



Introduction

The *Cisco IOS Configuration Fundamentals and Network Management Command Reference* for Release 12.3 T provides detailed information about the Cisco IOS command-line interface (CLI) commands used to perform the following tasks:

- Navigate through the CLI by entering, exiting, and using CLI command and configuration modes
- Control terminal operating characteristics
- Configure user menus and banners
- Manage connections and perform basic system management tasks
- Enable the HTTP server and HTTP client on your routing device
- Manipulate files on your routing device using the Cisco IOS File System (IFS)
- Manage configuration files and customize the function of the Cisco IOS software
- Load and copy system images and microcode images
- Maintain router memory
- Modify the rebooting procedures of a router
- Configure basic file transfer services
- Monitor and troubleshoot a router
- Monitor a router and network using Cisco Discovery Protocol (CDP)
- Monitor a router and network Remote Monitoring (RMON)
- Monitor network performance and performing IP SLA management using the Cisco Service Assurance Agent (Cisco SAA)
- Configure Simple Network Management Protocol (SNMP) on your router
- Configure Cisco Networking Services (CNS)
- Configure the Cisco DistributedDirector
- Configure your router or switch as an XML Subscription Manager (XSM) server

For further information about performing these tasks, refer to the *Cisco IOS Configuration Fundamentals and Network Management Configuration Guide*, which is the companion document for the Command Reference.

Cisco IOS Integrated File System Command Syntax

Some commands in this book use URLs as part of the command syntax. URLs used in the Cisco IOS Integrated File System (IFS) contain two parts: a file system or network prefix, and a file identification suffix. The following tables list URL keywords that can be used in the *source-url* and *destination-url* arguments for all commands in this book. The prefixes listed below can also be used in the *filesystem* arguments in this book.

Table 1 lists common URL network prefixes used to indicate a device on the network.

Table 1 Network Prefixes for Cisco IFS URLs

Prefix	Description
ftp:	Specifies a File Transfer Protocol (FTP) network server.
rcp:	Specifies an remote copy protocol (rcp) network server.
tftp:	Specifies a TFTP server.

Table 2 lists the available suffix options (file identification suffixes) for the URL prefixes used in Table 1.

Table 2 File ID Suffixes for Cisco IFS URLs

Prefix	Suffix Options
ftp:	[[//[username[:password]@]location]/directory]/filename For example: ftp://network-config (<i>prefix://filename</i>) ftp://jeanluc:secret@enterprise.cisco.com/ship-config
rcp:	rcp:[[//[username@]location]/directory]/filename
tftp:	tftp:[[//location]/directory]/filename

Table 3 lists common URL prefixes used to indicate memory locations on the system.

Table 3 File System Prefixes for Cisco IFS URLs

Prefix	Description
bootflash:	Bootflash memory.
disk0:	Rotating disk media.
flash: [<i>partition-number</i>]	Flash memory. This prefix is available on all platforms. For platforms that do not have a device named flash: , the prefix flash: is aliased to slot0: . Therefore, you can use the prefix flash: to refer to the main Flash memory storage area on all platforms
flh:	Flash load helper log files.
null:	Null destination for copies. You can copy a remote file to null to determine its size.
nvr:	NVRAM. This is the default location for the running-configuration file.

Table 3 File System Prefixes for Cisco IFS URLs (continued)

Prefix	Description
slavebootflash:	Internal Flash memory on a slave RSP card of a router configured with Dual RSPs.
slavenvram:	NVRAM on a slave RSP card.
slaveslot0:	First PCMCIA card on a slave RSP card.
slaveslot1:	Second PCMCIA card on a slave RSP card.
slot0:	First PCMCIA Flash memory card.
slot1:	Second PCMCIA Flash memory card.
xmodem:	Obtain the file from a network machine using the Xmodem protocol.
ymodem:	Obtain the file from a network machine using the Ymodem protocol.

For details about the Cisco IFS, and for IFS configuration tasks, refer to the “Configuring the Cisco IOS File System” chapter in the *Cisco IOS Configuration Fundamentals Configuration Guide*.

Flash Memory File System Types

Cisco platforms generally use one of three different Flash memory file system types. Some commands are supported on only one or two file system types. This book notes commands that are not supported on all file system types.

Use [Table 4](#) to determine which Flash memory file system type your platform uses.

