

Revised: October 7, 2024

# Classic Licensing In Cisco IoT FND

## Cisco IoT FND Licensing

Cisco IoT FND supports the classic licensing model and requires device-specific licenses to manage the devices. The software is authorized using software package licenses, while the supported devices and device types use device licenses for authorization.

Cisco offers perpetual and subscription-based licensing models for the devices. The subscription-based device licenses are valid for a specific period. Choose a period of 1, 3, 5, or 10 years. The perpetual device licenses don't expire.

The subscription-based licensing includes Cisco IoT FND maintenance and support. With perpetual licensing, Cisco IoT FND maintenance and support is an add-on purchase.



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Starting from Cisco IoT FND Release 4.7.x, the new device licenses are offered through subscription-based licensing only.

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## Prerequisites For Cisco IoT FND Licensing

- A software package license for the Cisco IoT FND application.



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A software package license is mandatory for each of the Cisco IoT FND instances that you're deploying. Software package licenses don't expire.

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- Either of the following for managing devices:
  - A set of perpetual device licenses



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Perpetual device licenses don't expire.

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- A set of subscription device licenses.



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Subscription device licenses are valid for 1, 3, 5, or 10 years.

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- Optionally, a software package license for a Geographic Information System (GIS) map.



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This license doesn't expire.

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# Purchasing Licenses For Cisco IoT FND

Purchase the following licenses for managing Cisco Catalyst IR8100 Heavy-Duty Series Routers for three years, in a bare metal server deployment:

- A software package license: R-IOTFND-K9, under the IOT-FND license
- A subscription-based device license: IOTFND-IR8100, under the IOTFND-SOFTWARE-K9 license

Similarly, purchase the perpetual licenses for managing a Cisco Catalyst IR1101 Rugged Series Router, in a VM deployment with Postgres:

- A software package license: R-IOTFND-VPI-K9, under the IOT-FND license
- A device license: L-IOTFND-IR1101, under the IOT-FND license

**Table 1: Cisco IoT FND Licenses and PIDs**

License Type and Description	PID		Supported Deployments
	Subscription Licensing	Perpetual Licensing	
<b>Top-Level Licenses</b>			
For software package licenses and perpetual device licenses	IOT-FND		—
For subscription device licenses	IOTFND-SOFTWARE-K9	—	—
<b>Software Package Licenses (under IOT-FND)</b>			
For a bare metal server deployment	R-IOTFND-K9		Bare metal server deployment
For a VM deployment with Oracle	R-IOTFND-V-K9		VM deployment with Oracle
For a VM deployment with Postgres	R-IOTFND-VPI-K9		VM deployment with Postgres
For GIS map	L-IOTFND-GIS-3YRS		<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
<b>Device Licenses</b>			
<ul style="list-style-type: none"> <li>• Subscription license PIDs are under IOTFND-SOFTWARE-K9</li> <li>• Perpetual license PIDs are under IOT-FND</li> </ul>			
For managing up to 100 endpoints, other than battery and cellular endpoints	IOTFND-EP-100	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>

License Type and Description	PID		Supported Deployments
	Subscription Licensing	Perpetual Licensing	
For managing up to 1,000 endpoints, other than battery and cellular endpoints	IOTFND-EP-1K	L-IOTFND-EP-1K	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>
For managing up to 1,000 battery endpoints	IOTFND-BEP-1K	L-IOTFND-BEP-1K	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>
For managing up to 1,000 cellular endpoints	IOTFND-CEP-1K	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>
For managing Cisco IR510 WPAN Industrial Router (IR510)	IOTFND-IR509	L-IOTFND-IR509	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>
For managing a Cisco 1000 Series Connected Grid Router	IOTFND-CGR1000	L-IOTFND-CGR1K	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>
For managing a Cisco 800 Series Industrial Integrated Services Router	IOTFND-IR800	L-IOTFND-IR800	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Cisco 800 Series Router	IOTFND-C800	L-IOTFND-C800	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Cisco Catalyst IR1100 Rugged Series Router	IOTFND-IR1100	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Cisco Catalyst IR1101 Rugged Series Router	IOTFND-IR1101	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Cisco Catalyst IR8100 Heavy-Duty Series Router	IOTFND-IR8100	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>

