Cisco License Manager 2.2

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Cisco© License Manager automates Cisco IOS® Software activation and license management for a wide range of Cisco platforms running IOS as well as other operating systems.

Product Overview

Cisco License Manager is a secure client/server-based application to manage Cisco IOS Software activation and license management for a wide range of Cisco platforms running IOS as well as other operating systems. It automates the workflow associated with Cisco IOS Software activation through its intuitive, easy-to-use GUI and scales for large network deployments. It can support up to 30,000 devices. Cisco License Manager automatically discovers the network and builds an inventory of licensed features deployed in the network by securely communicating with network devices running Cisco IOS Software. Alternatively, Cisco License Manager can import the list of network devices in Extensible Markup Language (XML) format, or you can manually add them. The device list can also be imported directly from CiscoWorks.

Using Cisco License Manager, you can perform networkwide software activation in three simple steps:

1. You can add the Product Authorization Keys (PAKs) for the licensed software features you have purchased from Cisco in Cisco License Manager. Cisco License Manager automatically obtains SKUs for the features authorized by the PAKs by securely interacting with Cisco.com license portal.
2. Using the wizard-based GUI, Cisco License Manager guides you to securely obtain licenses for selected devices from the license server on the Cisco Website.
3. You can deploy the obtained licenses through an intuitive, wizard-based GUI to activate the software features. Cisco License Manager can obtain licenses even for predeployed or offline devices by simply adding those devices using their unique device identifier (UDI) instead of their IP address.

The advanced reporting capabilities in Cisco License Manager help you know exactly which software features you have purchased, how many licenses you have obtained, and which licenses are not yet deployed. It also aids in audit compliance through its licensing reports indicating proof of license. Cisco License Manager helps you save costs by identifying a list of licenses that are deployed on network devices but are not needed there.

Full-functionality Java and Perl Software Development Kits (SDKs) are available with Cisco License Manager. These SDKs integrate with your existing license- and asset-management products and protect your investment in these assets. Cisco License Manager accelerates deployment of licenses and helps enable you to rapidly roll out advanced services in your networks using the licensed features.

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Cisco License Manager assists in failure recovery by deploying licenses stored in its database or by retrieving and then deploying all the licenses for a device from the license server on the Cisco Website. Cisco License Manager provides the capability to back up its database and configuration files and restore them later.

Cisco License Manager resides at the customer premises and has access to the customer network; it needs Internet connectivity to the Cisco Website for many of its features. It also supports two-stage license deployment for isolated networks where customers can move Cisco License Manager to a network domain with Internet connectivity and obtain and save licenses to its database by securely communicating with the license server on the Cisco Website. Cisco License Manager can then be moved back to the original isolated network domain to deploy previously obtained licenses to network devices. Figure 1 illustrates how Cisco License Manager should be deployed in a typical scenario.

Figure 1. Cisco License Manager Typical Deployment Scenario

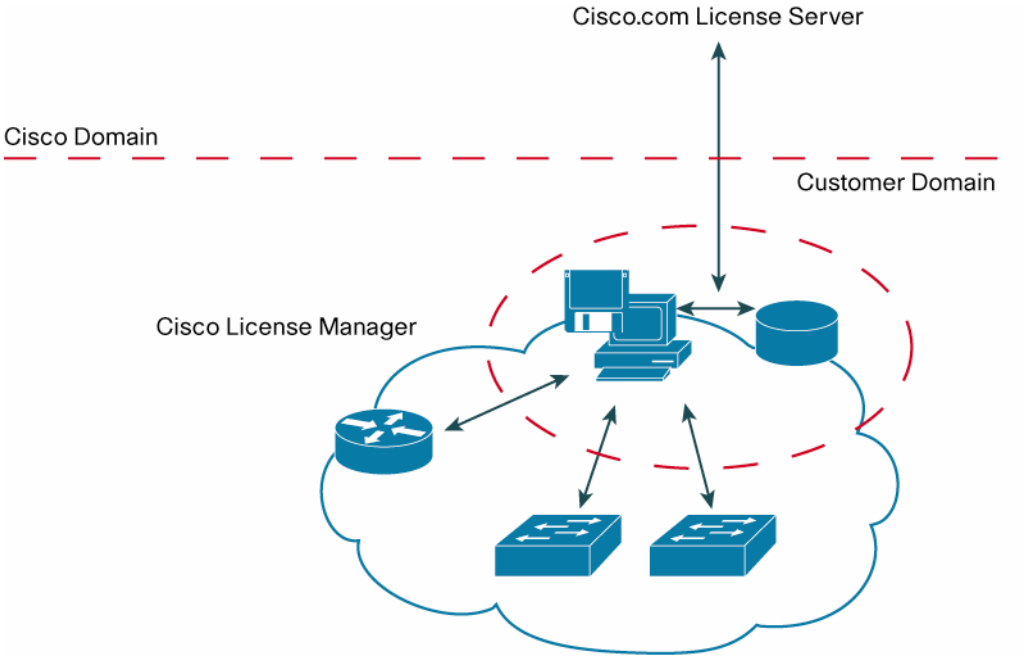

Figure 2 shows the most common Cisco IOS Software activation workflow with Cisco License Manager.

