

## CiscoWorks Resource Manager Essentials 4.1

### Product Overview

CiscoWorks Resource Manager Essentials (RME) 4.1 is the cornerstone application of CiscoWorks LAN Management Solution (LMS). CiscoWorks RME provides lifecycle management of Cisco® network devices. Designed to reduce human error and eliminate many of the manual tasks associated with maintaining a network, CiscoWorks RME helps make Cisco networks the most manageable and available in the world.

CiscoWorks RME is a suite of tools for simplifying the administration of a Cisco network. Its capabilities include:

- Inventory management
- Device-configuration management
- Software image management
- Change-audit services
- Syslog analysis

### New Features in RME 4.1

CiscoWorks RME 4.1 contains the following features:

- Improved scalability in CiscoWorks RME 4.1 with support for up to 10,000 devices on a standalone server
- Support for Cisco IOS® Software modular images
- Additional new inventory reports: PSIRT Summary Report and End of Sale/End of Life Report
- Performance tuning tool for tuning parameters for improving responsiveness
- External Trivial File Transfer Protocol (TFTP) server support
- Device manageability status
- Secondary credentials fallback
- Notification on inventory or configuration failure
- Netconfig reload task
- Software image management command-line interface (CLI)
- CLI support for Check Device Attributes (CDA) jobs
- SysUpTime attribute for inventory custom reports

### CiscoWorks Resource Manager Essentials Features and Benefits

The basic purpose of CiscoWorks RME is to simplify network operations and to dramatically increase operational efficiency. CiscoWorks RME can automate software updates and configuration changes, reduce human error, and track changes in the network.

Table 1 lists the features and benefits of CiscoWorks Resource Manager Essentials.

**Table 1.** Features and Benefits of CiscoWorks RME

Feature	Benefits
<b>Device inventory management</b>	<ul style="list-style-type: none"> <li>Ability to build a quick and complete network inventory of operational Cisco devices</li> </ul>
<b>Device configuration management</b>	<ul style="list-style-type: none"> <li>Management and deployment of configuration changes and software image updates to multiple devices</li> </ul>
<b>Device change management</b>	<ul style="list-style-type: none"> <li>Monitoring and reporting on hardware, configuration, and inventory changes</li> </ul>
<b>Graphical user interface and usability</b>	<ul style="list-style-type: none"> <li>New lightweight HTML-based GUI for higher performance</li> <li>Redesigned workflows for improved usability and performance</li> </ul>
<b>Secure communications</b>	<ul style="list-style-type: none"> <li>Secure communication between the client browser and CiscoWorks LMS server through Secure Sockets Layer (SSL) protocol This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. For more details please visit the following website: <a href="http://www.openssl.org/">http://www.openssl.org/</a></li> <li>Secured upload and download of device configurations from server devices through Secure Shell (SSH) Protocol and Secure Copy Protocol (SCP)</li> </ul>
<b>Integration with Cisco Secure Access Control Server</b>	<ul style="list-style-type: none"> <li>Integration with Cisco Secure Access Control Server (ACS) for granular user-role definitions and secured device views</li> </ul>

## Device Inventory Management

The CiscoWorks RME Inventory Manager builds and maintains an up-to-date device hardware and software inventory. Table 2 lists the features and benefits of CiscoWorks Resource Manager Essentials Inventory Manager.

**Table 2.** Features and Benefits of CiscoWorks RME Inventory Manager

Feature	Benefits
<b>Comprehensive device inventory</b>	<ul style="list-style-type: none"> <li>Provides a current inventory database of Cisco devices, from the low-end Cisco routers to the high-end Cisco GSR 12000 Series switches. The inventory database provides detailed information on device attributes, such as chassis type, interfaces, software version, memory, Flash characteristics, and more.</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>Provides a wide range of reporting capabilities from high-level summary reports to detailed device-level reporting that can be scheduled and copied to CiscoWorks servers and other management servers in the network.</li> <li>Users can select a wide range of inventory attributes to create custom report templates. The templates can be applied to devices in the network to identify and report on devices fitting the template criteria.</li> <li>Additional new reports include: <ul style="list-style-type: none"> <li>PSIRT reports to ascertain security vulnerabilities that could affect the devices running Cisco IOS Software in your network.</li> <li>End of Sale/End of Life Report to ascertain the end-of-sale and end-of-life details that affect the devices and modules in your network</li> </ul> </li> </ul>
<b>Flexible user settings</b>	<ul style="list-style-type: none"> <li>Allows administrators to set up flexible polling and collection schedules to maintain an up-to-date inventory of all Cisco devices in the network.</li> </ul>
<b>Graphical user interface and usability</b>	<ul style="list-style-type: none"> <li>New device-grouping capability allows users to create groups based on a wide variety of device attributes to facilitate easier device selection.</li> <li>Devices not yet on the network can also be easily added. These devices will be "selectable" in the device selector, and tasks can be scheduled on these devices.</li> </ul>
<b>Export of device information</b>	<ul style="list-style-type: none"> <li>Provides a CLI to extract detailed device-inventory information in Extensible Markup Language (XML) format.</li> </ul>

## Device Configuration Management

The CiscoWorks RME Device Configuration Manager maintains an active archive and simplifies deployment of configuration changes to multiple devices. It consists of three subcomponent utilities: Configuration Archive, NetConfig, and ConfigEditor.

