



Overview

This document describes the Cisco IOS command-line interface, the Cisco IOS Configuration Engine, and how to work with the Cisco IOS file system, configuration files, and software images. This document also describes how to identify and resolve software problems related to the Cisco IOS software on the Cisco Industrial Ethernet 2000U Series (IE 2000U) and Connected Grid Switches, hereafter referred to as switch.

Features

This chapter provides a summary of the following features:

- [Cisco IOS Command Line Interface, page 1-1](#)
- [Cisco IOS Configuration Engine, page 1-1](#)
- [Cisco IOS File System, Configuration Files, and Software Images, page 1-2](#)
- [Troubleshooting, page 1-2](#)

Cisco IOS Command Line Interface

The Cisco IOS command-line interface (CLI) is the primary user interface used for configuring, monitoring, and maintaining Cisco devices. This user interface allows you to directly and simply execute Cisco IOS commands, whether using a switch console or terminal, or using remote access methods.

Basic features of the Cisco IOS CLI include Cisco IOS command modes, navigation and editing features, help features, and command history features.

Related Topics

[Chapter 2, “Using the Command-Line Interface”](#)

Cisco IOS Configuration Engine

The Cisco Configuration Engine is network management software that acts as a configuration service for automating the deployment and management of network devices and services. Each Configuration Engine manages a group of Cisco devices (switches and routers) and the services that they deliver, storing their configurations and delivering them as needed. The Configuration Engine automates initial configurations and configuration updates by generating device-specific configuration changes, sending them to the device, executing the configuration change, and logging the results.

The Configuration Engine supports standalone and server modes and has these Cisco Networking Services (CNS) components:

- Configuration service (web server, file manager, and namespace mapping server)
- Event service (event gateway)
- Data service directory (data models and schema)

Related Topics

[Chapter 3, “Configuring Cisco IOS Configuration Engine”](#)

Cisco IOS File System, Configuration Files, and Software Images

The flash file system is a single flash device on which you can store files. It also provides several commands to help you manage software image and configuration files. The default flash file system on the switch is named *flash:*.

Configuration files contain commands entered to customize the function of the Cisco IOS software. You can create a basic configuration file by using the setup program or by entering the **setup** privileged EXEC command. You can copy (*download*) configuration files from a TFTP, FTP, or RCP server to the running configuration or startup configuration of the switch. For example, you might want to restore a backed-up configuration file or download the same configuration file to several switches that have the same hardware configuration. You can copy (*upload*) configuration files from the switch to a file server by using TFTP, FTP, or RCP. You might perform this task to back up a current configuration file to a server before changing its contents so that you can later restore the original configuration file from the server.

Software image files contain the system software, the Cisco IOS code, and the embedded device manager software. You can download a switch image file from a TFTP, FTP, or RCP server to upgrade the switch software. You can replace the current image with the new one or keep the current image in flash memory after a download. You upload a switch image file to a TFTP, FTP, or RCP server for backup purposes. You can use this uploaded image for future downloads to the same switch or to another of the same type.

Related Topics

[Chapter 4, “Working with the Cisco IOS File System, Configuration Files, and Software Images”](#)

Troubleshooting

You can use the command-line interface (CLI) to identify and solve the following problems related to the Cisco IOS software on the Cisco IE 2000U switch:

- Software failure due to a corrupted or incorrect image file
- Lost or forgotten password
- Autonegotiation mismatches
- Disabled Power over Ethernet (PoE) ports
- Small form-factor pluggable (SFP) module security and identification errors
- Power supply temperature problems
- Connectivity problems
- Cabling problems

Debugging, crashinfo, and on-board-failure logging (OBFL) features enable you to collect information about the switch that helps Cisco technical support representatives to troubleshoot switch problems.

Related Topics

[Chapter 5, “Troubleshooting”](#)

