



Overview

The Resource Manager Essentials (Essentials) suite is part of the CiscoWorks family of products. It is an Enterprise solution to network management. Essentials is a powerful suite of Web-based applications offering network management solutions for Cisco switches, access servers, and routers. The Resource Manager Essentials browser interface allows easy access to information critical to network uptime and simplifies time-consuming administrative tasks.

Essentials is based on a client/server architecture that connects multiple web-based clients to a server on the network. As the number of network devices increases, additional servers or collection points can be added to manage network growth with minimal impact on the client browser application.

Taking advantage of the scalability inherent in the intranet architecture, Essentials supports multiple users anywhere on the network. The web-based infrastructure gives network operators, administrators, technicians, Help Desk staff, IS managers, and end users access to network management tools, applications, and services.

Essentials allows the network administrators to view and update the status and configuration of all Cisco devices from anywhere on the network through a standard Web browser as the Essentials client.

Essentials maintains a database of current network information. It can generate a variety of reports that can be used for troubleshooting and capacity planning. When devices are initially added to the Essentials inventory, the network administrator can schedule Essentials to periodically retrieve and update device information, such as hardware, software, and configuration files, to ensure that the most current network information is stored. In addition, Essentials automatically records any changes made to network devices, making it easy to identify when changes are made and by whom.

Essentials applications provide the network monitoring and fault information you need for tracking devices that are critical to network uptime and application availability. They also provide tools that you can use to rapidly and reliably deploy Cisco software images and view configurations of Cisco routers and switches. Essentials applications, together with links to Cisco.com service and support, automate software maintenance to help you maintain and control your Enterprise network.

Features

Essentials works in conjunction with the CiscoWorks Server, which contains a set of management services shared by multiple management applications. These management services are enabled when a suite is installed and an application that relies on one of these services is opened.

If a particular suite of applications does not use a service or does not use it to the fullest extent to which it is available, this service might not appear on the CiscoWorks desktop.

Essentials uses these CiscoWorks services:

- Database engine and utilities
- Login and application-launching desktop
- Event Management
- Online help system
- Job Management
- Cisco Management Connection (CMC)
- Process Management
- Security
- Web server

For detailed information, see *User Guide for Common Services 2.2*.

Table 1-1 lists Essentials applications in alphabetical order, not the order in which they appear in the navigation tree:

Table 1-1 Essentials Applications

| Application Name | Purpose | Notes |
|------------------|--|--|
| Availability | <ul style="list-style-type: none"> Monitor the reachability and response time of user-selected devices on the network. Collect fault and performance information for routers and switches. | <p>To use Availability options, select Resource Manager Essentials > Availability.</p> <p>To administer Availability options, select Resource Manager Essentials > Administration > Availability.</p> |
| Case Management | <ul style="list-style-type: none"> Open a case to Cisco.com through the CiscoWorks desktop. View the history and status of your case and update description of problems. | To select Case Management options, select Management Connection > Case Management. |
| Change Audit | <ul style="list-style-type: none"> View and search a central repository of all network changes (for example, inventory, software management, and so on). Set up periods of time to monitor network changes. Maintain the repository. Convert changes into SNMP traps and forward them to your network management system. | <p>To use Change Audit options, select Resource Manager Essentials > Change Audit.</p> <p>To administer Change Audit options, select Resource Manager Essentials > Administration > Change Audit.</p> |

Table 1-1 Essentials Applications (continued)

| Application Name | Purpose | Notes |
|--------------------------|---|---|
| Configuration Management | <ul style="list-style-type: none"> • Maintain an active archive of device configuration files. • Search the archive for configuration files based on criteria you specify. • Create custom reports for repetitive tasks. • Group configuration files and label them as a set. • Make configuration changes to your managed network devices using NetConfig, Config Editor, and CWConfig. • Create configuration templates using NetConfig. • Edit configuration files stored in configuration archive and download files to devices using Config Editor, and CWConfig. • Create network show command sets using NetShow. • Assign users to network show command sets. • Define and schedule batch reports using NetShow that can be executed at any time you specify. | <p>To use Configuration Management options, select Resource Manager Essentials > Configuration Management.</p> <p>To administer Configuration Management options, select Resource Manager Essentials > Administration > Configuration Management.</p> <p>To use the <code>cwconfig</code>, <code>cwconfig netconfig</code>, <code>cwconfig netshow</code> and <code>cwconfig netshowbatch</code> commands, use the command line.</p> |
| Contract Connection | Verify which of your Cisco IOS devices are covered by a service contract. | To use Contract Connection, select Resource Manager Essentials > Contract Connection. |

