

# Cisco Smart Licensing Guide

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# Cisco Licensing Guide

## Introduction

### [Understanding Cisco licensing](#)

We offer licensing options to give you a choice in how you purchase, consume, and deploy Cisco software. Many customers today prefer Cisco Smart Licensing, a cloud-based approach to activate and manage licenses across your organization. Use this guide to better understand the licensing models available to you.

### [Learn about our licensing models](#)

### [Get started with Smart Licensing](#)

## 1. Licensing models

### [About our licensing models](#)

Cisco offers two primary licensing models: perpetual and subscription.

- **Perpetual license:** Software with the right to use for an indefinite period of time. The license is typically locked to the device and additional annual fees are required to maintain support. Customers buy a new license when they buy a new device.
- **Subscription license:** Software with the right to use for the length of the subscription term. Subscription models generally provide faster access to our latest features and innovations and more predictable cost structures. Additionally, support services are included with your subscription.

### **How you can purchase**

- **Transactional:** Both perpetual and subscription licenses can be purchased in ad hoc transactions. Each subscription transaction maintains its own term length.
- **Enterprise agreement (EA):** Purchasing through the [Cisco Enterprise Agreement](#) provides customers economies of scale and license management simplicity. Cisco EAs provide financial predictability, access to incentives, and subscription cotermination.

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## About our standard tiers, terms, and usage meters

We are standardizing our software licensing model as far as offers, terms, and metering across product portfolios, making it easier for customers to understand, purchase, and manage their Cisco licenses.

### License tiers

A license tier includes a group of features that make up a unique offer. More incremental capability is included with each tier, and higher tiers include all of the functionality in the lower tiers. The majority of Cisco software can be purchased under the following tiers:

1. Essentials
2. Advantage
3. Premier

### Subscription terms

Cisco subscriptions are available in monthly terms or in one-, three-, five-, or seven-year terms, based on the offer.

### Measuring software usage

Cisco has three standard usage meters for measuring license consumption: per user, per device, and per capacity.

- **User:** Priced per user with access to the software
- **Device:** Priced per device with access to the software
- **Capacity:** Priced on the potential amount of software value consumed

Each category aligns with specific meters and definitions.

- **User:** Unique User, Knowledge Worker, Active User, Named Agent, Named User, Covered User
- **Device:** Device, Workload, Appliance
- **Capacity:** Bandwidth, Concurrent Agent, Concurrent Connections, Concurrent Active Endpoints, Log Volume, Management Units, Circuit, Concurrent Meetings, Session, Transaction, Pack, Query Volume Rate, Throughput, Instance, Ports, Route Prefix, Daily Submission, Flows

[Learn more](#) about our software and cloud services under our End User License Agreement (EULA) and product-specific terms.

## 2. Smart Licensing vs. traditional

There are two main methods to deploy and manage your licenses.

- **Classic Product Activation Key (PAK) licensing:** Requires customers to configure devices individually using a license key and does not provide customers with visibility into licenses they own in aggregate. Typically, Cisco PAK licenses are acquired at the point of sale and activated through one of our licensing management tools. PAK licensing is steadily giving way to cloud-based Smart Licensing.
- **Cisco Smart Licensing:** Provides customers with access to a pool of licenses they can use across their organization and through online portals. Smart Licensing gives customers visibility into what they have purchased and what they are using.

**Table 1.** Comparing traditional and Smart Licenses

Smart Licensing	PAK Licensing
<b>Complete view</b> A single interface with centralized view of your software assets and device usage simplifies management.	<b>Limited view</b> Viewing and managing Cisco inventory is more challenging because they require multiple portals and tools.
<b>Virtual registration</b> No PAKs are required and you can easily unlock and activate devices yourself.	<b>Manual registration</b> Every device must be registered and can only be unlocked with a license key.
<b>Company-based licensing</b> Pooled licenses are flexible and can be used with different devices. They can also be consumed beyond original purchase and reconciled later.	<b>Device-specific licensing</b> Node locking limits each license to only one specific device.