License Type and Description	PID		Supported Deployments
	Subscription Licensing	Perpetual Licensing	
For managing a Cisco Catalyst IR1800 Rugged Series Router	IOTFND-IR1800	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Long-Range Wide Area Network (LoRaWAN) Interface Module for Cisco 800 Series Industrial Integrated Services Router (IR800)	IOTFND-LORAWAN	L-IOTFND-LORAWAN	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Cisco IC3000 Industrial Compute Gateway	IOTFND-IC3000	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> <li>• VM deployment with Postgres</li> </ul>
For managing a Landis+Gyr N2450 Network Gateway	IOTFND-N2450	—	<ul style="list-style-type: none"> <li>• Bare metal server deployment</li> <li>• VM deployment with Oracle</li> </ul>

## Adding Licenses To Cisco IoT FND

1. From the Cisco IoT FND Menu bar, choose **ADMIN > System Management > License Center**.
2. Click the **Classic Licenses** tab.
3. Click **Add**.
4. In the **Upload License File** window, click **Browse** to locate the license file and then click **Open**.
5. Click **Upload**.



### Note

The devices in the **Managed** device category only consume the licenses. The devices in the the **OOS** device category don't consume licenses.

6. Click **Reset** to cancel the selected file and search for another file.



### Note

- If you import more devices that your Classic License allows, the import process won't fail. Any device imported beyond the license limit is marked as **Unmanaged** and is listed under **Status** in the **Browse Devices** panel. No other license types other than Classic Licenses support this capability.
- The license file contains the start and end dates for managing the devices and you can't modify the dates using Cisco IoT FND.

# Allocating Licenses

## For a Single Domain

1. From the Cisco IoT FND menubar, choose **ADMIN > Access Management > Domains**.
2. Click the root domain name you'd like to allocate licenses to.
3. In the **License Allocation** section, type in the number of licenses you'd like to assign to this particular domain in the **Licenses Assigned** field. For example, if your **Licenses Available** is 50, and type 20 in the **License Assigned** field, your **Licenses Available** would be 30.
4. The **Licenses Assigned** field indicates the licenses allocated to the root domain.

## For Multiple Domains

If you run multiple domains using the same Cisco IoT FND instance and you'd like to assign licenses to the subdomains, perform the following instructions:

1. From the Cisco IoT FND menubar, choose **ADMIN > Access Management > Domains**.
2. Click the sub domain name that you'd like to allocate licenses to.
3. In the **License Allocation** section, type in the number of licenses that you'd like to assign to the subdomain in the **Licenses Assigned** field.
4. The **Licenses Assigned** field indicates the licenses allocated to the subdomain.



### Note

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The **Licenses Available** field indicates the total number of licenses available in the Cisco IoT FND instance irrespective of the domains. When you allocate licenses to different domains, the **Licenses Available** field reflects the total number of licenses accordingly.

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# Managing Licenses Using Cisco IoT FND

From the Cisco IoT FND menubar, choose **ADMIN > System Management > License Center** to manage licenses using Cisco IoT FND.



### Note

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- Cisco IoT FND enforces licenses while importing the devices. In case you add additional licenses, Cisco IoT FND imports permitted number of devices, as defined in the licenses.
  - Without licenses, Cisco IoT FND allows only 3 routers and 100 mesh endpoints.
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# Viewing The Licensing Summary

1. From the Cisco IoT FND menubar, choose **ADMIN > System Management > License Center**.

2. Click **License Summary**. A list of devices with their license information appear.

 **Note**

The License Summary page displays the license information for devices in the **Managed** status only. The OOS devices aren't displayed on this page, as they don't consume any license.