Table 1-1 Essentials Applications (continued)

| Application Name | Purpose | Notes |
|------------------------------|---|--|
| Data Extracting Engine (DEE) | Extract detailed device inventory and running configuration information in XML format from the Essentials server. | Provides you with two mechanisms to extract data - A command line utility and a servlet utility, which can be accessed by any client script through HTTP or HTTPS. Use the command <code>cwexport</code> from the command line. |
| Device Navigator | <ul style="list-style-type: none"> Browse a device that has an HTTP server enabled. You can select a device and go to the device home page to perform some operations typically performed by the Telnet application. For example, you can view interface configuration details, verify interface connectivity, monitor a router, and view technical support information. Configure a fallback port. Typically, the HTTP server for a device is configured to run on port 80. However, you can configure it to run on any port. When you browse the device, Device Navigator tries to connect through port 80. If this fails, Device Navigator uses a fallback port. | To select Device Navigator options, select Management Connection > Device Navigator. |
| Device Views | <p>Create device views for reports:</p> <ul style="list-style-type: none"> Create private or public static views. Create dynamic or static views. | To administer Device Views options, select Resource Manager Essentials > Administration > Device Views. |

Table 1-1 Essentials Applications (continued)

| Application Name | Purpose | Notes |
|------------------|--|--|
| Inventory | <ul style="list-style-type: none"> • Import devices from databases or files. • Export device information to files. • Add, delete, change, and list devices in your network. • Schedule polling and collection to update your network inventory. • Display reports and graphs of your hardware and software inventory, and create Inventory custom reports. • Check device attributes. • Change device attributes. • Display a Year 2000 compliance report. • Allow other network management systems to manipulate Essentials devices. • Provide install support for new devices and enhanced support for existing devices. | <p>To use Inventory options, select Resource Manager Essentials > Inventory.</p> <p>To administer Inventory options, select Resource Manager Essentials > Administration > Inventory.</p> |
| Job Approval | <p>Used by some applications to:</p> <ul style="list-style-type: none"> • Create and manage approver lists. • Enable and disable Job Approval. • Approve and reject jobs. • Enable jobs which are imported through remote upgrade. | <p>To administer Job Approval options, select Resource Manager Essentials > Administration > Job Approval.</p> |

Table 1-1 Essentials Applications (continued)

| Application Name | Purpose | Notes |
|---------------------|---|--|
| Software Management | <ul style="list-style-type: none"> • Analyze upgrade needs and perform upgrades for Cisco devices on your network. • Schedule and download images from Cisco.com Or Download images from devices in the network Or Import from the file system of the server, and maintain a local library of images. • Validate images with devices before initiating downloads, define and monitor the progress of scheduled jobs. • Compare images running on the devices in your network with the images on Cisco.com. • Archive images running on the device. | <p>To use Software Management options, select Resource Manager Essentials > Software Management.</p> <p>To administer Software Management options, select Resource Manager Essentials > Administration > Software Management.</p> |
| Syslog Analysis | <ul style="list-style-type: none"> • Track device problems. • View severity level summaries of events that are being logged to syslog on behalf of a router or switch. • Create and view reports for syslogs logged depending on date, device, or type of syslog. • Configure automatic actions that occur when certain message types are received. | <p>To use Syslog options, select Resource Manager Essentials > Syslog Analysis.</p> <p>To administer Syslog options, select Resource Manager Essentials > Administration > Syslog Analysis.</p> |

