



# Cadant C3 CLI Quick Reference

Release 3.0 Standard 2.0 March 2004

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## User Mode Commands

User mode is in effect when you log into the CMTS.

### enable

Enters privileged mode.

### exit

In user mode, terminates the console session.

### help

Provides a list of the available commands for the current user mode.

### llc-ping

Syntax: **llc-ping** {*macaddr*}[**continuous** | *n*]<**inter-ping-interval-in-seconds**>

Sends a series of MAC-level echo requests to the specified modem MAC address, and reports whether the CMTS received an echo response for each packet.

### logout

Closes the connection to the CMTS regardless of operating mode.

### ping

Syntax: **ping** {*ipaddr*}

Sends a series of 5 ICMP echo requests to the specified IP address, and reports whether the CMTS received an echo response for each packet.

### show

Displays information about the system.

#### show aliases

Displays any defined aliases for commands.

#### show arp

Equivalent to the **show ip arp** command without arguments.

#### show bootvar

Displays boot variables.

#### show calendar

Displays the date and time from the internal real time clock.

#### show clock

Displays the date and time from the system clock.

#### show clock timezone

Displays the current time zone and its offset from GMT.

#### show context

Displays recent startup and shutdown history.

#### show exception

Identical to **show context**.

#### show hardware

Displays a list of hardware installed in the CMTS with revision information and serial numbers where appropriate.

#### show history

Displays a list of recently entered commands.

#### show ip arp

Syntax: **show ip arp**[**cable 1/0**[.s] | **fastethernet 0/n**[.s] | **macaddr** | **ipaddr**]

Displays the associated MAC and IP addresses for interfaces or addresses, learned through ARP.

#### show ip igmp groups

Syntax: **show ip igmp groups**

Shows all IGMP groups held in the C3 IGMP database.

#### show ip igmp interface

Syntax: **show ip igmp interface** [**cable 1/0**[.s] | **fastethernet 0/n**[.s]]

Show all IGMP attributes for all IGMP-aware sub-interfaces or for a specific sub-interface.

#### show ip rip

Syntax: **show ip rip**[**database**]

Displays routing parameters.

#### show ip route

Syntax: **show iproute** [**connected** | **rip** | **static** | **summary**]

Shows IP-related information.

#### show ipc

Displays inter-process communications information.

#### show key chain

Displays the configured key chains.

#### show memory

Displays current and cumulative memory usage.

#### show ntp

Displays NTP server details.

#### show snmp

Displays SNMP activity counters.

#### show terminal

Displays information about the terminal session environment, including the terminal type and command history size.

#### show users

Displays active management sessions on the CMTS (serial or telnet).

#### show version

Displays current software version information.

### systat

Identical to the **show users** command.

### terminal

Changes the definition of the terminal type, width, or screen length.

#### terminal length

Syntax: **terminal length**{*n*}

Sets the number of lines that will be displayed before the user is prompted with MORE to continue terminal output.

#### terminal monitor

Syntax: **terminal** [**no**] **monitor**

Directs debugging output to the terminal window (the default is to send debug information only to the serial port).

#### terminal timeout

Syntax: **terminal** [**no**] **timeout** {*n*}

Automatically disconnect terminal sessions if left idle for more than the specified number of seconds (0 to 65500).

#### terminal vt100-colours

Syntax: **terminal**[**no**] **vt100-colours**

Enables or disables ANSI color output.

#### terminal width

Syntax: **terminal width**{*n*}

Sets the width of displayed output on the terminal.

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## Privileged Mode Commands

To access commands in privileged mode, use the **enable** command from user mode and enter a valid password.

### clear ip cache

Syntax: **clear ip cache**[*ipaddr*]

Clears the route cache for the specified IP address, or the entire cache if no address is specified.

### clear ip route

Syntax: **clear ip route**[**all** | **rip** | **static**]

Resets the specified routing table entries.

### clear screen

Erases the screen.

### configure

Syntax: **configure**{**terminal** | **memory** | **network** | **overwrite-network**}

Changes the command entry mode to global configuration mode.

### disable

Exits to user mode.

### exit

Close the CMTS connection (same action as **logout**).

### help

Displays a brief help listing.

### hostid

Displays the host ID of the C3.

