CHAPTER 1

CiscoWorks Overview

CiscoWorks network management software lets you monitor complex internetworks and facilitates in-depth network planning, troubleshooting, and analysis of Cisco devices. CiscoWorks is integrated with NetView for AIX, an IBM network and system management tool, as a suite of applications that are accessible through NetView for AIX menus.

CiscoWorks uses network maps that you can create either by manually entering information about devices or by using the NetView for AIX **Manage Objects** command. The NetView for AIX database can store and maintain multiple network maps. CiscoWorks also contains the Sybase relational database to store information about the devices displayed in the network maps. CiscoWorks uses the Simple Network Management Protocol (SNMP) to monitor and control any SNMP device on your network.

This overview is divided into the following parts:

- CiscoWorks functions—A description of what CiscoWorks can do for you
- CiscoWorks applications—A list and description of individual CiscoWorks tools
- CiscoWorks online help system—A description of the online help system

CiscoWorks Functions

CiscoWorks performs five kinds of functions:

- Fault management—Network problems can arise from a variety of sources, including devices, lines, interfaces, and environment. CiscoWorks applications help you identify and diagnose those problems by monitoring or checking information about devices and displaying the information. For example, you can display the network path between two devices to see the sequence of hops between the source and destination. You can compare alternative routing paths and decide if any changes in the paths would improve the routing process. You can also use the CiscoConnect application and Cisco Information Online (CIO) service to submit cases and look for current information about Cisco devices. CIO is Cisco's mechanism for contacting customer service personnel.
- Performance management—Optimal network performance depends on a variety of factors, such as the amount of traffic, the amount of traffic generated by specific protocols, and the number of packet errors. With CiscoWorks applications, you can monitor network performance by retrieving or polling information from multiple devices. You can use the acquired information to analyze and make performance-related decisions for your network. You can poll specific MIB variables on a device and display the information either in the form of a text summary or as a visual graph.

- Configuration management—Each network device contains configuration information that specifies how it is configured and how it performs with CiscoWorks. You can edit a device configuration file and store it in the database. Stored device configuration files can be compared with one another or with the current device configuration. In addition, you can retrieve, modify, and download specific configuration files. You can also download Cisco Internetwork Operating System (Cisco IOS) images to your devices. Depending on your needs, these functions can be automated so that a centralized administrator can maintain configuration files at remote sites. For example, by using the AutoInstall Manager application in CiscoWorks, you can upgrade all configuration files at remote sites in one step. The Configuration Snap-In Manager application allows you to apply a configuration command of a specific routing protocol to all routers using that protocol. A scheduler also allows flexibility of automating commands during off-peak hours. Users with a Terminal Access Controller Access Control System (TACACS) account can dial in to a remote router.
- Device management—A Sybase database with an inventory of network devices and associated information is helpful for retrieving needed information. CiscoWorks enables you to create a database with information about devices, individuals responsible for maintaining them, and associated locations. In addition, a database synchronization application, called Sync w/Sybase, allows you to match the entire device lists in each database or synchronize multiple devices from NetView's database with the CiscoWorks Sybase database. The CiscoView application also allows you to
  - Display a graphical representation of each network device
  - Display configuration and performance information for the device, its cards, and its ports
  - Perform minor troubleshooting tasks
  - Launch other Cisco network management applications
- Security management—By specifying the kinds of tasks that users with a valid password and login account can perform, you can limit access to CiscoWorks applications and network devices by unauthorized individuals. You can create your CiscoWorks environment to require a login to run specific CiscoWorks applications. This protection ensures that only authorized users can perform tasks such as configuring a router, deleting database information, or defining polling procedures. You can also apply the concept of *groups* (logical collections of user names) and *domains* (logical groupings of devices) to add another level of security. With this scheme, the ability of a user to exercise one or more features of a given CiscoWorks application is defined by the group and domain association.

CiscoWorks Applications

Table 1-1 describes the CiscoWorks applications and the network management tasks they can perform. They are listed alphabetically. In NetView for AIX, all CiscoWorks applications appear on one of the following menus: **Administer**, **Monitor**, **Diagnose**, or **Misc**.

Table 1-1 CiscoWorks Applications on NetView Menus

NetView Menu Location	Tasks
Administer> CW - Devices> CW - AutoInstall Manager	Remotely deploy a new router using a neighbor router. Perform AutoInstall tasks remotely by running CiscoWorks instead of a Telnet session.
Administer> CW - CiscoConnect	Creates detailed customer network profiles, allows for automatic submission of Cisco cases to the Technical Assistance Center (TAC), and allows you to check the status of existing cases and add information to them. CiscoConnect uses a Mosaic HTML-1.0 compliant browser and HTTPD server, sending and receiving e-mail over the Internet to Cisco.
Monitor> CiscoView	Allows you to view the front and rear panels of Cisco devices. You can display configuration and performance information for the device, its cards, and its ports. You can use this information to monitor network performance, quickly access vital device information, and troubleshoot minor network problems.
Administer> CW - Devices> CW - Configuration Manager	Access configuration files of local and remote Cisco Systems devices to analyze or edit as necessary. Compare the contents of two configuration files in the database, or compare the configuration currently running on a device with the configuration that represents the last **Database to Device** command you performed.
Administer> CW - Devices> CW - Configuration Snap-In Manager	Create and execute selected or custom UNIX commands on a device or group of devices at any time with Global Command Scheduler.
Monitor>Description> CW - Contacts	Obtain information about the contact for a specific device, including the complete name, phone number, e-mail address, title, location, and address of the person responsible for the operation of the device.
Administer> Cisco Devices> CW - Device Management	Create and maintain a database that holds a complete inventory of your network—hardware, software, release levels of operation components, individuals responsible for maintaining the devices, and associated locations. Enter or change data in the database tables for network devices, networks, interfaces, contacts, vendors, and so on.
Monitor> CW - Device Polling	Probe and extract information about the condition of your networks using a polling feature. Information acquired is stored in the database for further evaluation and analysis. Compare the relative performance and status of devices and interfaces on the network.
Administer> CW - Software Images> CW - Device Software Manager	Automate the upgrade of a system software or microcode image on a Cisco device.
Administer> CW - Security> CW - Domain Manager	Create groups of devices (called domains) that CiscoWorks applications can use to accomplish network management tasks such as security, configuration, and device polling.
Monitor> CW - Environmental Monitor	View the the interface and environmental status of Cisco AGS+ and Cisco 7000 routers including temperature and voltage statistics. This function is available on AGS+ routers running System Software Release 9.0 or later with an environmental monitor card running ENVM Microcode Version 2.0 or later.