Table 1-1 Essentials Applications (continued)

| Application Name | Purpose | Notes |
|----------------------|--|---|
| System Configuration | Change system-wide configuration for SNMP, SMTP, proxy, and rcp settings. | To administer System Configuration options, select Resource Manager Essentials > Administration > System Configuration. |
| 24-Hour Reports | <p>24-hour reports contain data that you may want to view and monitor each day:</p> <ul style="list-style-type: none"> • Change Audit Report: Generates a summary of the changes made in the past 24 hours from data stored in the Change Audit log. • Syslog Messages: Displays customized reports of syslogs logged in the past 24 hours. • Reloads Report: Displays the reloads that occurred in the last 24 hours, (up to 5) for selected devices. Shows the reason for each reload and when it occurred. • Offline Device Report: Lists devices that have been off line for the past 24 hours. • Inventory Change Report: Shows the details of all inventory changes made during the last 24 hours. • Configuration Sync Report: Lists devices whose running configurations differ from their startup configurations. • Software Upgrade Report: Displays the device software modifications made in the last 24 hours. | To invoke the required 24-hour report, select Resource Manager Essentials > 24-Hour Reports. |

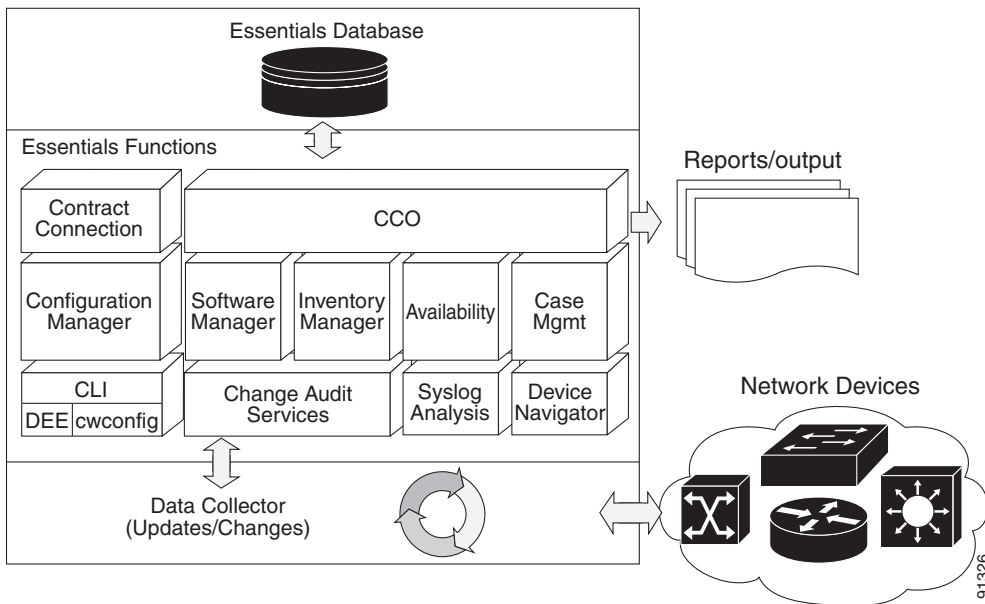
Functional Architecture

The Essentials web-based infrastructure consists of the following main components:

- [CiscoWorks Server](#)
- [Essentials Database and Functions](#)
- [Web Clients](#)
- [Cisco.com](#)

See [Figure 1-1](#) for a general view of the Essentials Functional Architecture:

Figure 1-1 Essentials Functional Architecture



CiscoWorks Server

Essentials relies on the CiscoWorks Server for common functions such as the database engine, online help, security, login, application launching, job and process management, and the Web server. This provides a common framework and interface for all CiscoWorks products. For detailed information, see User Guide for Common Services 2.2.

**Note**

The CiscoWorks Server (CD One) must be installed prior to installing Essentials. Essentials cannot run as a standalone application.

In addition, the CiscoWorks Server should remain on line at all times in order to poll devices, monitor events, and perform scheduled data collection. If the server goes down, there will be an interruption in the network management information gathered and stored in Essentials.