Figure 2. Software Activation Workflow with Cisco License Manager

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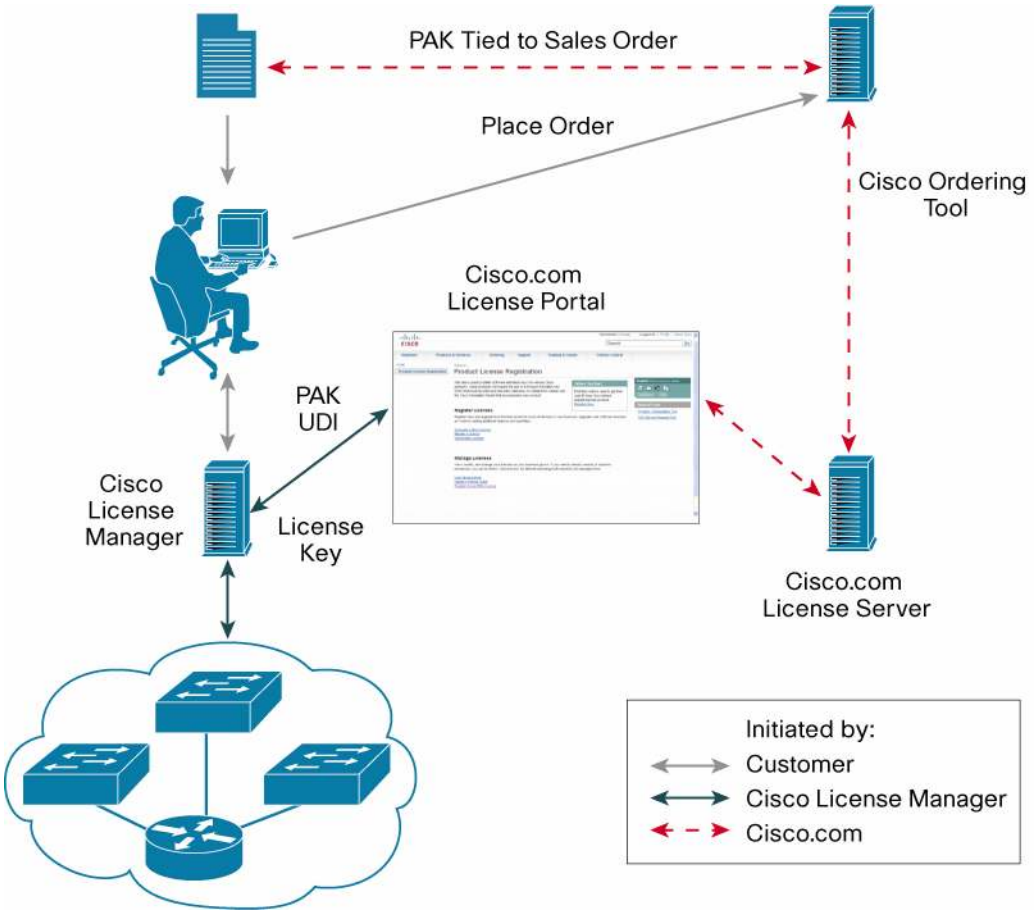

Key features for Cisco License Manager include:

- Intuitive and easy-to-use GUI
- Automated periodic discovery
- Enhanced Device and PAK Search capabilities and management
- Return Material Authorization (RMA) license transfer functionality
- An up-to-date inventory of deployed licensed features on the network, maintained through notifications and optional polling
- Licenses obtained through secure connectivity with the license server on the Cisco Website
- Rapid license deployment
- Two-stage license deployment to securely support isolated networks
- Simple license transfers from one device to another
- Agentless device communication through Secure Shell (SSH) Protocol or Telnet
- Improved detailed license reporting that helps with audit compliance
- Full-functionality Java and Perl SDKs
- Enhanced security with role-based access control and per-user access control lists (ACLs) for the managed network devices and PAKs
- Completely automated license management through a simple write-once, run-again rule-based policy interface

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- Faster failure recovery by deploying licenses from the database or retrieving all licenses for a given device from the license server on the Cisco Website
- Troubleshooting capabilities and X.733-based alerts

Key Features and Benefits

Cisco License Manager 2.2 helps users increase productivity, reduces the complexity of licensing, protects your investment, provides faster failure recovery and enhanced security, and assists in audit compliance, among other benefits.