### Here's how Smart Licensing works

With Smart Licensing, a pool of licenses is associated to a [Cisco Smart Account](#). Like banking, new licenses are automatically deposited into your Smart Account, increasing your account balance of licenses (also known as entitlements). As licenses expire or are terminated, your inventory balance decreases.

### Smart Licensing offers many advantages

Smart Licensing simplifies the way you purchase, deploy, organize, and optimize Cisco software licenses.

- **Easy activation:** Smart Licensing establishes a pool of software licenses that can be used across your entire company—no more Product Activation Keys.
- **Unified management:** Cisco provides a complete view into all of your Cisco products and services in an easy-to-use portal, so you always know what you have and what you are using.
- **License flexibility:** Your software is not node-locked to your hardware, so you can easily use and move licenses as needed.

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## Convert your traditional licenses to Smart Licensing

Smart Account administrators can convert traditional licenses to Smart Licensing themselves with Cisco Smart Software Manager. It's also possible to set up automatic device-led conversion for any new devices that are added to a Smart Account. You can also convert licenses and PAKs in bulk. The best practice is to assign traditional/classic licenses to Smart Licensing at the time of purchase via commerce tools such as Cisco Commerce Workspace.

Learn more about converting licenses with these on-demand resources

- [Converting Classic Licenses to Smart Licenses Guide](#)
- [Convert Classic PAK Licenses to Smart Licensing Video](#)
- [Assigning a Classic PAK-Based License to a Smart Account Video](#)
- [Classic Licensing Management with Smart Accounts Video](#)
- [Assigning Smart Account to a New Purchase Video](#)

## Find out which product families use Smart Licensing

[Download a current list](#) of Smart Licensing enabled products and related product activation documentation.

## 3. Get started

### You need to set up a Smart Account to use Smart Licensing

The first step to using Smart Licensing is to set up your company's Smart Account. It's the centralized location where you can view users, register, products and manage your Smart Licenses.

[Watch Smart Account explainer video](#)

[Request access](#) to an existing Smart Account

[Create a new Smart Account](#)

### The benefits of using Smart Licensing via your Smart Account are clear

**Real-time visibility.** Get a current view and immediate insights about your software licenses, entitlements, and users across the organization.

**Centralized management.** Enjoy a single location for all your Cisco software assets (including PAK licenses and Enterprise Agreements) and the ability to freely move licenses around your network.

**Telemetry.** Download reports on purchased, in-use, and available software to improve software utilization, efficiency, and budget planning.

**Better organization.** Have the flexibility to organize licenses by department, product, geography, or other designation.

**Speed and ease.** Smart Accounts are simple to use and take less than five minutes to create.

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## Further organize your licenses with customized Virtual Accounts

These are subaccounts you customize within your Smart Account to further organize and optimize Cisco licenses. Virtual Accounts can be based on department, geography, or other definitions that you determine.

[Learn about Smart Account best practices](#)

## Maintain control of your Smart Account by assigning user roles

**Smart Account approvers** can edit Smart Account properties, view all users, accept agreements, and view event logs. Approvers cannot manage licenses.

**Smart Account administrators** can edit Smart Account properties, add and edit users and Virtual Accounts, accept agreements, view event logs, and manage licenses for the entire Smart Account.

**Smart Account users** can access all Virtual Accounts and can perform licensing activities but cannot create new Virtual Accounts or manage users.

**Virtual Account administrators** can add and edit users to assigned Virtual Accounts, view event logs for assigned Virtual Accounts, view account agreements, and manage licenses for the assigned Virtual Accounts.

**Virtual Account users** can manage licensing for Virtual Accounts they are assigned to, but they cannot add new users.

## For smaller businesses, we offer Limited Use Smart Accounts

If your business doesn't need the full functionality of a Smart Account, we offer a scaled-back version—the Limited Use Smart Account. It's made for small to medium-sized businesses (SMBs) that do not have a company domain email ID and use a public email domain.