Table 4 Flash Memory File System Types

Type	Platforms
Class A	Cisco 7000 family, Cisco 12000 series routers, LightStream1010 switch
Class B	Cisco 1003, Cisco 1004, Cisco 1005, Cisco 2500 series, Cisco 3600 series, and Cisco 4000 series routers, and Cisco AS5200 access servers
Class C	Cisco MC3810 multiservice concentrators, disk0 of Cisco SC3640 System Controllers

Commands by Technology or Task

The *Cisco IOS Configuration Fundamentals and Network Management Configuration Guide* is organized by chapters describing the tasks associated with certain technologies or Cisco IOS features. The following list shows the commands associated with each chapter for your reference.

Part 1: Cisco IOS User Interfaces

Basic Command-Line Interface Commands

- **do**
- **disable**

- **editing**
- **enable**
- **end**
- **exit (EXEC)**
- **exit (global)**
- **full-help**
- **help**
- **history**
- **history size**
- **menu (EXEC)**
- **more <url> begin**
- **more <url> exclude**
- **more <url> include**
- **show <command> append**
- **show <command> begin**
- **show <command> exclude**
- **show <command> include**
- **show <command> redirect**
- **show <command> section**
- **show <command> tee**
- **show history**
- **terminal editing**
- **terminal full-help**
- **terminal history**
- **terminal history size**

SetUp

- **setup**

Terminal Operating Characteristics Commands

- **activation-character**
- **autobaud**
- **buffer-length**
- **databits**
- **data-character-bits**
- **default-value exec-character-bits**
- **default-value special-character-bits**
- **disconnect-character**

- **dispatch-character**
- **dispatch-machine**
- **dispatch-timeout**
- **escape-character**
- **exec-character-bits**
- **hold-character**
- **insecure**
- **length**
- **location**
- **lockable**
- **logout-warning**
- **notify**
- **padding**
- **parity**
- **printer**
- **private**
- **show whoami**
- **special-character-bits**
- **state-machine**
- **stopbits**
- **terminal databits**
- **terminal data-character-bits**
- **terminal dispatch-character**
- **terminal dispatch-timeout**
- **terminal download**
- **terminal escape-character**
- **terminal exec-character-bits**
- **terminal flowcontrol**
- **terminal hold-character**
- **terminal keymap-type**
- **terminal length**
- **terminal monitor**
- **terminal notify**
- **terminal padding**
- **terminal parity**
- **terminal-queue entry-retry-interval**
- **terminal rxspeed**
- **terminal special-character-bits**

- terminal speed
- terminal start-character
- terminal stopbits
- terminal stop-character
- terminal telnet break-on-ip
- terminal telnet refuse-negotiations
- terminal telnet speed
- terminal telnet sync-on-break
- terminal telnet transparent
- terminal terminal-type
- terminal txspeed
- terminal-type
- terminal width
- where
- width

Connection, Menu, and System Banner Commands

- banner exec
- banner incoming
- banner login
- banner motd
- banner slip-ppp
- clear tcp
- exec
- exec-banner
- exec-timeout
- lock
- menu clear-screen
- menu command
- menu default
- menu line-mode
- menu options
- menu prompt
- menu single-space
- menu status-line
- menu text
- menu title
- no menu

- **motd-banner**
- **name-connection**
- **refuse-message**
- **send**
- **service linenumbers**
- **vacant-message**

Cisco IOS HTTP Server, Client and Web Browser User Interface Commands

- **international**
- **ip http access-class**
- **ip http authentication**
- **ip http client connection**
- **ip http client password**
- **ip http client proxy-server**
- **ip http client secure-ciphersuite**
- **ip http client secure-trustpoint**
- **ip http client source-interface**
- **ip http client username**
- **ip http max-connections**
- **ip http path**
- **ip http port**
- **ip http secure-ciphersuite**
- **ip http secure-client-auth**
- **ip http secure-port**
- **ip http secure-server**
- **ip http secure-trustpoint**
- **ip http server**
- **ip http timeout-policy**
- **show ip http client connection**
- **show ip http client history**
- **show ip http client session-module**
- **show ip http server**
- **terminal international**

Part 2: File Management

Cisco IOS File System Commands

- **cd**
- **configure network**
- **copy**
- **delete**
- **dir**
- **erase**
- **erase bootflash**
- **file prompt**
- **file verify auto**
- **format**
- **ip rcmd remote-host**
- **mkdir**
- **more**
- **pwd**
- **rename**
- **rmdir**
- **show disk**
- **show file descriptors**
- **show file information**
- **show file systems**
- **squeeze**
- **undelete**
- **upgrade filesystem monlib**
- **verify**
- **write erase**
- **write terminal**