Increased Productivity

Some Cisco IOS Software-based devices, such as Cisco Catalyst® 3750-E and 3560-E Series Switches, need license keys to activate software features on them. These license keys are locked to a device and can be obtained from the Cisco Product Registration portal on the Cisco Website by specifying the UDI of a device and the PAKs supplied by Cisco. The license keys can be deployed on the associated devices using the Cisco IOS Software command-line Interface (CLI).

This software activation workflow consists of multiple manual steps and may not scale well for networkwide deployments. You can automate this workflow and accelerate the license-deployment process using Cisco License Manager's intuitive GUI (Figure 3). It scales to large networks and can support up to 30,000 devices. Cisco License Manager can significantly reduce the time for large-scale license deployment with a deployment speed of 250 licenses per minute, and it enables you to rapidly roll out new services based on these licensed features.

Cisco License Manager provides a simple, rule-based policy language to completely automate software activation and license management, enabling write-once, run-again capabilities. You can create simple rule-based policies using common device attributes such as device model, device group, and IP address range and assign a PAK to this policy. You can then execute that predefined policy on an on-demand basis, and Cisco License Manager will automatically obtain and deploy appropriate licenses to the managed devices, matching against the rules in the policy. This will be very helpful in scenarios where new devices are provisioned on a periodic basis.

Figure 3. Policy-Based License Management Interface of Cisco License Manager

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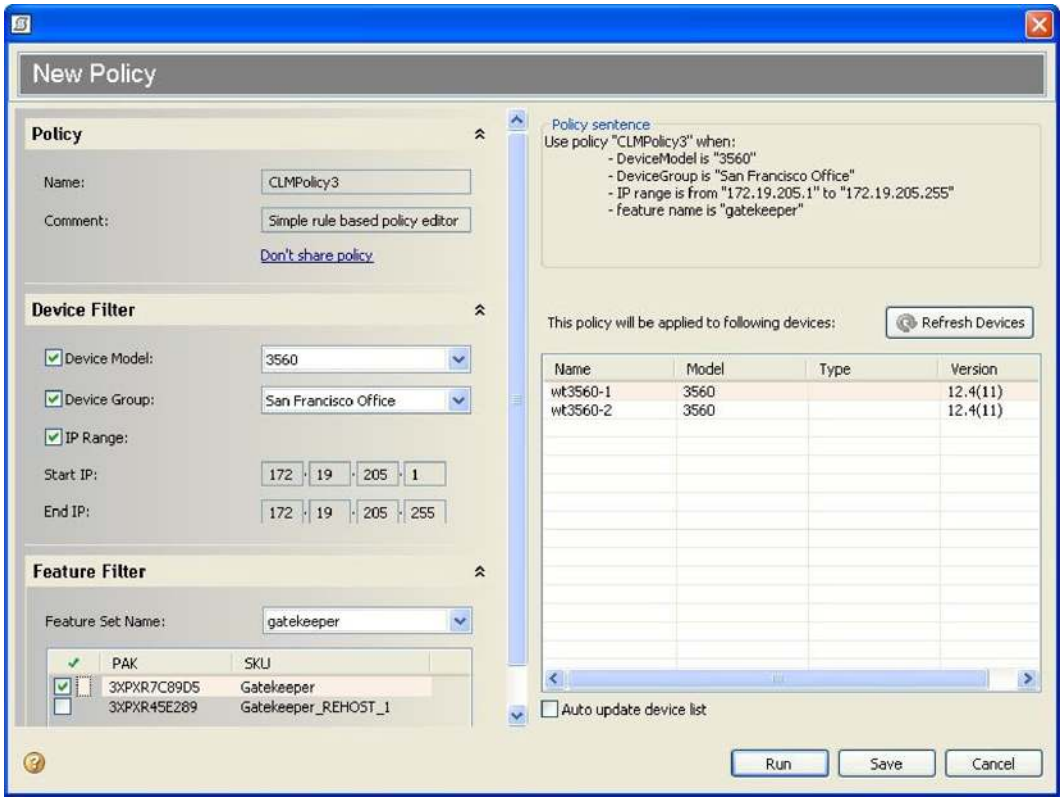

Cisco License Manager facilitates collaboration by allowing policies created by one user to be shared with other users.