### license

Syntax: **license**{**filename** | **keynfeature ARSVSnnnn** | **removen** | **tftp ipaddrfile**}

Enables or removes licensed features on the C3.

### logout

Closes the connection to the CMTS regardless of operating mode.

### no

Reverses many commands.

### show

In privileged mode, displays detailed information about the CMTS configuration.

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## File System Commands

### cd

Syntax: **cd**{*dir*}

Changes the working directory on the Compact Flash disk.

### chkdsk

Syntax: **chkdsk**{**flash**: | **filesys**} [**repair**]

Verifies that the file system is correct.

## copy

Syntax: **copy****{orig} {dest}**  
Duplicates the file *orig* and names it *dest*.

## delete

Syntax: **delete****{filename }**  
Removes the specified file from the Compact Flash module.

## dir

Syntax: **dir****[path]**  
Displays a list of all files in the current directory or the specified directory path.

## erase

Syntax: **erase****{c: | startup-configuration}**  
Erases the Flash disk or startup configuration, as specified.

## format

Syntax: **format c:**  
Completely erases a Compact Flash card and establishes a new file system on it.

## mkdir

Syntax: **mkdir****{dir}**  
Creates a new directory.

## more

Syntax: **more****{file} [crlf | binary]**  
Displays the contents of the specified file, one page at a time.

## pwd

Displays the name of the current working directory.

## rename

Syntax: **rename****{oldfile} {newfile}**  
Changes the name of the file called *oldfile* to *newfile* on the Compact Flash module.

## rmdir

Syntax: **rmdir****{dir}**  
Removes the specified directory.

## show c:

Syntax: **show c:[all | fileys]**  
Displays a complete file listing or optional information about the filesystem on the Compact Flash disk.

## show file

Syntax: **show file****{descriptors | systems}**  
Lists detailed internal information about file usage, depending on the keyword used.

## show flash

Syntax: **show flash****[all | fileys]**  
Displays detailed information about the Compact Flash disk, depending on the option used.

## write

Syntax: **write****[memory | terminal | networkfile | erase]**  
Writes the running configuration, or erases the startup configuration, based on the argument.

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## Cable Specific Commands

The following commands affect or display the status of attached cable modems.

### cable modem

Syntax: **[no] cable modem****{address} {max-hostsn | subscriber {auto}}**  
Sets user and QoS parameters.

### clear cable flap-list

Syntax: **clear cable flap-list** **{all | macaddr}**  
Clear the flap list for all modems or for the modems with the specified MAC address.

### clear cable modem

Syntax: **clear cable modem****{all | ipaddr | macaddr | offline} {reset | counters | delete}**  
Resets, removes, or deletes the specified cable modems.

### clear logging

Clears the local event log.

### show cable filter

Syntax: **show cable filter****[groupgid] [verbose]**  
Lists filters configured on the selected cable modems.

### show cable flap-list

Syntax: **show cable flap-list****[cablex/y | settings | sort-flap | sort-interface | sort-mac | sort-time | summary]**  
Displays the current contents of the flap list.

### show cable frequency-band

Syntax: **show cable frequency-band** **[index]**  
Displays the specified frequency group, or all frequency groups if no frequency group is specified.

### show cable group

Syntax: **show cable group****[n]**  
Displays the selected cable group and its load balancing configuration.

## show cable host

Syntax: **show cable host** **{ipaddr | macaddr}**  
Displays all CPE devices connected to the cable modem, specified by IP address or MAC address.

## show cable modem

Syntax: **show cable modem****[ipaddr | macaddr | cable 1/0 [upstreamn]] [detail | offenders | registered | summary | unregistered | columnscols|snr] [count] [verbose]**  
Displays information about the specified cable modem, or all registered cable modems if no modem is specified.

## show cable modulation-profile

Syntax: **show cable modulation-profile** **[advphy | n [type] [verbose]]**  
Displays information about the specified modulation profile, or all profiles if none is specified.

## show cable service-class

Syntax: **show cable service-class** **[verbose]**  
Displays defined service classes.

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## Environment Specific Commands

### calendar set

Syntax: **calendar set****{hh:mm:ss} [dd mmm yyyy]**  
Sets the internal CMTS real time clock to the specified time.