For every license, Cisco IoT FND displays the following information:

**Table 2: Device License Summary Information**

Field	Description
Package Name	Name of license package.
Cisco 1000 Series Connected Grid Routers Licenses Consumed / Total	Number of Cisco 1000 Series Connected Grid Routers currently active in the network and the maximum number of CGR1000s supported by the license.
Cisco 800 Series Integrated Services Routers Licenses Consumed / Total	Number of C800 devices currently active in the network and the maximum number of C800 devices supported by the license.
Cisco IR800 Series Industrial Integrated Services Routers Licenses Consumed / Total	Number of IR800 (IR809 and IR829) devices currently active in the network and the maximum number of IR800 devices supported by the license.
Long Range Wide Area Network (LoRaWAN) Licenses Consumed / Total	Number of Cisco interface modules for LoRaWAN devices currently active in the network and the maximum number of Cisco interface modules for LoRaWAN devices that are supported by the license.
Cisco IR500 Series Distribution Automation Gateway Licenses Consumed / Total	Number of IR510 devices currently active in the network and the maximum number of IR510 devices supported by the license.
Cisco Catalyst IR1800 Rugged Series Routers Licenses Consumed/ Total	The number of Cisco Catalyst IR1800 Rugged Series Routers currently active in the network and the maximum number of Cisco Catalyst IR1800 Rugged Series Routers supported by the license.
Cisco IR1101 Integrated Rugged Services Router	The number of Cisco IR1101 Integrated Rugged Services Routers currently active in the network and the maximum number of Cisco IR1101 Integrated Rugged Services Routers supported by the license.
ENDPOINT Licenses Consumed / Total	Number of endpoint devices currently active in the network and the maximum number of endpoint devices supported by the license.
CELL_ENDPOINT Licenses Consumed / Total	Number of cell_endpoint devices currently active in the network and the maximum number of cell_endpoint devices supported by the license.
Cisco Catalyst IR8100 Heavy Duty Series Routers Licenses Consumed / Total	Number of Cisco Catalyst IR8100 Heavy Duty Series Routers currently active in the network and the maximum number of Cisco Catalyst IR8100 Heavy Duty Series Routers supported by the license.
Days Until Expiry	Number of days remaining until the license expires.

## Viewing the Licenses

1. From the Cisco IoT FND Menubar, choose **ADMIN > System Management > License Center**.
2. Click **Classic Licenses**. All the active licenses appear.

For every license file, Cisco IoT FND displays the following fields:

Field	Description
ID	License ID
PAK	Number for issuing license fulfillment, displayed as N/A.
Added At	The date and time that the license was added to Cisco IoT FND.
License Filename	Filename of the license.

## Deleting the Licenses



### Note

Ensure that you have access to license files before deleting existing license files. Without licenses, Cisco IoT FND only allows registration of 3 routers and 100 mesh endpoints.

1. Choose **ADMIN > System Management > License Center**.
2. Click **Classic Licenses**.
3. Check the license file ID check box that you want to delete.
4. Click **Delete**.




### Note

On deleting a license file, the devices in **Out of Service (OOS)** status moves to **Unmanaged** status. When you add the license again, the devices move back to the OOS status.

5. Click **Yes** to confirm the deletion or click **No** to cancel the action.

## Managing Licenses For OOS Devices

Action	Description
Adding a license file	<p>There is no change in the license count, as OOS devices do not consume the license.</p> <p>The devices in <b>Managed</b> status are given priority while adding the license file. The license consumed by them are displayed on the <b>License Summary</b> page.</p>

Action	Description
Removing a license file	<p>Changes the device status from <b>OOS</b> to <b>Unmanaged</b>.</p> <p> On re-adding the license, the devices move back to the OOS status.</p> <p><b>Note</b></p>
License expiry	The OOS devices move to <b>Unmanaged</b> status on priority.
License summary page	The OOS devices do not consume license, hence they are not displayed on the summary page.
Registration	Cisco IoT FND accepts registration or tunnel provisioning request from OOS devices, but consumes license.
Tunnel Provisioning	
Periodic or on-demand Metric Refresh	If there is a periodic or on-demand metric refresh request from OOS devices, then the request is dropped.
SNMP Trap Processing	The SNMP trap request is not processed for OOS devices. The user is notified with DEBUG and INFO level message on FND server.log.
Deleting OOS devices	<p>You can delete the OOS devices directly from the Device Info page, but this action does not change the license count.</p> <p><b>DEVICES &gt; Field Devices &gt; Browse Devices &gt; Devices &gt; More Actions &gt; Remove Devices.</b></p>