[Read the Limited Use Smart Account quick reference guide](#)

## Self-manage your licenses with Cisco Smart Software Manager (CSSM).

After creating a Smart Account, you can begin self-managing license deployments throughout your company using the cloud-based CSSM interface. The CSSM:

- Maintains real-time status of license usage once products are registered and activated.
- Allows grouping of licenses in Virtual Accounts (license asset pools) for easier management.
- Keeps administrators informed with expiring-, expired-, and insufficient-license alerts, event logs, and summary emails.

[See CSSM explainer video](#)

[Access the CSSM](#)

## 4. Deployment options

You have three deployment choices with Smart Licensing. Use one across your organization or mix and match as you like.

### 1. Direct licensing management and reporting

This cloud-based deployment method is our simplest. If your Cisco products are connected to tools.cisco.com via the Internet or HTTP proxy server, those devices will automatically report usage information. Direct deployment works out of the box with no additional configuration required.

### 2. On-premises license management and reporting

This deployment method is best when security policies require devices to be isolated from the Internet. Device communication is contained within the local network. The on-premises server uses a synchronization process to exchange license information with the Cisco Smart Software Manager (CSSM). Transfers can be automatic and network based or offline and manual. This method simplifies larger Cisco deployments (of roughly 30 or more licenses). [Read the data sheet to learn more.](#)

### 3. Disconnected (license reservation) license usage

This is our highest level of security for organizations that need a full air-gapped environment (and on-premises licensing isn't an option). Access through license reservation is fully offline and requires no ongoing communication or additional infrastructure. All licenses are manually checked in and out by copying and pasting information between products and Cisco.com. Disconnected licensing works well for remote deployments.

**Table 2.** Compare the deployment options

	Direct	On-premises	Offline
<b>Summary</b>	Manage all of your license usage with the Cisco Smart Software Manager (SSM) at Cisco.com.	Deploy the Cisco SSM On-Prem license server using a free, machine-based download. This replicates the cloud-based user experience of our direct-connect method, but it keeps all communication on your premises. Once a month, the SSM On-Prem server and SSM synchronize databases via network-based transfer or offline manual transfer.	Deliver licenses to Cisco devices with manual reservation codes, similar to product activation keys (PAKs). Because it's offline, any changes to license usage must be processed manually. This option is not recommended and therefore disabled by default on all Smart Accounts.
<b>Applications</b>	This is our most widely used type of deployment. It requires connectivity between your Cisco devices and Cisco.com via the Internet. Direct deployment works best for most organizations.	This method balances the simplicity of automated, cloud-based deployment with the security of local protected networks. Mediated deployment is ideal for financial institutions, service providers, utilities, and government organizations.	This deployment method is for high security environments. It's equivalent to node locking, but with tracking ability for Smart Licensing.



	Direct	On-premises	Offline
<b>Advantages</b>	This is our simplest deployment model. It requires zero setup of any Cisco infrastructure components.	Mediated deployment works for all products and provides the same experience as direct cloud access, but with higher security.	This deployment method is the most secure. It requires no additional infrastructure or ongoing communication.
<b>Disadvantages</b>	Devices are connected over the Internet, either directly or through HTTPS proxy servers, which may not comply with some highly regulated industries or businesses with strict data security requirements.	There are costs involved with installing and maintaining the software application virtual machine, as well as the cost of data exchanges when manual synchronization is used.	Disconnected deployment is limited to a subset of Cisco products. All license changes must be processed manually, including RMAs.

### What is evaluation mode?

Cisco Smart Licensing-enabled products support a built-in evaluation period from 60 to 90 days. This allows you to try licenses before connecting to Smart Licensing directly. It's also a bridge between the time a product is first installed and when it's licensed.

Evaluation modes don't allow use of export-controlled functionality due to U.S. export law. Otherwise, most Cisco products provide full functionality during the evaluation period. For more details on the actions each product takes, including when evaluation periods expire, please review the [product documentation summary](#).

