD	0	SENTINAL_LINE	Pending	-
-	ISR 4331 PRD	0	SENTINAL_LINE	Pending	-
-	ISR 4331 PRD	0	SENTINAL_LINE	Pending	-
-	ISR 4331 PRD	1	ENTITLEMENT	Pending	-

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Step 2

After the DLC conversion is successful, click the **Conversion History** tab to verify whether the conversion status is updated to "Converted".

Smart Software Manager satellite

admin Log Out | About | Help

Cisco Smart Software Manager Last Synchronization: 2018-Nov-16 20:06:32 UTC [Synchronize Now](#)

Satellite-DLC-Prod-5.0.1

Virtual Accounts

ISR-DLC-Prod-5... 1

Synchronization

Reports

Administration

1 Major [Hide Alerts](#)

Version Compatibility Note - Temporarily, this satellite will only be able to register Product Instances that are using the multi-level certificate hierarchy feature (use "show license" on the Product Instance to ensure that the agent version is 1.5*). To enable registration of Product Instances using older versions of the agent, wait two business days after the satellite's initial registration and then synchronize. [Dismiss](#)

ISR-DLC-Prod-5.0

General Licenses **Conversion History** Product Instances Event Log

Search by Device Identifier, Product Family or Conversion Status [Filter](#)

Product Instance Name	Product Family	Conversion Status	Time
UDI_PID:ISR4331/K9;UDI_SERIAL_NUMBER:FDO19360L1V;	ISR 4331 PRD	Converted	2018-Nov-16 20:09:40 UTC

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After the migration is complete, in the **Licenses** tab, the **Purchased** count is updated to 1 from 0. Also, the conversion status is displayed as "CONVERT_SUCCESS".

Smart Software Manager satellite admin Log Out | About | Help

Cisco Smart Software Manager Last Synchronization: 2018-Nov-16 20:06:32 UTC [Synchronize Now](#)

Satellite-DLC-Prod-5.0.1

Virtual Accounts

- ISR-DLC-Prod-5.... 1
- Synchronization
- Reports
- Administration

Version Compatibility Note - Temporarily, this satellite will only be able to register Product Instances that are using the multi-level certificate hierarchy feature (use "show license" on the Product Instance to ensure that the agent version is 1.5+). To enable registration of Product Instances using older versions of the agent, wait two business days after the satellite's initial registration and then synchronize. [Dismiss](#)

ISR-DLC-Prod-5.0

1 Major [Hide Alerts](#)

General **Licenses** Conversion History Product Instances Event Log

Type text to begin searching [Filter](#)

License	Billing	Purchased	In Use	Balance	Alerts
Boost Performance for ISR4331	Prepaid	1	1	0	
ISR_4331_Application	Prepaid	1	1	0	
ISR_4331_Hsec	Prepaid	1	1	0	
ISR_4331_Security	Prepaid	1	1	0	
ISR_4331_UnifiedCommunication	Prepaid	1	1	0	
Unified Survivable Remote Site Telephony (SRST) Endpoint License	Prepaid	0	5	-5	Insufficient Licenses

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