Configuration File Management Commands

- **archive**
- **archive config**
- **boot buffersize**
- **boot config**
- **boot host**
- **boot network**
- **clear parser cache**

- **configure confirm**
- **configure memory**
- **configure replace**
- **configure terminal**
- **configure overwrite-network**
- **hidekeys**
- **log config**
- **logging enable (config-archive-log)**
- **logging size (config-archive-log)**
- **maximum**
- **notify syslog**
- **parser cache**
- **parser config cache interface**
- **path**
- **service compress-config**
- **service config**
- **show archive**
- **show archive config differences**
- **show archive config incremental-diffs**
- **show archive log config**
- **show configuration**
- **show file**
- **show parser statistics**
- **show running-config**
- **show running-config map-class**
- **show startup-config**
- **time-period**

System Image and Microcode Commands

- **copy erase flash**
- **copy verify**
- **copy verify bootflash**
- **copy verify flash**
- **copy xmodem:**
- **copy ymodem:**
- **erase flash:**
- **microcode (7000/7500)**
- **microcode (7200)**

- **microcode (12000)**
- **microcode reload (7000/7500)**
- **microcode reload (7200)**
- **microcode reload (12000)**
- **more flh:logfile**
- **show flh-log**
- **show microcode**
- **xmodem**

Router Memory Commands

- **fsck**
- **memory scan**
- **memory-size iomem**
- **memory free low-watermark**
- **memory reserve critical**
- **partition**
- **show (Flash file system)**
- **show memory**
- **show memory scan**
- **snmp-server enable traps memory**
- **write memory**
- **write network**

Booting Commands

- **boot**
- **boot bootldr**
- **boot bootstrap**
- **boot system**
- **config-register**
- **confreg**
- **continue**
- **reload**
- **show boot**
- **show bootvar**
- **show reload**
- **show version**

Basic File Transfer Services Commands

- `async-bootp`
- `ip ftp passive`
- `ip ftp password`
- `ip ftp source-interface`
- `ip ftp username`
- `ip rarp-server`
- `ip rcmd domain-lookup`
- `ip rcmd rcp-enable`
- `ip rcmd remote-host`
- `ip rcmd remote-username`
- `ip rcmd rsh-enable`
- `ip rcmd source-interface`
- `mop device-code`
- `mop retransmit-timer`
- `mop retries`
- `rsh`
- `show async bootp`
- `tftp-server`
- `tftp-server system`

Part 3: Basic System Management

Basic System Management and Time Services Commands

- `absolute`
- `alias`
- `buffers`
- `buffers huge size`
- `calendar set`
- `clock calendar-valid`
- `clock read-calendar`
- `clock set`
- `clock summer-time`
- `clock timezone`
- `clock update-calendar`
- `downward-compatible-config`
- `hostname`

- **ip bootp server**
- **ip finger**
- **ip telnet source-interface**
- **ip tftp source-interface**
- **load-interval**
- **ntp access-group**
- **ntp authenticate**
- **ntp authentication-key**
- **ntp broadcast**
- **ntp broadcast client**
- **ntp broadcastdelay**
- **ntp clock-period**
- **ntp disable**
- **ntp master**
- **ntp max-associations**
- **ntp multicast**
- **ntp multicast client**
- **ntp peer**
- **ntp refclock**
- **ntp server**
- **ntp source**
- **ntp trusted-key**
- **ntp update-calendar**
- **periodic**
- **prompt**
- **scheduler allocate**
- **scheduler interval**
- **service decimal-tty**
- **service exec-wait**
- **service finger**
- **service hide-telnet-address**
- **service nagle**
- **service prompt config**
- **service tcp-small-servers**
- **service telnet-zero-idle**
- **service udp-small-servers**
- **show aliases**
- **show buffers**

- **show calendar**
- **show clock**
- **show idb**
- **show ntp associations**
- **show ntp status**
- **show registry**
- **show sntp**
- **sntp broadcast client**
- **sntp server**
- **time-range**

General Troubleshooting and System Message Logging Commands

- **attach**
- **clear logging**
- **clear logging xml**
- **diag**
- **exception core-file**
- **exception crashinfo file**
- **exception crashinfo buffersize**
- **exception dump**
- **exception linecard**
- **exception memory**
- **exception memory ignore overflow**
- **exception protocol**
- **exception region-size**
- **exception spurious-interrupt**
- **execute-on**
- **logging buffered**
- **logging buffered filtered**
- **logging buffered xml**
- **logging console**
- **logging console filtered**
- **logging console xml**
- **logging count**
- **logging facility**
- **logging filter**
- **logging history**
- **logging history size**