Customers are notified by their Cisco products when they begin using evaluation licenses. Since there's no connection to software.cisco.com for unregistered devices, there are no notifications or alarms on CSSM. However, the Cisco product will display the appropriate information on its user interface.

Products that are in an evaluation state send a syslog (%SMART\_LIC-4-EVAL\_WILL\_EXPIRE\_WARNING) with the following frequency:

- 60 days before expiration
- 30 days before expiration
- Weekly in the last 30 days
- Daily in the last week
- Hourly in the last day

Products that are in an evaluation-expired state send a syslog (%SMART\_LIC-3-EVAL\_EXPIRED\_WARNING) weekly until the issue resolved.

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## What is the Smart License Using Policy?

It's an evolved version of Smart Licensing. Starting with IOS-XE 17.3.2/17.4.1, all Cisco products running these versions of software will only support Smart Licensing Using Policy. PAKs and Specific License Reservation (SLR) keys will persist through upgrades and remain intact unless removed.

The Smart Licensing Using Policy simplifies day-zero operations and on-going maintenance for our customers. The product will not boot in evaluation mode, per-product software registration is not required, nor is ongoing communication every 30 days per product with your cloud-hosted smart account on Cisco Smart Software Manager. Without having your products connect back to Cisco, you can achieve software license compliance via reporting activities which can be achieved by:

- Including your smart account and virtual account (optional) to all new purchases, we report your purchased software to your smart account as 'in-use'
- Using Cisco DNA Center's SLP-enabled on-prem controller, release 2.2.1 (February 2021)
- Upgrading your Smart Software Manager (SSM) SLP-enabled on-prem <insert release #> (March 2021 release)
- Using our new reporting tool, Cisco Smart Licensing Utility (CSLU) lite-windows 10 application
- Utilizing our on-product REST APIs/CLIs with your own tools or third-party systems
- Direct reporting to your smart account on Cisco Smart Software Manager

## 5. License usage compliance

As Cisco products are activated and configured, they call home to their Smart Account and report usage in various ways. This communication indicates the licenses that are needed and with traditional Smart Licensing also returns the current availability details. For traditional Smart Licensing one of two of the following responses are received by the device:

- **"Authorized"** means the license pool is sufficient to support the current usage across all devices in the pool.
- **"Out of compliance"** means the license pool is insufficient to support the current license usage across all devices in the pool. In most cases, the product will continue to function normally, but it will begin to issue notices. After 90 days, product functionality may be limited until the license shortage is resolved. For the new Smart Licensing using Policy feature, the following applies:
  - Usage data that is stored on the device when it is booted and updated for all usage systematically. This usage data is similarly sent to Cisco.
  - After sending, the device will show a status field that it has been reported. If connected, it will automatically receive an ACK acknowledgement in the form of an Report ACK message and the device will indicate that it has reported.
  - Once the reported data is made available at Cisco it will similarly update the license pool data.

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- After sending, the device will show a status field that it has reported. If connected it automatically will receive an ACK acknowledgement in the form of an Report ACK message and the device will indicate that it has reported.
- Once the reported data is made available at Cisco it will similarly update the license pool data.

Smart Licensing isn't a strict system in the way that traditional node-lock technologies are. Instead, Smart Licensing is highly flexible and doesn't lock licenses to individual devices. Smart Licensing provides a real-time monitoring and accounting of software use and light enforcement capabilities for overuse of licenses, subscriptions, and term expirations.