Reduced Complexity

Cisco License Manager is a simple-to-install and easy-to-use application that automates the Cisco IOS Software activation process. It can automatically discover the complete network using customer-supplied parameters. Cisco License Manager securely communicates with the devices running Cisco IOS Software to build advanced inventory of all licensed features deployed in the network and provide detailed license reports. You simply need to add the PAKs received from Cisco for the software features you have purchased, and the Cisco License Manager wizard-based GUI guides you through the process of associating the features to network devices and vice versa and automatically obtains the licenses by securely interacting with backend systems on the Cisco Website (Figure 4). Please note that Cisco License Manager communicates to backend systems on the Cisco Website only when you initiate Download PAK Info, Obtain License, and Resend License operations. It does not send any customer network information to Cisco backend systems except the device UDI, which is required for obtaining licenses.

Figure 4. Cisco License Manager Wizard to Obtain a License from the Cisco Website

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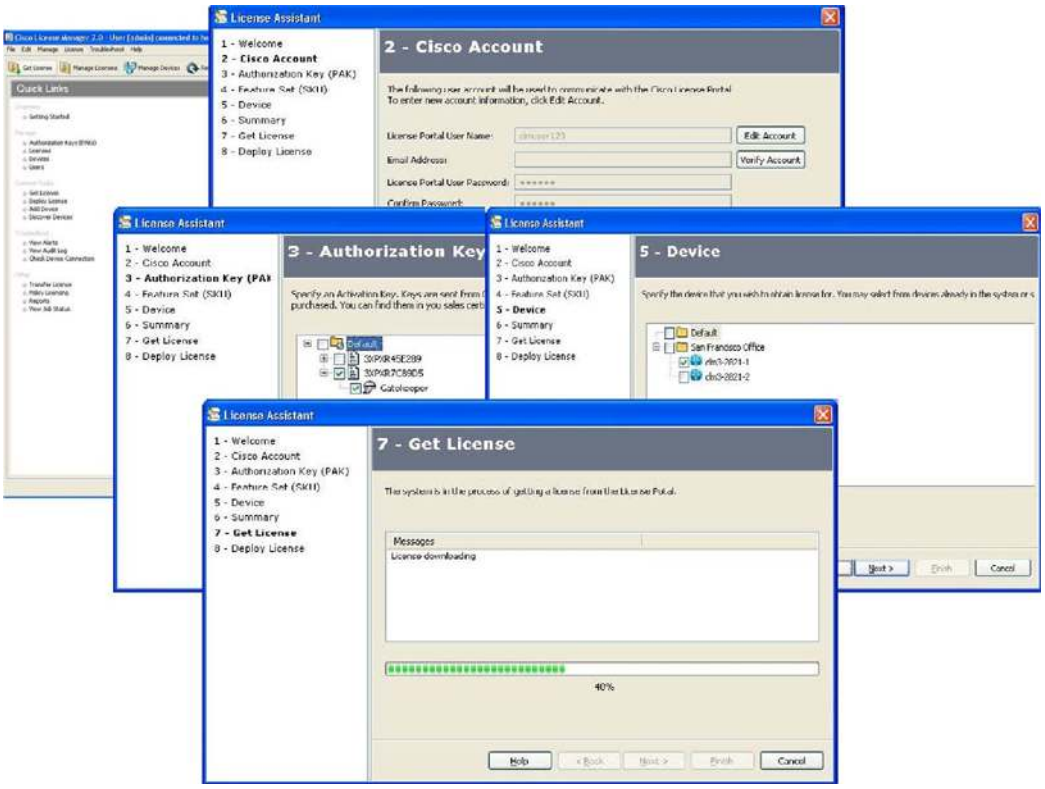

For isolated networks, the licenses obtained from the license server on the Cisco Website can be deployed later using a simple wizard-based GUI. You can always obtain and install licenses in a single step if Cisco License Manager has connectivity to both network devices and the Internet.

Cisco License Manager does not require any agent configuration on the devices before it can manage licenses on them. It can securely manage licenses on devices using SSH and CLI. In addition, Cisco License Manager can communicate with embedded license agents on devices using XML over HTTPS.

Using Cisco License Manager advanced reports, you can quickly find out how many features you have purchased, how many licenses you have, and how many licenses have not been deployed. Cisco License Manager compares the licensable features for a given device with the feature licenses already installed on that device and reports any feature licenses that are not needed and can be redeployed somewhere else, resulting in cost savings.

You may want to move premium licensed features from one device to another for reasons such as a change in network topology. Once you select the source and destination devices, Cisco License Manager simplifies this procedure by securely obtaining re-host permission from Cisco.com, revoking the license from the source device, and obtaining and installing the transferred license to the destination device as well as installing a temporary license for the feature being transferred to give you enough time to migrate all connections or traffic to the destination device (Figure 5).