- **logging host**
- **logging linecard**
- **logging monitor**
- **logging monitor filtered**
- **logging monitor xml**
- **logging on**
- **logging rate-limit**
- **logging source-interface**
- **logging synchronous**
- **logging trap**
- **ping**
- **ping ip**
- **process cpu statistics limit**
- **process cpu threshold type**
- **snmp-server enable traps cpu**
- **service sequence-numbers**
- **service slave-log**
- **service tcp-keepalives-in**
- **service tcp-keepalives-out**
- **service timestamps**
- **show c2600 (2600)**
- **show c7200 (7200)**
- **show cls**
- **show context**
- **show controllers (GRP image)**
- **show controllers (line card image)**
- **show controllers logging**
- **show controllers tech-support**
- **show debugging**
- **show environment**
- **show gsr**
- **show gt64010 (7200)**
- **show logging**
- **show logging count**
- **show logging history**
- **show logging xml**
- **show memory**
- **show pci**

- **show pci hardware**
- **show processes**
- **show processes cpu**
- **show processes memory**
- **show protocols**
- **show stacks**
- **show subsystems**
- **show tcp**
- **show tcp brief**
- **show tech-support**
- **show usb controllers**
- **show usb device**
- **show usb driver**
- **show usb port**
- **show usb tree**
- **show usbtokens**
- **test flash**
- **test interfaces**
- **test memory**
- **trace (privileged)**
- **trace (user)**

Part 4: Network Management

SNMP Commands

- **add (bulkstat object)**
- **buffer-size (bulkstat)**
- **context**
- **enable (bulkstat)**
- **format (bulkstat)**
- **instance**
- **no snmp-server**
- **object-list**
- **poll-interval**
- **retain**
- **retry (bulkstat)**
- **schema**
- **show management event**

- **show snmp**
- **show snmp engineID**
- **show snmp group**
- **show snmp mib**
- **show snmp mib bulkstat transfer**
- **show snmp mib ifmib ifindex**
- **show snmp mib notification-log**
- **show snmp pending**
- **show snmp sessions**
- **show snmp user**
- **snmp ifmib ifalias long**
- **snmp mib bulkstat object-list**
- **snmp mib bulkstat schema**
- **snmp mib bulkstat transfer**
- **snmp mib community-map**
- **snmp mib notification-log default**
- **snmp mib notification-log default disable**
- **snmp mib notification-log globalageout**
- **snmp mib notification-log globalsize**
- **snmp mib persist**
- **snmp mib target list**
- **snmp-server access-policy**
- **snmp-server chassis-id**
- **snmp-server community**
- **snmp-server contact**
- **snmp-server context**
- **snmp-server enable informs**
- **snmp-server enable traps**
- **snmp-server enable traps aaa_server**
- **snmp-server enable traps atm pvc**
- **snmp-server enable traps atm pvc extension**
- **snmp-server enable traps atm pvc extension mibversion**
- **snmp-server enable traps atm subif**
- **snmp-server enable traps bgp**
- **snmp-server enable traps bulkstat**
- **snmp-server enable traps calltracker**
- **snmp-server enable traps cpu**
- **snmp-server enable traps dlsw**

- **snmp-server enable traps eigrp**
- **snmp-server enable traps envmon**
- **snmp-server enable traps flash**
- **snmp-server enable traps frame-relay**
- **snmp-server enable traps frame-relay subif**
- **snmp-server enable traps ip local pool**
- **snmp-server enable traps isdn**
- **snmp-server enable traps l2tun session**
- **snmp-server enable traps memory**
- **snmp-server enable traps mpls ldp**
- **snmp-server enable traps mpls traffic-eng**
- **snmp-server enable traps mpls vpn**
- **snmp-server enable traps ospf cisco-specific errors config-error**
- **snmp-server enable traps ospf cisco-specific errors shamlink**
- **snmp-server enable traps ospf cisco-specific retransmit**
- **snmp-server enable traps ospf cisco-specific state-change**
- **snmp-server enable traps pim**
- **snmp-server enable traps pppoe**
- **snmp-server enable traps repeater**
- **snmp-server enable traps rtr**
- **snmp-server enable traps snmp**
- **snmp-server enable traps srp**
- **snmp-server enable traps syslog**
- **snmp-server enable traps voice**
- **snmp-server engineID local**
- **snmp-server engineID remote**
- **snmp-server group**
- **snmp-server host**
- **snmp-server informs**
- **snmp-server location**
- **snmp-server manager**
- **snmp-server manager session-timeout**
- **snmp-server packetsize**
- **snmp-server queue-length**
- **snmp-server system-shutdown**
- **snmp-server tftp-server-list**
- **snmp-server trap-authentication**
- **snmp-server trap-authentication vrf**

