

## Software Activation Licensing for the Cisco Catalyst 4500 Supervisor 7-E, 7L-E and Cisco Catalyst 4500-X Series

Software activation licensing was introduced to the Cisco<sup>®</sup> Catalyst<sup>®</sup> 4500E platform with the Cisco Catalyst 4500 Supervisor Engine 7-E and it is supported now with Catalyst 4500 Supervisor Engine 7L-E and the Catalyst 4500-X Series as well. Today both Supervisor Engine 7-E and 7L-E as well as the Catalyst 4500-X Series are shipped with a universal image containing all feature sets: LAN Base, IP Base, and Enterprise Services. The level of functionality is determined by the license applied.

Software activation licensing enables customers to:

- Speed deployment and roll-out new Cisco software activation feature sets across customers' global networks.
- Centrally and more accurately manage and track software and license compliance.
- Easily conduct software compliance audits to meet regulations without affecting network operations.

Operational simplicity:

- Simplified upgrades and license transfers save time and improve productivity; you can add new capabilities simply by using a license file.
- You can easily track software assets, licenses, and feature set status.
- A single software image improves service delivery.

Ease of ordering:

- "Try and buy" lets you use a temporary license to try and evaluate new Cisco IOS<sup>®</sup> Software functionality before purchase.
- Pay-as-you-grow software key enables new features incrementally without service calls.

For more information about Cisco software licensing, visit <http://www.cisco.com/go/sa>.

### Licensing and Packaging

**Q.** What is Cisco software activation?

**A.** Cisco software activation is the mechanism used to activate software features and components on the next-generation supervisor engines for the Cisco Catalyst 4500E, the Cisco Catalyst 4500 Supervisor Engine 7-E and 7L-E, as well as on the Cisco Catalyst 4500-X Series switches. Cisco software activation is used to generate a unique license key for a feature set or technology package on a specific device, and activate that functionality on the system.

Cisco software activation has previously been available on several products from Cisco. Additional information can be found at <http://www.cisco.com/go/sa>.

- Q.** How has feature packaging changed with the next-generation Supervisor Engine 7-E and 7L-E?
- A.** No changes. There will continue to be three packages: LAN Base, IP Base, and Enterprise Services. Cisco provides LAN Base software only when purchasing SUP7E or SUP7L-E bundle with a single Supervisor, in all other cases IP Base license is provided at no additional cost.

With the new Supervisor Engine 7-E and 7L-E all features are included in a single universal image under which LAN Base feature set is enabled by default i.e. LAN Base does not require any License whereas a License is required to activate IP Base or the Enterprise Services feature set.

- Q.** Is Cisco software activation required for the existing Supervisor Engines, such as Supervisor Engine 6-E and 6L-E?
- A.** No. All legacy supervisors will remain unchanged and will not adopt the licensing, packaging, and universal image concept outlined for the Supervisor Engine 7-E and 7L-E.
- Q.** What are the different types of licenses available for Supervisor Engine 7-E, 7L-E and the Cisco Catalyst 4500-X Series?
- A.** Supervisor Engine 7-E, 7L-E and the Cisco Catalyst 4500-X Series support the following types of licenses:
- **Permanent:** A permanent license is a license that never expires. After a permanent license is installed on a system, it is good for that particular feature set for the life of the system, even across versions. For example, after an Enterprise license is installed on a system, the subsequent features for that license will be activated even if the switch is upgraded to a new release. A permanent license is the most common license type used when a feature set is purchased for a system.
  - **Temporary:** A temporary license is a license good for a limited amount of time. The Supervisor Engine 7-E, 7L-E and the Cisco Catalyst 4500-X Series include a full set of 60-day temporary licenses for the IP Base and Enterprise Service feature packages. These can be activated and deactivated at any time to evaluate a feature set before making the decision to purchase and upgrade to a permanent license. They also provide a mechanism that gives the user some flexibility when they actually need to upgrade to a permanent license. Only the time a temporary license is active is counted against the available time on the license. After a temporary license expires, it cannot be extended. However, in certain cases the Cisco Technical Assistance Center (TAC) can issue new temporary licenses.
- Q.** Which licenses are available for Supervisor Engine 7-E, 7L-E or a Cisco Catalyst 4500-X Series system?
- A.** See Table 1 for package licenses. These will be delivered with new Supervisors or available as an upgrade through Cisco software activation. The Cisco Catalyst 4500-X Series only supports IP Base (default) and Enterprise Services (as an upgrade).