Figure 5. Cisco License Manager Simplifies Transferring Licenses

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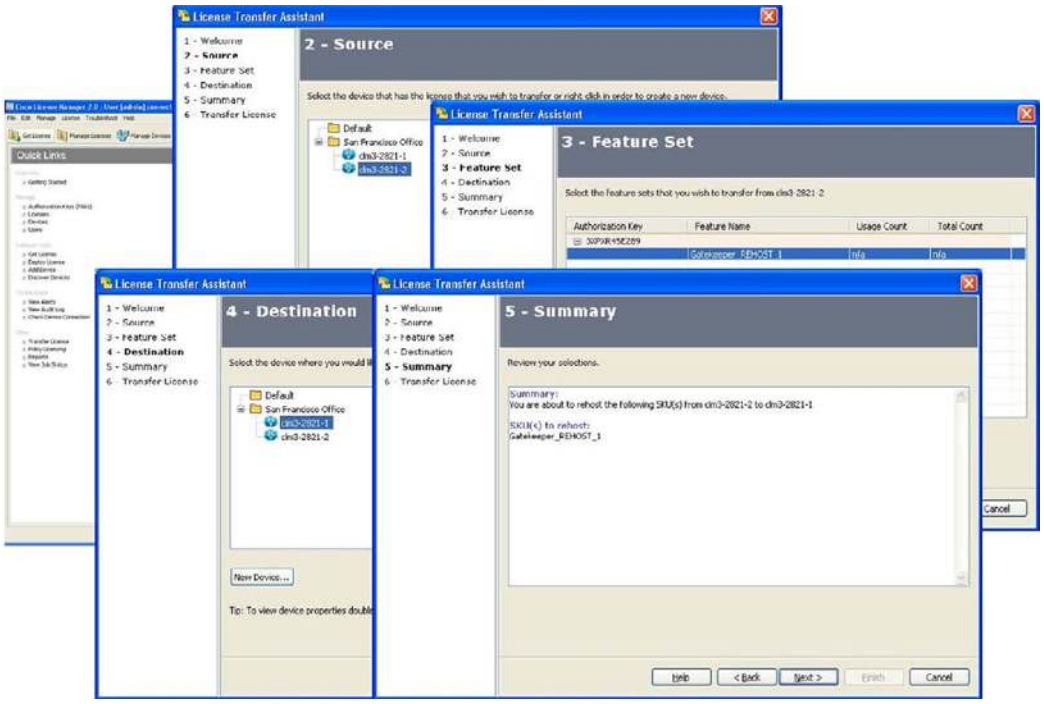

Investment Protection

Cisco License Manager supports Cisco IOS Software activation for all hardware platforms, and you do not need to train your operations staff for multiple applications. In addition to the wizard-based GUI, Cisco License Manager also has both Java and Perl SDKs that provide exactly the same functionality as is available through the GUI. This protects your investment in your existing license- and asset-management products, because those software products can easily hook up with Cisco License Manager through its Java or Perl SDK.

Cisco License Manager integrates and coexists with CiscoWorks LAN Management Solution (LMS) 3.1 and later, and with Cisco Configuration Professional.

Faster Failure Recovery

In the case where the license keys on the device are accidentally lost or corrupted due to storage failure, the network downtime can be prolonged because the services based on these licensed features cannot be enabled. You can significantly reduce this downtime by deploying licenses stored in the Cisco License Manager database using the intuitive GUI. If the device was not managed through Cisco License Manager before failure and the license keys were not backed up, you can quickly add that device to Cisco License Manager, retrieve all licenses for that device from the license server on the Cisco Website, and then deploy them automatically. The Cisco License Manager administrator can also back up and restore the database and configuration files.

Cisco License Manager provides detailed troubleshooting and diagnostic capabilities to identify the root cause of connectivity failure to devices and the Cisco.com license server. Cisco License Manager listens to events from the devices and presents these alerts using industry-standard X.733-based severities.

Enhanced Security and Virtualization

The Cisco License Manager user-security model supports role-based access control and provides the following five user profiles:

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- Administrator: Can access all functionality
- Inventory Manager: Can update inventory, device access information, and all functionality available to roles below it
- PAK Manager: Can view and manage PAKs and all functionality available to roles below it
- License Manager: Can obtain and deploy licenses and all functionality available to roles below it
- Reports Manager: Can only view and generate license reports

Cisco License Manager also provides an ability to limit access to managed devices and PAKs by using access control lists (ACLs) for each user. This feature enables customers to virtualize one Cisco License Manager installation into multiple customer views. This can be very useful for managed service providers who manage multiple customer networks simultaneously and allows them to have virtualized access to individual customer networks. Using managed device ACLs, service providers can allow their end customers to access the Cisco License Manager server and manage licenses or generate licensing reports only.