Essentials Database and Functions

Essentials stores all critical network management information in a central database, including device inventory, software images, configuration files, syslog messages, and change records. Essentials functions interact with the database and with network devices to collect information, display reports, and automate many repetitive network management tasks.

Many Essentials functions can also be configured to periodically poll network devices and update the database automatically.

Essentials uses common protocols such as Simple Network Management Protocol (SNMP), SSH, Telnet, Trivial File Transfer Protocol (TFTP), and remote copy protocol (rcp) to access devices and retrieve configuration files and software images from devices.

Web Clients

The server can be accessed from any client with appropriate system requirements. Essentials clients are platform independent, allowing a UNIX client to access a Windows server or a Windows client to access a UNIX server. The only client software required is a supported web browser, such as Netscape Navigator or Microsoft Internet Explorer.

Cisco.com

Essentials also connects to the Cisco.com system to obtain up-to-date product updates and technical assistance information. Access to Cisco.com is not mandatory for users of Essentials but will greatly enhance its capabilities. The following Essentials functions require access to Cisco.com, or provide enhanced features if you have access to Cisco.com:

- Software management—To include software images from Cisco when planning and performing upgrades.
- Availability—To produce stack decode of abnormal device reloads.
- Case management—To submit trouble tickets to Cisco.
- Contract Connection—to check status of service contracts.
- Inventory management—To produce Y2K compliance reports.

Getting Started

After you configure the devices, CiscoWorks Server, and client, you must invoke the CiscoWorks desktop through a web browser and log in to access Essentials.

After you have successfully logged into the server, the Login Manager dialog box changes to illustrate the major applications or functions installed. These applications or functions are organized in drawers. You can open a drawer and then view the various functions or open additional folders that hold more functions.

When the Essentials software is installed on the CiscoWorks Server, a new Resource Manager Essentials drawer is added to the CiscoWorks desktop. The Resource Manager Essentials drawer contains folders and related tasks for each of the Essentials functions. In addition, the Device Navigator and Case Management functions are added to the Management Connection drawer and a VPN Management Solutions drawer is added to support reports directly related to active virtual private network (VPN) devices.

RME Functions

All CiscoWorks and Essentials applications and services are provided and organized in drawers. When you open an application drawer, you will find functional group folders, and individual tasks. Open a folder, and you will find more functional group folders or individual tasks.

RME functionality can be found in one of these drawers:

- Resource Manager Essentials (main drawer)
- VPN Management Solutions (reports specific to VPN enabled devices)
- Management Connection (Case Management and Device Navigator)

Each of the RME applications provides a set of features that can be used to simplify and automate many network management tasks.

Within the Resource Manager Essentials drawer, tasks are divided into two categories: administrative tasks and user tasks.



Note

The tasks displayed in the Resource Manager Essentials drawer will vary, depending on the permissions assigned to your user ID. If you do not have permission to perform a particular task, the task will not show up in the navigation tree. Also, the order of tasks and folders may vary, depending on what other components of CiscoWorks are loaded.

User Tasks

User tasks (reports) are grouped into appropriate functional folders seen when the Essentials drawer is first opened (main level). For example, to run the user task of creating or viewing a detailed device report for a set of devices, select **Resource Manager Essentials > Inventory > Detailed Device Report**. User tasks are often performed by multiple people on a daily basis to view network information and manage and monitor Cisco devices.

Administrative Tasks

Administrative tasks are also grouped by major functions, but are located in similar folders under the Administration folder. For example, to see the devices within the Essentials inventory, select **Resource Manager Essentials > Administration > Inventory > List Devices**. Administrative tasks should be performed by a central person and should be performed only once when the application is first set up, or infrequently when major changes are made to the network.