**Table 1.** Package licenses

Package Name	Prerequisites	License Types
LAN Base	None	Permanent
IP Base	IP Base	Permanent, temporary
Enterprise Services	IP Base	Permanent, temporary

- Q.** Where can I learn more about Cisco software activation?
- A.** <http://www.cisco.com/go/sa>.

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## Universal Image

- Q.** What is a universal image?
- A.** The universal image contains all feature packages: LAN Base, IP Base, and Enterprise Services feature sets. The level of functionality available is determined by the license applied to the device. A software activation license (SAL) enables specific functionality. For example, an IP Base package license enables IP Base functionality in the Cisco IOS Software universal image.

## Product Authorization Key

- Q.** What is a product authorization key?
- A.** A product authorization key (PAK) is an 11-digit alphanumeric key created by Cisco manufacturing which defines the feature set associated with the PAK. A PAK is not tied to a specific device until the license is created.
- Q.** How is a PAK delivered?
- A.** Delivery of PAKs can be paper based or electronic. Paper-based PAKs begin with L- for feature package licenses. Paper-based PAKs are sent on a piece of paper by postal mail to customers.
- Q.** What is an e-delivery PAK?
- A.** E-delivery is Cisco's process for electronic fulfillment and subsequent asset management of customer orders for software license entitlement documentation. With e-delivery, users will be able to manage and download their PAKs. After a customer has placed an order for an e-delivery product, they receive an email containing a link to the e-delivery application. Customers access the application using their Cisco.com user profile, user ID and password, and download a claim certificate in pdf format. The claim certificate contains the PAK number.
- Q.** Where can I find more information about e-delivery?
- A.** For more details, visit <https://edelivery.cisco.com/esd/faq.do?view>.
- Q.** Do PAKs expire?
- A.** No. PAKs do not expire.
- Q.** Can one PAK be used for activating multiple license keys?
- A.** Yes, a PAK can be purchased that generates any specified number of licenses. The total number of licenses the PAK can generate is specified during the ordering process. Regardless of the number of upgrades purchased, the customer can receive one PAK. Such PAKs are called multi-use PAKs or bulk PAKs.
- Q.** What types of multi-use PAKs are supported on the Supervisor Engine 7-E, 7L-E and the Cisco Catalyst 4500-X Series?
- A.** Multi-use PAKs for paper and e-delivery PAKs are supported.

## Licenses

- Q.** Do I need to install licenses for software purchased with a Supervisor Engine 7-E, 7L-E or a Cisco Catalyst 4500-X Series system?
- A.** Cisco installs licenses where possible. If a spare Supervisor7-E is purchased, it will ship with the default license enabled (LAN Base) and a PAK for IP Base.

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- Q.** When will a customer need to install licenses on a Supervisor Engine 7-E, 7L-E or a Cisco Catalyst 4500-X Series system?
- A.** Upgrade of Cisco IOS Software functionality on an already purchased switch system will require the customer to purchase and activate license(s). For example, adding IP Base functionality to an already deployed LAN Base Supervisor Engine 7-E will require the customer to install an IP Base license on the device.
- Q.** What is required to obtain a license?
- A.** A PAK, the product ID (PID), and the serial number of the chassis are required for key generation functions.
- Q.** What are the PID and serial number, and where can I find them?
- A.** The serial number is an 11-digit key that uniquely identifies a Cisco Catalyst 4500E or 4500-X chassis. Product ID identifies the product family to which the product belongs: for example, WS-C4510R+E. This information can be found using the “show license UDI” command. A label tray on the chassis provides barcode-scannable labels for PID and serial number as well.
- Q.** Where do customers go to obtain a software license key once they have a PAK?
- A.** They should go to the Software License Registration page on <https://tools.cisco.com/SWIFT/Licensing/PrivateRegistrationServlet>. If they are using Cisco License Manager, then this can be used to collect the license key(s).
- Q.** How is the time remaining on temporary licenses calculated?
- A.** Temporary licenses are usage based and are valid for 60 days. For example, if a customer uses the temporary license for 40 days and then shuts down the router, that customer will still have 20 days left on the temporary license.
- Q.** Do temporary licenses get removed automatically when a permanent license is installed? Or does the temporary license have to be removed before the permanent license can be activated and installed?
- A.** Temporary licenses will remain after the permanent license is installed and activated. If a permanent license is activated in the router, then the temporary license will automatically become inactive.
- Q.** Do I need to reboot my device if I move from temporary license to permanent license for a technology package or feature?
- A.** No, a reboot of the device is not required if the device moves from temporary to permanent license for a technology package or feature.
- Q.** How long does license key generation take?
- A.** When using the Software License Registration page on <http://www.cisco.com/go/license>, license key generation is instant.
- Q.** What is the format of the license key?
- A.** The license key is in the form of a file with a “.lic” extension. Adding this file to the appropriate Cisco Catalyst 4500E or Cisco Catalyst 4500-X will activate the purchased Cisco IOS Software feature set. The contents of the .lic file must not be altered in any way, as this will render it inoperable. If a customer wants to add notes to the license file (for example, PO numbers, user information, and so on), this can be done using the device command-line interface (CLI).