In addition, Cisco License Manager can be deployed in a VMWare virtual machine environment.

Aids Audit Compliance

Cisco License Manager reports help your business comply with various auditing regulations, such as the Sarbanes-Oxley Act, which requires that you have proof of licensing for all products that you have purchased. Cisco License Manager keeps its license inventory in sync with what is deployed on the network through notifications and optional periodic polling, and therefore the reports are always accurate.

In addition, in case of a Return Material Authorization (RMA), you may accidentally have a license discrepancy because you forgot to return the failed device, and now both the failed and the replacement device are using the licensed feature though you paid only for one, and therefore you fail the audit. Cisco License Manager supports Return Material Authorization (RMA) license transfer functionality and enables users to transfer licenses from a failed device that is being returned through the RMA process, to a new device and an RMA discrepancy report that interacts with the Cisco.com license server, to detect this discrepancy across your network. This will help your business comply with various auditing regulations, such as the Sarbanes-Oxley Act, which requires that you have proof of licensing for all products purchased.

Figure 6. Cisco License Manager Wizard to RMA License transfer functionality.

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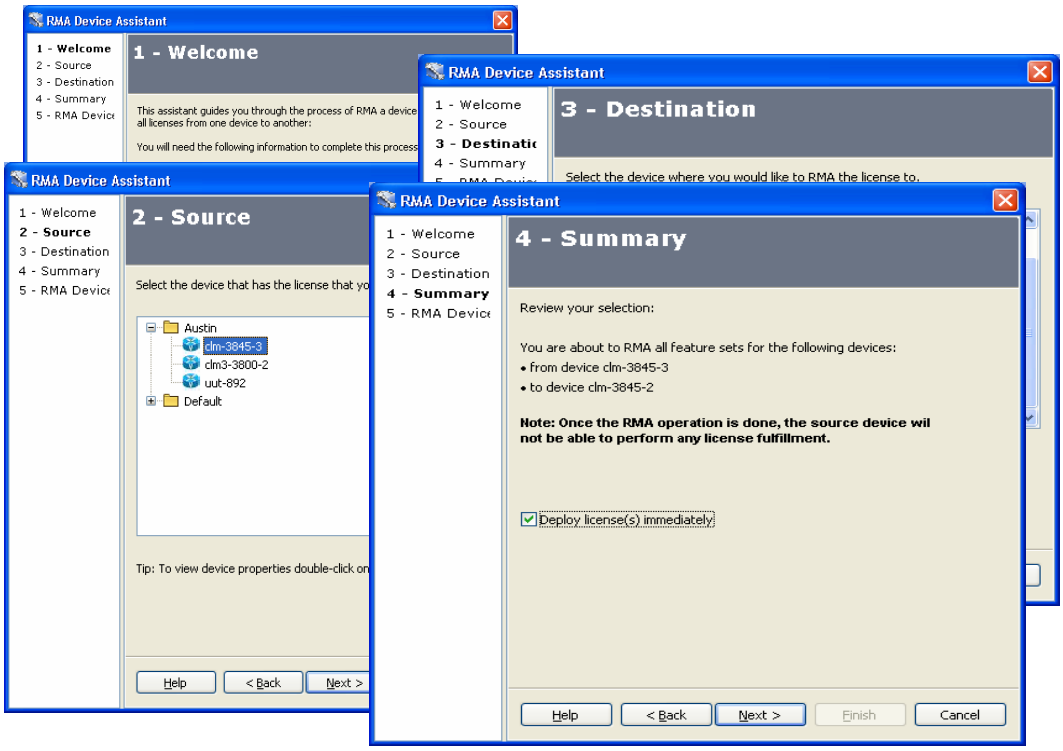

Product Architecture

Cisco License Manager is a Java-based client/server application. It uses open-standards-based protocols (SSH, Telnet, HTTP, HTTPS, and XML) to securely communicate to the license server on the Cisco Website as well as devices running Cisco IOS Software to manage Cisco IOS Software activation and licenses. It includes a high-performance embedded database to store information about users, PAKs, managed devices, and licenses; and it scales up to 30, 000 devices. Cisco License Manager provides an easy-to-use GUI as well as well documented Java and Perl SDKs for integration with existing license and asset-management software (Figure 6).