- **snmp-server trap link**
- **snmp-server trap-source**
- **snmp-server trap-timeout**
- **snmp-server user**
- **snmp-server view**
- **snmp trap link-status**
- **transfer-interval**
- **url (bulkstat)**
- **write mib-data**

CDP Commands

- **cdp advertise-v2**
- **cdp enable**
- **cdp holdtime**
- **cdp run**
- **cdp timer**
- **clear cdp counters**
- **clear cdp table**
- **show cdp**
- **show cdp entry**
- **show cdp interface**
- **show cdp neighbors**
- **show cdp traffic**

RMON Commands

- **rmon**
- **rmon alarm**
- **rmon capture-userdata**
- **rmon collection history**
- **rmon collection host**
- **rmon collection matrix**
- **rmon collection rmon1**
- **rmon event**
- **rmon queuesize**
- **show rmon**
- **show rmon alarms**
- **show rmon capture**
- **show rmon events**

- **show rmon filter**
- **show rmon history**
- **show rmon hosts**
- **show rmon matrix**
- **show rmon statistics**
- **show rmon topn**

Cisco Networking Services Commands

- **clear cns image connections**
- **clear cns image status**
- **cli (cns)**
- **cns config cancel**
- **cns config connect-intf**
- **cns config initial**
- **cns config notify**
- **cns config partial**
- **cns config retrieve**
- **cns connect**
- **cns event**
- **cns id**
- **cns image**
- **cns image password**
- **cns image retrieve**
- **cns image retry**
- **cns inventory**
- **cns mib-access encapsulation**
- **cns notifications encapsulation**
- **cns template connect**
- **config-cli**
- **debug cns image**
- **discover (cns)**
- **ip address dynamic**
- **line-cli**
- **show cns config status**
- **show cns config connections**
- **show cns config outstanding**
- **show cns config stats**
- **show cns event connections**

- **show cns event gateway**
- **show cns event stats**
- **show cns event status**
- **show cns event subject**
- **show cns image connections**
- **show cns image inventory**
- **show cns image status**
- **template (cns)**

Embedded Event Manager

- **action cli**
- **action cns-event**
- **action counter**
- **action force-switchover**
- **action info**
- **action mail**
- **action policy**
- **action publish-event**
- **action reload**
- **action snmp-trap**
- **action syslog**
- **event application**
- **event cli**
- **event counter**
- **event interface**
- **event ioswdsysmon**
- **event manager applet**
- **event manager directory user**
- **event manager environment**
- **event manager history size**
- **event manager policy**
- **event manager run**
- **event manager scheduler policy suspend**
- **event manager scheduler script**
- **event manager session cli username**
- **event none**
- **event oir**
- **event snmp**

- **event syslog**
- **event timer**
- **set (EEM)**
- **show event manager directory user**
- **show event manager environment**
- **show event manager history events**
- **show event manager history traps**
- **show event manager policy available**
- **show event manager policy pending**
- **show event manager policy registered**
- **show event manager session cli username**

Command Scheduler Commands

- **cli**
- **debug kron**
- **kron occurrence**
- **kron policy-list**
- **policy-list**
- **show kron schedule**

DistributedDirector Commands

- **alias (boomerang)**
- **ip director cache size**
- **ip director cache refresh**
- **ip director cache time**
- **ip director default priorities**
- **ip director default weights**
- **ip director dfp**
- **ip director dfp security**
- **ip director drp rttprobe**
- **ip director drp synchronized**
- **ip director host priority**
- **ip director host weights**
- **ip director server availability**
- **ip director server port availability**
- **ip dns server**
- **ip drp domain**
- **server (boomerang)**

- **show ip director default**
- **show ip director dfp**
- **show ip drp boomerang**
- **snmp-server enable traps director**
- **ttl dns**
- **ttl ip**

VPN Device Manager (VDM) XSM Commands

- **clear xsm**
- **crypto mib topn**
- **show xsm status**
- **show xsm xrd-list**
- **xsm**
- **xsm dvdn**
- **xsm edm**
- **xsm history edm**
- **xsm history vdm**
- **xsm privilege configuration level**
- **xsm privilege monitor level**
- **xsm vdm**