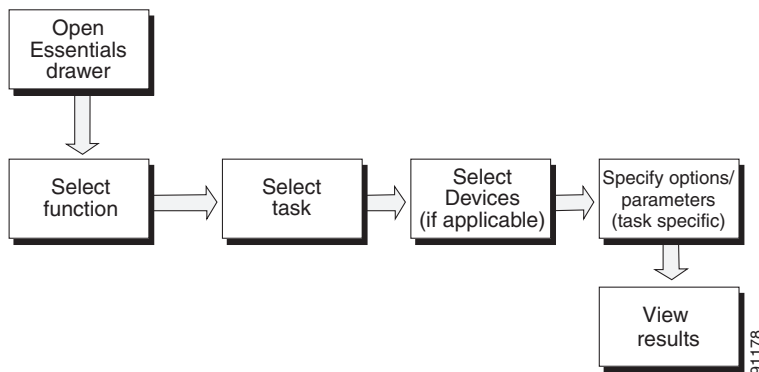
Tip

It is a good idea to open and close all Essentials folders to see where various tasks are located. Try closing folders after running a particular task to help navigation for the next task.

Essentials Task Usage Workflow

All Essentials tasks follow a simple task-oriented workflow (see [Figure 1-2](#)):

Figure 1-2 Essentials Task Usage Workflow



1. Select a function (e.g., syslog analysis, configuration management)
2. Select a task (e.g., standard report, compare configurations)
3. Select the devices to be included in the operation (if applicable)
4. Specify the desired options or parameters (depending on the task)
5. View the results (e.g., display report, check job output).

General System Configuration

You must define several system parameters on the server to use some Essentials features.

For example, if access to outside networks requires a proxy server, then you must define the proxy server address in Essentials in order to access Cisco.com from various Essentials functions.

If you want to use e-mail to automatically notify network administrators when certain tasks and jobs are completed, then you must define your Simple Mail Transfer Protocol (SMTP) server in Essentials.

If you wish to use rcp (instead of TFTP) to retrieve configuration files or software images, you must define the rcp username defined on the devices within Essentials.

You must also verify the default SNMP timeout and retry values that will be used to poll and collect information from all devices in the inventory. These values might need to be adjusted, depending on the size of your network and the number of devices that are being polled.

You must ensure that SNMP timeout values are higher than the average response time to most devices. In general, these values should be conversely related. For example, if you have a high timeout value, you should have a low number of retries or you could end up with long delays on the server waiting for SNMP messages to be processed.

To set up all these parameters, which are shared by many of the Essentials functions, follow these steps:

**Note**

The user must have the role of system administrator to perform this task.

- Step 1** Select **Resource Manager Essentials > Administration > System Configuration**.
- Step 2** Click each tab to configure the proxy, SNMP, SMTP, and rcp parameters.
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Supported Devices

Devices supported by this suite of applications can be found in these locations:

- In the CiscoWorks navigation tree. Select **Server Configuration > About the Server > Applications and Versions**.
- On Cisco.com. Select **Products and Services > Network Management CiscoWorks > CiscoWorks Resource Manager Essentials > Technical Details > Device Support Tables**.

Adding Functionality and Incremental Device Support

If you have Cisco.com access, you can go to the Essentials web page to download software enhancements and incremental device updates (IDU).

Consult the package readme files for additional information on installing new features and enhancements.

Before performing the scenarios in this document, be sure your administrator has set up the Essentials applications and performed the administrator tasks described in the installation guide. If, for example, the proxy URL is not set, you might be unable to complete Essentials tasks outside your network.

Time Zone Implementation

Many time zones are supported in Essentials. However, it is important to note that Essentials applications that have scheduling and reporting functions and that produce a time stamp will vary depending on:

- Server and client—Time stamps can differ between server and client if they are located in different time zones. (The client time zone is also called the local time zone.) The time stamp for the Essentials applications that have scheduling and reporting functions is based on server time.
- Platforms—Windows and UNIX servers support different time zones. They are not synchronized.
- Managed devices—These support a particular time zone set, which might be different than the time zone set supported by the client or server.
- Programming languages—Essentials applications are written in Perl, Java, and C++. You might see differences in menus and reports because each language uses a different set of time zone conversion libraries.