- License pools are a reflection of how many licenses are available at a given moment. For example, if a subscription for five new licenses begins, five additional licenses are added to the pool. If a subscription of five licenses expires or is canceled, five licenses are removed from the pool. Smart Accounts provide near real-time data on how many entitlements your business has.
- Products stay in an "authorized" state as long as the number of entitlements in the pool is greater than or equal to the number of licenses being consumed. Products using SL Using Policy will only indicate as to whether the device has reported or not reported its usage.
- When the number of licenses in the pool is less than the number of licenses being consumed (because additional licenses were consumed by new deployments or because the number of licenses decreased due to expiration of subscriptions or terms), the pool is moved to an "out of compliance" state for traditional Smart Licensing. For SL using Policy, this is only tracked at the CSSM Cloud level in the Smart Account or the CSSM On-Prem local license server.
- Out of compliance or non-reported devices may receive a syslog(s) at various frequencies. These are described in the product manuals.
- For traditional SL, all devices in the pool that are using the uncompliant license are notified. Enforcement actions are device specific but tend to be on the light end of the spectrum, including nag-ware and limited product updates.
- Smart Account users and administrators are also notified when more licenses are being consumed than have been purchased. CSSM displays a "major" alarm on its primary alarms interface as well as within the Virtual Account itself. The alarm includes information on needed licenses and quantity to resolve the shortage. This information is also available in the offline license report via the report tab within CSSM. Additionally, users and administrators can elect to receive a daily status email.

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## 6. Manage your entitlements

My Cisco Entitlements uses your Smart Account to provide a consolidated view of all your assets and entitlements, including services, subscriptions, licenses, and devices.

[Demo My Cisco Entitlements](#)

### Here's why software administrators prefer MCE

- **Real-time insights:** See one simple view of products and services, including activation and utilization metrics.
- **Cost optimization:** Better plan and control the usage of your products and services.
- **Enhanced business continuity:** Ensure compliance by proactively identifying at-risk products and services.
- **Secure and consolidated user access:** Streamline and strengthen the way you manage Cisco licenses.

### MCE gives you greater control of your licensing

- **Search** assets and entitlements with global search or by services and subscriptions, licenses, or devices.
- **Filter** assets and entitlements based on available fields.
- **Sort** your data in ascending or descending values.
- **Organize** your assets and entitlements further by creating Virtual Accounts.
- **Export** reports on assets and entitlements into multiple formats. Export up to 100,000 lines of data. That number is expected to increase in future releases.
- **Manage** columns to customize the view of your assets and entitlements.
- **Launch** the support case manager directly to open a technical support case.
- **Upgrade** assets and entitlements simply via software version upgrade requests.

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## 7. Resources for Cisco Partners

Smart Licensing makes it easier for your customers to manage their Cisco licenses and rightsize their spend.

Cisco partners get Partner Holding Accounts, a unique type of Smart Account that helps plan and manage Cisco licenses before they're deployed to customers.

### What is a Partner Holding Account?

A Partner Holding Account is a way for Cisco partners to temporarily store orders before they're deposited into customers' Smart Accounts. Partners don't always know the end customer or their Smart Accounts when ordering. In this case, orders can be temporarily assigned to a Partner Holding Account. Once customers are identified, orders can be transferred to their Smart Accounts.

The main difference between Smart Accounts and Partner Holding Accounts is that licenses can be consumed only in Smart Accounts, not in Partner Holding Accounts. Assigning a Partner Holding Account on an order provides companywide access to the order.

Learn more about Partner Holding Accounts.

- [Partner Holding Accounts Overview Video](#)
- [Partner Holding Account Creation Video](#)

### Thank you for learning more about Cisco licensing

If you still have questions, please contact your Cisco partner or account manager or click the resources below.

## 8. Additional resources

- [Cisco Licensing Webpage](#)
- [Cisco Software Central](#)
- [Cisco Licensing Support](#)
- [Orderable Smart Licensing PIDs Community Page](#)
- [Smart Licensing Product Roadmap Community Page](#)
- [Smart Software Manager On-Prem Overview](#)
- [Smart Software Manager On-Prem Data Sheet](#)
- [Smart Licensing and Smart Accounts FAQ for Partners, Distributors, and Customers](#)
- [Smart Account and Smart Licensing APIs](#)
- Smart Licensing and Smart Account training modules:
  - Customers: [Smart Licensing Training Module](#)
  - Partners and distributors: [Smart Licensing Partner Training Module](#)
  - Additional training: [Software Experience Community Page](#)

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- [Smart Licensing and Smart Account live training](#)
  - [Open a Case with Support Case Manager \(SCM\)](#)
    - [Learn How](#)

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