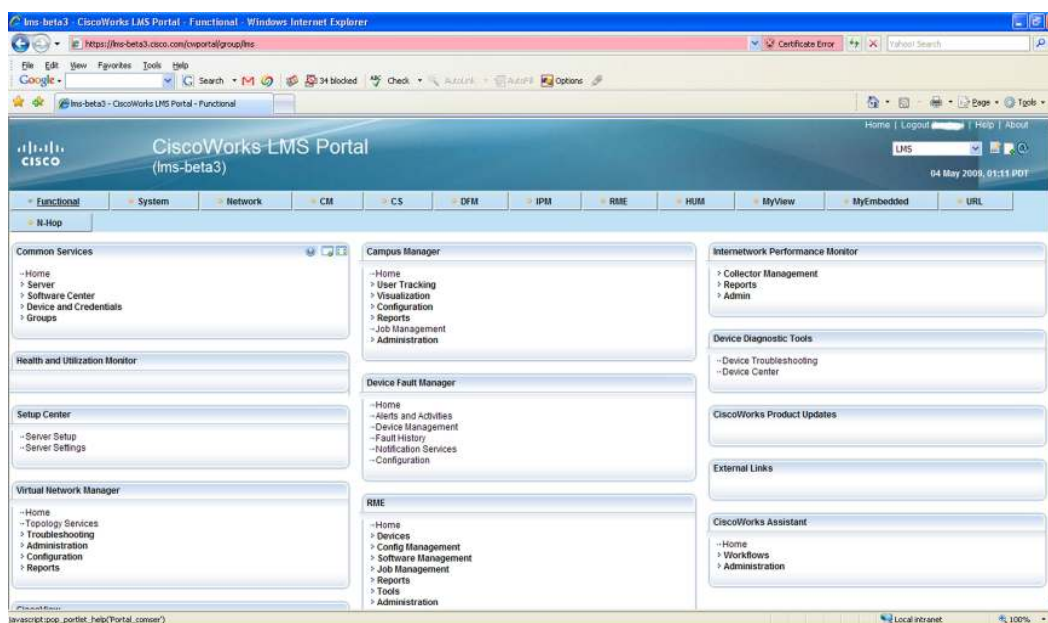


CiscoWorks LAN Management Solution 3.2

Product Overview

CiscoWorks LAN Management Solution (LMS) is an integrated suite of management tools that simplify the configuration, administration, monitoring, and troubleshooting of Cisco® networks. Built upon popular Internet-based standards, CiscoWorks LMS applications help enable network operators to manage the network through a browser-based interface that can be accessed anytime from anywhere within the network. CiscoWorks LMS maintains a centralized list of all Cisco network devices and their credentials that serves as a single repository for all CiscoWorks applications whether they are installed locally or distributed in a multiserver deployment. CiscoWorks LMS Portal provides functional views that can be customized to meet the needs of an individual or group of network operations staff, simplifying integration and navigation between Cisco and other third-party application functionality. See Figure 1.

Figure 1. CiscoWorks LMS Portal



A new workflow engine, CiscoWorks Assistant, provides a set of intuitive procedures for CiscoWorks server setup and troubleshooting network-related problems. See Figure 2.

Figure 2. CiscoWorks Assistant



Using common centralized systems and network inventory knowledge, CiscoWorks LMS delivers a unique platform of cross-functional management capabilities that reduce network administration overhead and simplify troubleshooting, improving overall network availability.