The license file can be installed using the Cisco IOS Software CLI or the Cisco License Manager. Instructions for using the CLI are included in the email.

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- Q.** How are licenses handled during the RMA of Supervisor Engine 7-E and 7L-E?
- A.** Cisco will ship replacement Supervisor units with LAN Base license. All licenses except LAN Base need to be transferred from the faulty device to the replacement device to get a functionally equivalent replacement device. A simple TFTP copy of the .lic file to the replacement Supervisor will be required.
- Q.** How are licenses transferred during the RMA process of a chassis?
- A.** The customer can use Cisco License Manager or can go to Cisco licensing portal (<http://www.cisco.com/go/license>) to transfer licenses from a faulty device to a replacement device. When an in-service device fails, its software license can be transferred by using the “Register for an RMA License” function on the Cisco licensing portal. Five pieces of information must be gathered before initiating the license transfer: a valid service contract number (optional), the PID and serial number of the returned Cisco Catalyst 4500E or 4500-X chassis, and the PID and serial number of the replacement Cisco Catalyst 4500E or 4500-X chassis.
- Q.** What happens if I cannot transfer my licenses right away to the replacement device?
- A.** Each device comes with temporary licenses, which can be used to have the desired functionality on the device for 60 days.
- Q.** Is there MIB support for licensing?
- A.** Yes. CISCO-LICENSE-MGMT-MIB provides support for licensing information for permanent, subscription, temporary, and counted licenses.
- Q.** Where can I find more information about Cisco License Call Home?
- A.** Refer to [http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa\\_callhome\\_ps6441\\_TSD\\_Products\\_Configuration\\_Guide\\_Chapter.html](http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa_callhome_ps6441_TSD_Products_Configuration_Guide_Chapter.html).
- Q.** What is Cisco License Manager?
- A.** Cisco License Manager is a standalone application from Cisco that helps you rapidly deploy multiple Cisco software licenses across your networks. Cisco License Manager can discover network devices, view their license information, and acquire and deploy licenses from Cisco. The application provides a graphical user interface (GUI) that simplifies installation and helps enable you to automate license acquisition, as well as perform multiple licensing tasks from a central location. You can also use the Cisco License Manager application programming interface (API) to create your own programs for performing licensing tasks.
- Q.** How much does Cisco License Manager cost?
- A.** Cisco License Manager is free.
- Q.** Where can I find more information about Cisco License Manager?
- A.** To find more details, visit <http://www.cisco.com/go/clm>.

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## References

Cisco Software Activation Conceptual Overview:

[http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa\\_overview.html](http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa_overview.html).

Cisco Software Activation Tasks and Commands:

[http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa\\_commands.html](http://www.cisco.com/en/US/docs/ios/csa/configuration/guide/csa_commands.html).

Cisco License Manager Deployment: A Quick Start:

[http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/guide\\_clm\\_deployment.html](http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/guide_clm_deployment.html).

Cisco Software Activation: Simplifying Software Deployment and License Management:

[http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/whitepaper\\_cisco\\_sw\\_license.html](http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/whitepaper_cisco_sw_license.html).

Maintenance Provider Guidelines for Managing Software Activation:

[http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/white\\_paper\\_maintenance\\_activation.html](http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/white_paper_maintenance_activation.html).

Cisco Software Activation: Channel Partners Guidelines for Managing Software Activation:

[http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/white\\_paper\\_cisco\\_sw\\_activation.html](http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps9677/white_paper_cisco_sw_activation.html).




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