Table 3 lists the features and benefits of CiscoWorks Resource Manager Essentials Device Configuration Manager.



**Table 3.** Features and Benefits of CiscoWorks RME Device Configuration Manager

Feature	Benefits
<b>Configuration Archive utility</b>	<ul style="list-style-type: none"> <li>• Maintains an up-to-date archive by automatically identifying and storing changes to configuration files.</li> <li>• Supports configuration-file searching to simplify locating specific device configurations and configuration attributes.</li> <li>• Identifies differences between running and start up, two different versions of configurations on the same device, or different devices.</li> <li>• Performance is significantly improved over previous versions of CiscoWorks RME.</li> <li>• Allows users to choose a device and its version of configuration and download the configuration to the device from the Configuration Archive application.</li> <li>• Offers the ability to create a configuration template per device family and compare the template file to the configuration in the archive to identify compliant and noncompliant devices.</li> <li>• Provides CLI command to extract the running configuration from devices in XML format.</li> </ul>
<b>NetConfig utility</b>	<ul style="list-style-type: none"> <li>• A new wizard-based approach to simplify and reduce the complexities and time associated with deploying global changes in the network.</li> <li>• Performance and scalability are significantly improved over previous versions of CiscoWorks RME.</li> <li>• Capability for configuration changes to be performed against multiple switches or routers in the network; changes can be downloaded immediately or run as scheduled operations.</li> <li>• Templates provided by Cisco that simplify the configuration-change process for Simple Network Management Protocol (SNMP) community, TACACS, syslog, SNMP trap destinations, Cisco Discovery Protocol, Domain Name System (DNS), and many others.</li> <li>• Flexibility in pushing CLI changes out to the network through user-defined templates that are published to an authorized user or group of users for execution.</li> <li>• Support for downloading and uploading device configurations using secure protocols such as SSH Protocol and Secure Copy Protocol (SCP).</li> <li>• Support for configuration management for devices across Network Address Translation (NAT) boundaries.</li> <li>• Ability for operators to specify username and password (including enable password) for devices selected for the job, during job creation (function is also available in ConfigEditor).</li> </ul>
<b>ConfigEditor Utility</b>	<ul style="list-style-type: none"> <li>• A powerful Web-based editing facility for modifying and downloading configuration changes.</li> <li>• Improved workflow, allowing multiple users to modify configuration file of the same device.</li> <li>• Masked user and access credentials in configuration files, for improved security.</li> <li>• Ability for operators to specify username and password (including enable password) for devices selected for the job, during job creation.</li> </ul>

## Software Image Manager

The CiscoWorks RME Software Image Manager greatly simplifies the version management and routine deployment of software updates to Cisco routers and switches through wizard-assisted planning, scheduling, downloading, and monitoring of software updates. CiscoWorks RME Software Image Manager automates the many time-consuming steps required to upgrade software images while reducing the error-prone complexities of the upgrade process. Built-in links to Cisco.com correlate the Cisco online information about software patches with Cisco IOS Software and Cisco Catalyst<sup>®</sup> software deployed in the network, highlighting related technical notes. New planning tools, also linked to Cisco.com, find system requirements and send notification when hardware upgrades (BootROM, Flash RAM) are needed to support proposed software image updates.

Table 4 lists the features and benefits of CiscoWorks Resource Manager Essentials Software Image Manager.