CiscoWorks LMS applications are delivered on a single DVD, one for the Windows operating system and another for the Solaris operating system, and installation is performed by a single, quick-and-easy installer. The CiscoWorks LMS application versions are as follows:

- CiscoWorks Common Services 3.3
- CiscoWorks LMS Portal 1.2
- CiscoWorks Assistant 1.2
- CiscoView 6.1.9
- Integration Utility 1.9
- CiscoWorks Resource Manager Essentials 4.3 (RME)
- CiscoWorks Campus Manager 5.2
 - Includes the new Virtual Network Manager 1.0 (VNM)
- CiscoWorks Device Fault Manager 3.2 (DFM)
- CiscoWorks Internetwork Performance Monitor 4.2 (IPM)

CiscoWorks LMS is part of the CiscoWorks family of products that provide comprehensive network management solutions to improve IT organizational effectiveness through task automation, simplification, and integration. CiscoWorks LMS is a component of the Cisco Proactive Automation of Change Execution (PACE) solution. PACE provides an integrated suite of Cisco products and services for centralizing configuration, change, and compliance management.

Features and Benefits

CiscoWorks LMS 3.2 is a new minor software release that delivers improvements in scalability, performance, and application-level functionality. It provides a centralized system for sharing device information across all applications, improving manageability, and allowing the management system to adjust to changes more dynamically. Delivered on a single DVD, the CiscoWorks LMS installation process is new and improved, providing faster uptime and capability that allows the user to install in unattended mode. A new portal interface helps facilitate rapid navigation between

tools and can be modified to meet a specific individual's needs. The network desktop comes with three default views that can be modified by the systems administrator, as well as customized views:

- **Functional view:** Similar to the currently shipping product, this view provides a list of applications and their corresponding functions.
- **System view:** Provides a system-level view into the status of various system-level attributes, including job status, backup information, system-level events, and application-related details.
- **Network view:** Allows for quick visibility into various network-level reports for faster troubleshooting of network-related problems.
- **Customized views:** The user also has the option of defining and saving personalized views.

CiscoWorks LMS 3.2 utilizes security information maintained in Cisco® Secure Access Control Server (ACS) to simplify the management of user privileges. Cisco Secure ACS integration provides flexibility in defining user roles and supports secured user views of specific devices or groups of devices or by geographic or logical network segments. Significant improvement in performance, such as multithreading background tasks, has reduced the time needed to deliver updates to the network, as well as generate reports. Efficient task processing and its shared database of managed devices allow CiscoWorks LMS to be deployed into larger networks.

CiscoWorks LMS consists of operationally focused tools capable of fault management, scalable topology views, sophisticated configuration, WAN performance troubleshooting, end-station tracking, and device troubleshooting. CiscoWorks LMS is built on the CiscoWorks Common Services management infrastructure and foundation. This design facilitates operations workflow between applications by linking data collection, monitoring, and analysis tools—all from a single desktop application. Additionally, switch or router configurations can then be quickly examined to detect anomalies or the need for changes. Those actions may draw information from one or more applications.

CiscoWorks LMS uses Internet standards to tie together best-in-class tools and to take advantage of their capabilities through data- and task-integration standards. Using the Common Information Model (CIM) and Extensible Markup Language (XML), which are industry standards for data sharing, allows CiscoWorks LMS a means of extracting data and using it with popular network management products.

Table 1 lists the CiscoWorks LMS 3.2 applications, and Table 2 lists the features and benefits of CiscoWorks LMS 3.2.

Table 1. CiscoWorks LAN Management Solution 3.2 Applications

Applications	Description
CiscoWorks Device Fault Manager	Real-time fault detection, analysis, and reporting using device knowledge and fault rules based on Cisco best practices for each device
CiscoWorks Campus Manager	A robust set of Layer 2 tools for device and connectivity discovery, detailed topology views, end-station tracking, network discrepancies
CiscoWorks Resource Manager Essentials	Tools for managing Cisco devices using inventory- and device-change management, network-configuration and software-image management, network availability, and syslog analysis
CiscoWorks CiscoView	GUI providing back- and front-panel displays of devices in a dynamic, color-coded graphical display. Simplifies device-status monitoring, device-specific component diagnostics, and application launching.
CiscoWorks Internetwork Performance Monitor	A network response-time and availability troubleshooting application. This tool empowers network engineers to proactively troubleshoot network performance using real-time and historical reports.
CiscoWorks Common Services	Provides the infrastructure for a common management desktop experience and the services for securing access to all CiscoWorks applications. Includes a common device and credentials repository for all applications as it populates the repository after running discovery over the managed network. Facilities include a foundation for integrating with other Cisco and third-party applications.
CiscoWorks Virtual Network Manager	Provides ability to configure, monitor, and troubleshoot VRFLite implementations. Configuration capabilities involve hop-by-hop configurations involving 802.1q trunks. Also has ability to discover VRFs in the network and provide a readiness report of capable and enabled devices