Figure 7. Cisco License Manager Architecture

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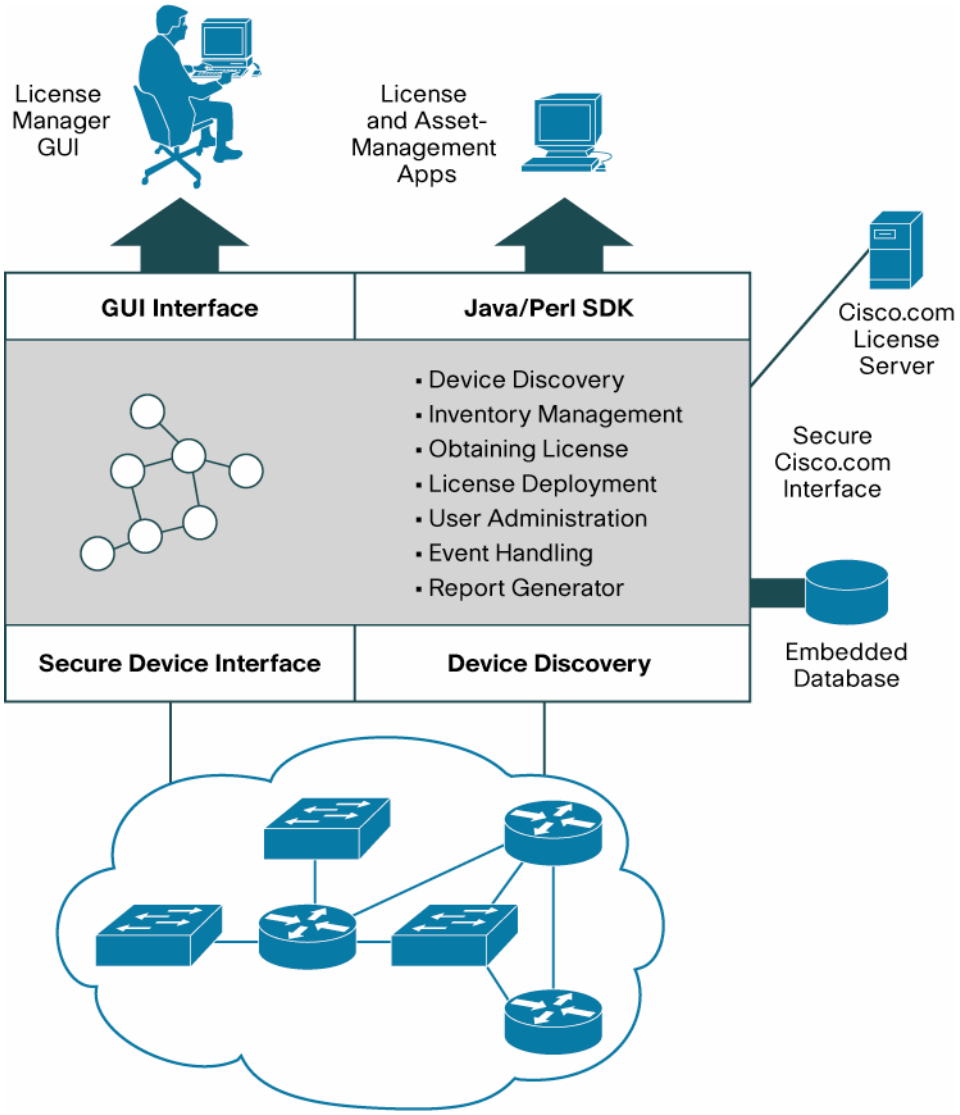

Product Specifications

Table 1 provides product specifications for Cisco License Manager 2.2.

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Table 1. Product Specifications