**Table 4.** Features and Benefits of CiscoWorks RME Software Image Manager

Feature	Benefits
<b>Workflow modeling</b>	<ul style="list-style-type: none"> <li>• Ability for users to select an image and appropriate devices, followed by job scheduling. This new workflow reduces the amount of time it takes to create a job (especially if the image to be deployed is known) by eliminating the "Image Recommendation" phase.</li> <li>• Ability for users to optimize bandwidth utilization by storing the image to be deployed on a router's Flash memory and "instructing" the devices to retrieve the image from the router.</li> <li>• Device and image combination safety checks before distribution.</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>• Performance and scalability is significantly improved over previous versions of CiscoWorks RME, including the ability to download different images to multiple device types simultaneously.</li> <li>• Contains enhanced Web-proxy support for improved Cisco.com connectivity.</li> <li>• Provides robust software-upgrade analysis for Cisco devices.</li> </ul>
<b>Software image library and auditing</b>	<ul style="list-style-type: none"> <li>• Performs Cisco device software image audits and library synchronization</li> <li>• Uses Cisco.com to report on software defects and available patches that affect devices and images in your network.</li> </ul>
<b>Software image distribution</b>	<ul style="list-style-type: none"> <li>• Distributes single or multiple images to devices in a single deployment operation.</li> <li>• Supports software image management for devices across NAT boundaries.</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>• Provides software-update analysis reports showing prerequisites and impacts of proposed updates.</li> </ul>

In addition to the features listed in Table 4, CiscoWorks RME Software Image Manager:

- Provides remote staging and distribution, which support the use of an external TFTP server as the staging server to distribute images to devices.
- Supports upgrades of both active and standby supervisors for the following devices: 76xx, Cat6k IOS Chassis, Cat4500 IOS chassis, and 10K routers.
- Supports a software image management CLI to list software images available in the Software Image Management Repository as well as to export images from the Software Image Management Repository.
- Supports reboot immediately after the image download if followed by the new reload task to the candidate devices.
- Has support for modular Cisco IOS Software on Cat6000 with Sup 32/720 and Cat7600 with Sup 32/720 to incrementally add features or apply bug fix patches without requiring a full reimage of the operating system on the device.

### Change Audit Service

The CiscoWorks RME Change Audit tool provides a central point where users can view network changes. Summary information is easily displayed, showing the types of changes made, by whom, and when. Further, the nature of the changes is identified quickly through detailed reports (cards added or removed, memory changes, configuration changes, and so on). In organizations with policies defining when changes should be made to the network, Change Audit provides an exception summary, highlighting changes made outside the approved time window.

Table 5 lists the features and benefits of CiscoWorks Resource Manager Essentials Change Audit Service.

**Table 5.** Features and Benefits of CiscoWorks RME Change Audit Service

Feature	Benefits
<b>Network change auditing</b>	<ul style="list-style-type: none"> <li>• Provides a comprehensive audit of network changes reported chronologically</li> <li>• Records who changed what, when, and how</li> <li>• Identifies network changes made during critical network uptime</li> </ul>
<b>Reporting</b>	<ul style="list-style-type: none"> <li>• Offers change-report filtering using simple or complex sort criteria</li> </ul>

## Syslog Analyzer

The CiscoWorks RME Syslog Analyzer filters syslog messages logged by Cisco switches, routers, access servers, and Cisco IOS firewalls, displaying explanations of probable causes and recommended actions. It uses embedded Cisco IOS technology to provide detailed device information. Its reports are based on user-defined filters that highlight specific errors or severity conditions and help identify when specific events occurred (such as a link-down or a device reboot).

Table 6 lists the features and benefits of CiscoWorks Resource Manager Essentials Syslog Analyzer.

**Table 6.** Features and Benefits of CiscoWorks RME Syslog Analyzer

Feature	Benefits
<b>Aids in troubleshooting network issues</b>	<ul style="list-style-type: none"> <li>• Speeds troubleshooting by displaying critical error patterns over time</li> <li>• Summarizes syslog events by severity or user criteria for switches, routers, Cisco IOS firewalls, and Cisco PIX<sup>®</sup> firewalls</li> <li>• Separates unwanted messages with user-definable filters</li> </ul>
<b>Customization</b>	<ul style="list-style-type: none"> <li>• Supports selective filtering of remote syslog collectors, allowing only wanted messages to be sent to the CiscoWorks RME server</li> <li>• Launches user-defined scripts based on when a particular syslog severity message is received</li> </ul>
<b>Performance</b>	<ul style="list-style-type: none"> <li>• Significantly enhances performance and scalability compared to prior releases of CiscoWorks RME, including the ability to process a larger number of incoming syslog messages per second</li> </ul>

## System Requirements

Please refer to the CiscoWorks LAN Management Solution 3.0 product data sheet, under the Product Literature section at <http://www.cisco.com/go/lms>, for specific hardware and software server and client requirements.

## Ordering Information

CiscoWorks Resource Manager Essentials is part of the CiscoWorks LAN Management Solution (LMS). CiscoWorks LMS is available for ordering through regular Cisco sales and distribution channels worldwide.

To place an order, visit the [Cisco Ordering Home Page](#).

## 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 the CiscoWorks Resource Manager Essentials application, visit <http://www.cisco.com/go/lms>, contact your local Cisco account representative, or send an e-mail to the product marketing group at [lms-pm@cisco.com](mailto:lms-pm@cisco.com).



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