Table 2. CiscoWorks LMS 3.2 Features and Benefits

Function	Component	Description
Offers intelligent, automatic discovery of Cisco devices to create topology views of the network	CiscoWorks Campus Manager	The topology services discover Cisco devices and calculate Layer 2 relationships to provide views of the Cisco network by VLAN Trunking Protocol (VTP) domain, LAN edge view, and a general Layer 2 view.
Gives topology status indications	CiscoWorks Campus Manager	The topology maps indicate the discovery and Simple Network Management Protocol (SNMP) status of Cisco devices; these maps also are launching points for other CiscoWorks applications.
Configures, manages, and monitors VLANS	CiscoWorks Campus Manager	CiscoWorks Campus Manager provides tools for creating, deleting, and editing VLANs.
Discovers end stations and IP phones connected to switch ports and identifies user locations based on user ID	CiscoWorks Campus Manager	The user-tracking function correlates MAC address and IP address to switch port; integration with Microsoft's PDC and Novell's NDS tree provides the user ID for even more efficient user location and tracking. Dynamic option for "real"-time collection of port-related activity.
Discrepancy reporting with automated fix option	CiscoWorks Campus Manager	Quickly identifies port-level discrepancies, that is, port speed issues, and provides the ability to automatically fix the problem.
Intelligently analyzes fault conditions, detecting problems before they become network disruptions	CiscoWorks Device Fault Manager	The automated fault detection recognizes common problems in networks without forcing users to define their own rules sets, SNMP trap filters, or device-polling intervals.
Interprets fault conditions at both the device and VLAN levels	CiscoWorks Device Fault Manager	With the characteristics of more than a 100 Cisco routers and switches predefined, new device support is easily added through Cisco.com. CiscoWorks Device Fault Manager simplifies managing both Layer 2 and Layer 3 environments.
Offers detailed software and hardware inventory reporting including PSIRT and end-of-sale and end-of-life related information	CiscoWorks Resource Manager Essentials	CiscoWorks RME provides accurate Cisco product-inventory baseline information, including memory, slots, software versions, and BootROMs needed to make decisions about the network. Provides ability to generate reports on PSIRT (product security incidents) and end-of-sale and end-of-life devices.
Offers automated update engines for device software and configuration changes	CiscoWorks Resource Manager Essentials	CiscoWorks RME allows software and configuration updates to be sent to selected devices on a scheduled basis; it reduces time and errors involved in network updates.
Offers a consolidated troubleshooting tools center	CiscoWorks Resource Manager Essentials	A wide collection of switch- and router-analysis tools is accessible from a single location; third-party applications can link to the tool center.
Offers centralized change-audit logging	CiscoWorks Resource Manager Essentials	A comprehensive change-monitoring log records users and applications that are active on the network.
Offers graphical device management	CiscoWorks CiscoView	CiscoView displays a browser representation of Cisco router and switch devices, color-coded to indicate operational states, with access to configuration and monitoring tools.
Provides network response and availability information for WAN networks	CiscoWorks Internetwork Performance Monitor	CiscoWorks IPM simplifies the identification of devices contributing to latency and network delays and allows WAN managers to manage the effectiveness of voice-over-IP (VoIP) and quality of service (QoS) features implemented in their networks.
Network portal for flexible user display	CiscoWorks LMS	Portal technology allows the user to customize views into the network management application functionality or chose from one of the three default views provided.
Workflows for improved setup and troubleshooting	CiscoWorks Assistant	CiscoWorks Assistant provides workflows for simplifying setup of CiscoWorks and for faster troubleshooting of device-related issues.
Provides application-access security	CiscoWorks LMS	Its management desktop controls user access to applications, helping ensure that only appropriate classes of users can access tools that change network parameters versus read-only tools.
Network Virtualization support	CiscoWorks VNM	CiscoWorks VNM running in conjunction with CiscoWorks RME and CiscoWorks Campus Manager provides capability to run discover VRF, configure VRF Lite, and monitor and troubleshoot network virtualization environments set up using 802.1q trunks.
Provides common and shared device list and credentials repository	CiscoWorks LMS	The CiscoWorks server provides the common device and credentials repository for all applications and populates the repository after running discovery over the managed network.
Offers third-party integration tools and interfaces like the Network Management Integration Module (NMIM)	CiscoWorks LMS	The CiscoWorks server simplifies the web integration of third-party and other Cisco management tools.