NetView Menu Location	Tasks
Administer> CW - System> CW - Global Command Manager	Create, store, and execute system commands on a device or group of devices at any time with Global Command Scheduler.
Administer> CW - System> CW - Global Command Scheduler	Schedule commands or other jobs at regularly scheduled times using the **crontab** utility.
Monitor> CW - Health Monitor	View information about the status of a device, including buffers, CPU load, memory available, and protocols and interfaces being used. Enables you to display the Show Commands and Real-Time Graphs windows from the Health Monitor window.
Misc> CW - Login	Perform a generic login for all CiscoWorks applications that require user authentication so that you do not have to log into each application separately.
Misc> CW - Logout	Log out of secured CiscoWorks applications to ensure security for those applications with authority checking turned on.
Diagnose> Network Connectivity> CW - Path Tool	View and analyze the path between two devices. Perform analysis on the path to collect utilization and error data. Displays the devices encountered between the source and the destination device, the link speeds connecting these SNMP devices, and the interface names.
Monitor> CW - Polling Summary	Summarize the polling setup completed within Device Polling. Browse data, and stop and start polling.
Administer> CW - System> CW - Process Manager	Start, stop, and view status of CiscoWorks-related processes including Polling (**nmpolld**), CiscoConnect (**httpd**), System Log (**syslogd**), Sybase Server (**dataserver**), and TACACS (**xtacacsd**) daemons.
Monitor> CW - Real-Time Graphs	View device information such as the router health (buffer space, CPU load, environment, free memory, and security); interface health (bits per second, bytes, errors, packets per second, packets, and queues); and protocol traffic (IP, ICMP, SNMP, TCP, UDP, AppleTalk, DECnet IV, Novell, VINES, and XNS) using a grapher utility.
Administer> CW - Security> CW - SA Password	Change the password of CiscoWorks-internal user accounts.
Administer>CW - Security> CW - Security Manager	Create authority checking procedures to protect selected CiscoWorks applications and network devices from unauthorized individuals by requiring a login to use protected applications. This protection ensures that only users with a valid account and password can perform tasks such as configuring a router, deleting database device information, or defining polling procedures.
Diagnose> CW - Show Commands	Display device data about any SNMP device, including Cisco routers and communication servers. This data includes the software version, buffers, selected device interfaces, traffic mix, IP accounting checkpoint, ARP, and IP route. Emulates some of the EXEC **show** commands for Cisco routers.
Administer> CW - Software Images> CW - Software Inventory Manager	Update the Sybase database to include current device software and hardware status. Sorts device information according to platform and software image, and invokes Device Software Manager to update specific devices.
Administer> CW - Software Images> CW - Software Library Manager	Maintain a master storage area that contains a list of all available Cisco system software. These Cisco IOS software images are retrieved by the user with a variety of methods.

NetView Menu Location	Tasks
Misc> CW - Sync w/Sybase and **Misc> CW - Sync Selected**	Synchronize the NetView and Sybase databases. CiscoWorks maintains data in the Sybase database, whereas NetView maintains its own database. Sync w/Sybase ensures that device data from the NetView database is in the Sybase database (Sync w/Platform) and vice versa. Generally, synchronize the databases whenever new devices are added to your network. Use **Sync Selected** to add individual devices.
Misc> Sybase ESQR	Use Sybase ESQR utilities to run and print reports on any table created with the Device Polling application.
Administer> CW - Security> CW - TACACS Manager	Maintain the TACACS password file on UNIX hosts that act as TACACS servers. Create and update TACACS accounts and computer-generated passwords.
Misc> CW - Toolbox	Allows you to start CiscoWorks applications directly, without using the NetView menus. Click on an application's icon in the Toolbox window to start the application. You can also display help for each application from Toolbox.
Monitor> Workgroup Director	Monitor the status of any Cisco concentrator, switch, or network adapter card. Refer to the *Workgroup Director User Guide.*

Online Help System

CiscoWorks now includes online help that is similar to help systems supplied with Windows-based platforms. It replaces the *CiscoWorks User Guide*, which is no longer supplied with CiscoWorks.

Once you start the CiscoWorks online help system, you can jump to any topic within the system. For information on how to use the Help viewer, select **Help>How to Use Help** when the first help window appears.

Online help is available from several parts of CiscoWorks and NetView:

- NetView menus, so you can view help before starting a CiscoWorks application.
- CiscoWorks application Help menus which start the help system and display the Contents page for that application.
- CiscoWorks Toolbox application so you can view help before starting a CiscoWorks application.

CiscoWorks online help includes a **Find** button that allows you to do full-text searches within the help system. For information on how to do a search, select **Help>How to Use Help** when the first Help window appears.