Product Parameter	Specification
Product compatibility	• Cisco Catalyst 3750-E Series Switches—Cisco IOS Software Release 12.2(35)SE and later • Cisco Catalyst 3560-E Series Switches—Cisco IOS Software Release 12.2(35)SE and later • Cisco Catalyst Blade Server (CBS) 3100 Series Switches—Cisco IOS Software Release 12.2(35)SE onwards • Cisco 2811, 2821, 2851, 3825, and 3845 Integrated Services Routers (modular)—Cisco IOS Software Release 12.4(15)XY and later • Cisco 1861 Integrated Services Router - Cisco IOS Software Release 12.4(11)XW and later • Cisco AS5350XM and AS5400XM Universal Gateways—Cisco IOS Software Release 12.4(15)XY and later • Cisco C860 and C880 Integrated Services Routers (fixed)—Cisco IOS Software Release 12.4(15)XZ and later • Cisco Unified Communications 500 Series for Small Business—Cisco IOS Software Release 12.4(11)XW6 and later • Cisco Intrusion Prevention System Advanced Integration Module—Cisco IPS Software Release 6.0(4) and later • Cisco XR 12000 Series Routers—Cisco IOS XR Software Release 3.6 and later • Cisco ASA 5500 Series Appliances – Cisco ASA software release 7.x and later • Cisco ASA 5500 Series Content Security Services Modules(CSC-SSM-10, CSC-SSM-20) – Cisco 6.1.1587.0 and 6.2.1599.x • Cisco IPS 4000 Series Sensors – Cisco IPS software series 6.0 and later • Cisco PIX 500 Series Appliances – Cisco PIX OS software versions 7.x and later • Cisco MDS 9000 Family of Multilayer Switches - Cisco SAN-OS Release 3.3.x and Cisco MDS 9000 NX-OS Version 4.1.1x and later • Cisco Nexus 7000 Family of Multilayer Switches - Cisco Nexus 7000 NX-OS Version 4.0(1) and later • Cisco 5500 Series Wireless Controllers - Cisco Unified Wireless Networking Software Release 6.0 and later
OS compatibility	• Windows Server 2003 R2 Standard Edition • Windows XP Professional • Solaris 10 • RedHat Linux Enterprise 5 • Cisco License Manager supports VMWare ESX Server 3 virtual machine environment • English version only
Java compatibility	JRE 1.5
Protocols	• SSH • Telnet • HTTP • HTTPS • XML • Syslog
Features and functions	Autodiscovery, inventory of deployed licensed features on the network, fulfill licenses from the license server on the Cisco Website, two-stage license deployment to securely support isolated networks, simple license transfers between devices, agentless device communication through SSH/Telnet, improved detailed license reporting, Java and Perl SDK–based programmatic interface, quick failure recovery by providing an ability to deploy licenses from the database or retrieve and deploy all licenses for a given device from the license server on the Cisco Website, backup and restore of database and configuration files, enhanced security with role-based access control and ACLs for each user for the managed devices, simple rule-based policy interface for completely automated license management, troubleshooting capabilities including X.733-based alerts, RMA license transfer.
Programming interfaces	Full-functionality Java and Perl SDKs

System Capacity

Table 2 lists the system capacity for Cisco License Manager 2.2.

Table 2. Cisco License Manager 2.2 System Capacity

System Parameter	Capacity
Number of supported devices	30,000

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Number of concurrent clients	5 (both GUI- and SDK-based clients)

System Requirements

Tables 3 and 4 list the system requirements for Cisco License Manager 2.2.

Table 3. System Requirements (Server or Client and Server on the Same Machine)

Description	Specification
Number of managed devices	30,000
Disk space	20 GB
Hardware	Intel Pentium 4 3.2 GHz or equivalent CPU-based Sun SPARC-Enterprise-T5120 or equivalent CPU-based
Memory	4 GB minimum
Software	• Windows Server 2003 R2 Standard Edition • Windows XP Professional • Solaris 10 • RedHat Linux Enterprise 5 • Cisco License Manager supports VMWare • English and Japanese localized version only

Table 4. System Requirements (Client-Only)

Description	Specification
Number of managed devices	30,000
Disk space	500 MB
Hardware	Pentium 3 1.0 GHz or equivalent CPU-based machine Sun SPARC-Enterprise-T5120 or equivalent CPU-based
Memory	1 GB minimum
Software	• Windows Server 2003 R2 Standard Edition • Windows XP Professional • Solaris 10 • RedHat Linux Enterprise 5 • Cisco License Manager supports VMWare ESX Server 3 virtual machine environment • English and Japanese localized version only
Java requirements	1.5

Cisco License Manager can be installed on less powerful machines such as laptops if the number of managed devices is small and there are no concurrent clients.

The requirements for the Cisco License Manager Java and Perl SDKs are given in table 5.

Table 5. SDK Requirements

Description	Specification
Java SDK	JDK 1.5
Perl SDK	ActivePerl 5.8.8

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Ordering Information

To place an order, visit the Cisco Ordering Homepage. Table 6 gives ordering information.

Table 6. Ordering Information

Description	Specification
Cisco License Manager 2.2 client and server software.	Available only by download from http://www.cisco.com/cgi-bin/tablebuild.pl/clm10
Cisco License Manager 2.2 Java Software Development Kit. **One SDK is needed for each development workstation.**	CLM2.2-JAVA-SDK
Cisco License Manager 2.2 Java Software Development Kit minor upgrade from Cisco License Manager 2.1 Java SDK. **One SDK is needed for each development workstation.**	CLM2.2-JAVA-SDK-U
Cisco License Manager 2.2 Perl Software Development Kit. **One SDK is needed for each development workstation.**	CLM2.2-PERL-SDK
Cisco License Manager 2.2 Perl Software Development Kit minor upgrade from Cisco License Manager 2.1 Perl SDK. **One SDK is needed for each development workstation.**	CLM2.2-PERL-SDK-U

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For More Information

For more information about Cisco License Manager, visit http://www.cisco.com/go/clm, contact your local Cisco sales representative, or send an e-mail to the product marketing group at ask-clm-pm@cisco.com.

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