Operating System Requirements

CiscoWorks LMS 3.2 runs on with the following operating systems:

- Solaris
 - Solaris 9
 - Solaris 10

CiscoWorks LMS 3.2 is installed on the global zone of Solaris 10 operating system by default. Installation of CiscoWorks LMS 3.2 is also supported on the whole-root nonglobal zone. For details, see [Support for Zone-based Virtualization in Solaris 10](#). CiscoWorks LMS 3.2 also supports logical domains (LDoms) and ZFS file system. See [Solaris Patches](#) for more information on Solaris patches to be installed on these operating systems.

- Windows
 - Windows Server 2003 Standard Edition
 - Windows Server 2003 Enterprise Edition
 - Windows Server 2003 R2 Standard Edition
 - Windows Server 2003 R2 Enterprise Edition
 - Windows Server 2003 Standard Edition with Service Pack 1 and 2
 - Windows Server 2003 Enterprise Edition with Service Pack 1 and 2
 - Windows Server 2003 R2 Standard Edition with Service Pack 1 and 2
 - Windows Server 2003 R2 Enterprise Edition with Service Pack 1 and 2
 - Windows 2008 Server Standard and Enterprise Edition with Service Pack 1

Windows 2008 Server Standard and Enterprise Edition with Service Pack 1 and 2. Both 32-bit and 64-bit operating systems are supported on the above versions.

- Virtualization Systems*
 - VMware ESX server 3.0.1
 - VMware ESX Server 3.5.0
 - VMware ESXi 3.5 Update 2
 - VMWare ESX 4.0
 - VMWare ESXi 4.0
 - Hyper V Virtualization

* VMWare and Hyper V support is not available for CWLMS-3.0-10K-K9 (10,000 device) SKU.

High Availability and Geographic Redundancy

CiscoWorks LMS has support for Veritas based Clustering for both Windows and Solaris. For required hardware and software details please refer to the install guides. Clustering and geographic redundancy support for CiscoWorks LMS is only for active-standby operations. Please send an email to lms-pm@cisco.com if you have any questions.

Tables 3 and 4 provide the system requirements for the server and client, respectively.

Table 3. CiscoWorks LMS 3.2 System Requirements: Server

Part Number (SKU)	Solaris (Memory and Hardware Recommendations)	Microsoft Windows (Memory and Hardware Recommendations)
CWLMS-3.2-100-K9	Not supported	1 CPU with 2 GB RAM and 4 GB swap space

CWLMS-3.2-300-K9	<ul style="list-style-type: none"> 1 CPU with 2 GB RAM and 4 GB swap space on Solaris 9 1 CPU with 4 GB RAM and 8 GB swap space on Solaris 10 	1 CPU with 2 GB RAM and 4 GB swap space
CWLMS-3.2-1.5K-K9	2 CPUs with 4 GB RAM and 8 GB swap space	2 CPUs at 3.66 GHz with 4 GB RAM and 8 GB swap space
CWLMS-3.2-5K-K9	Single server for all products in CiscoWorks LMS Suite when the device count is under 5000: 4 CPUs with 8 GB RAM and 16 GB swap space	Single server for all products in CiscoWorks LMS suite when the device count is below 5000: 4 CPUs with 8 GB RAM and 16 GB swap space
CWLMS-3.2-10K-K9	Dedicated servers per product in LMS Suite: 2 CPUs with 4 GB RAM and 8 GB swap space	Dedicated servers per product in CiscoWorks LMS Suite: 2 CPUs with 4 GB RAM and 8 GB swap space
Minimum disk	100/300 devices being managed: 25 GB 1500/5000/10,000 devices being managed: 35 GB	100/300 devices being managed: 25 GB 1500/5000/10,000 devices being managed: 35 GB
Processor support	<ul style="list-style-type: none"> UltraSPARC III UltraSPARC IIIi processor UltraSPARC IV processor UltraSPARC IV+ processor UltraSPARC T1 processor UltraSPARC T2 processor UltraSPARC T2+ processor (only on Solaris 10) SPARC64 VI processor (only on Solaris 10) SPARC64 VII processor (only on Solaris 10) 	<p>Intel processors</p> <ul style="list-style-type: none"> Intel Xeon processor (Dual Core) Intel Core Duo processor T2600 – T2300 Intel Pentium processor Extreme Edition 965 (Dual Core) Intel Pentium D processor 960 (Dual Core) Intel Pentium 4 processor with Hyper-Threading Technology Quad Core Intel Xeon Intel Itanium Processor Intel-VT processors (VMWare Optimized hardware) Quad-Core Intel Xeon processor 5400 series Quad-Core Intel Xeon processor 5300 series Quad-Core Intel Xeon processor 7300 series <p>AMD processors</p> <ul style="list-style-type: none"> Dual-Core AMD Opteron Processor AMD Opteron Processor AMD Athlon 64 FX Processor AMD Athlon 64 X2 Dual-Core AMD –V

Table 4. System Requirements: Client

Description	Specifications
Disk space	<ul style="list-style-type: none"> Solaris: 1 GB swap space Windows: 1 GB virtual memory
Memory	512 MB
Hardware and software	<ul style="list-style-type: none"> IBM PC-compatible system with at least Intel Pentium IV processor running <ul style="list-style-type: none"> Windows 2003 Standard and Enterprise Editions with Service Pack 2 (32 and 64 Bit) Windows 2003 Standard R2 and Enterprise R2 Editions with Service Pack 2 (32 and 64 Bit) Windows XP with Service Pack 2, Service Pack 3 Windows Vista Business Edition (English and Japanese only) and SP1 Windows 2008 Standard and Enterprise (32 and 64 bit) Solaris 9, Solaris 10 (English and Japanese only)
Browser	<ul style="list-style-type: none"> Internet Explorer 6.0. Service Pack 2—Windows Server 2003, Windows XP with Service Pack 2 Internet Explorer 7.0 (Supports Internet Explorer over Windows Vista, Windows XP with Service Pack 2, and Windows 2003) Firefox 3.X for Windows and Solaris Firefox 2.X for Solaris 9 only

Ordering Information

CiscoWorks LMS 3.2 is available for purchase through regular Cisco sales and distribution channels worldwide. To place an order, visit the [Cisco Ordering Homepage](#).

CiscoWorks LMS licensing options are described in the CiscoWorks LMS product bulletin at http://www.cisco.com/en/US/products/sw/cscowork/ps2425/prod_bulletins_list.html.

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about CiscoWorks LAN Management Solution, visit <http://www.cisco.com/go/lms>, contact your local Cisco account representative, or send an email to the product marketing group at lms-pm@cisco.com.



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