### clear access-list

Syntax: **clear access-list counters** **[n]**  
Clears the counters on the specified access list, or all access lists if no list is specified.

### clear arp-cache

Clears the ARP cache.

### clear ip igmp group

Syntax: **clear ip igmp group****[ipaddr]**  
Deletes the specified IGMP group from the multicast cache, or all IGMP groups if none is specified.

### clear mac-address

Syntax: **clear mac-address****{macaddr}**  
Deletes the learned MAC address entry from the table.

## clear mac-address-table

Deletes all learned entries from the MAC address table.

## clock set

Syntax: **clock set****{hh:mm:ss} [ddMMM yyyy]**  
Sets the CMTS clock to the specified time (and optionally, date).

## debug

Syntax: **[no] debug**  
Enables debugging output to the serial console (or telnet sessions if the **term monitor** command is used in a telnet session).

### debug all

Syntax: **[no] debug all**  
Provides all debugging information.

### debug cable dhcp-relay

Syntax: **[no] debug cable dhcp-relay**  
Enables or disables DHCP relay debugging.

### debug cable interface

Syntax: **[no] debug cable interface cable 1/0 {mac-address macaddr [macmask] | sid n} [verbose]**  
Enable or disable debugging on the selected cable modem or interface.

### debug cable mac-address

Syntax: **[no] debug cable mac-address {macaddr} [mask] [verbose]**  
Enables or disables debugging on the cable modems matching the specified MAC address.

### debug cable privacy

Syntax: **[no] debug cable privacy [mac-addressmacaddr] [level n]**  
Enables Baseline Privacy (BPI) debugging on the specified cable modem.

### debug cable range

Syntax: **[no] debug cable range**  
Enables ranging debug messages for all cable modems.

### debug cable registration

Syntax: **[no] debug cable registration**  
Enables modem registration request debug messages.

### debug cable sid

Syntax: **[no] debug cable sid {NNN} [verbose]**  
Enables debugging on the cable modem with the specified primary SID.

### debug cable tlvs

Syntax: **[no] debug cable tlvs**

Enables Type-Length Value (TLV) debugging messages.

### debug envm

Syntax: **[no] debug envm**

Enables environment debugging messages.

### debug ip

Syntax: **[no] debug ip [rip]**

Enables debuggin messages.

### debug snmp

Syntax: **[no] debug snmp**

Enables debug messages for SNMP.

### debug syslog

Syntax: **[no] debug syslog**

Enables debug messages for Syslog traffic.

### debug telnet

Syntax: **[no] debug telnet**

Enables debug messages for incoming telnet sessions.

## disable

Exits privileged mode, returning the session to user mode.

## disconnect

Syntax: **disconnect vty {id}**

Disconnects telnet sessions even if not fully logged in yet.

## login

Syntax: **login user{namestr | passwordstr}**

Changes the user level login name and password for telnet sessions.

## ping

Syntax: **ping{ipaddr}**

Pings the specified IP address.

## reload

Syntax: **reload[attime [reason] | cancel | in time [reason]]**

Restarts the CMTS (same behavior as setting **docs-DevResetNow** to **true**).

## script start

Syntax: **script start{file}**

Starts recording a command script to the specified file.

## script execute

Syntax: **script execute{file}**

Executes a recorded script in the specified file.

## script stop

Finishes recording a command script.

## send

Syntax: **send{all | console | vty0 | vty1 | vty2 | vty3} {message}**

Sends a text message to the specified CLI users.

## show access-lists

Syntax: **show access-lists[acl | interface matches | cable X/Y.Z matches| fastethernet X/Y.Z matches]**

Displays access-list information.

## show bridge

Displays information from the bridge MIB.

## show bridge-group

Syntax: **show bridge-group [n]**

Shows details of the specified bridge group, or all bridge groups if you specify no bridge group.

## show cli

Displays CLI information.

### show cli accounts

Shows login and password strings.

### show cli logging

Syntax: **show cli logging[sessionn]**

Shows global logging information.

## show configuration

See **show running-configuration**.

## show context

Displays context info about recent crashes.

## show controller

Syntax: one of:**show controller cable [x/y]show controller fastethernet [x/y]show controller loopback [interface number]**

Displays information about the specified interface (or all interfaces if none are specified).

## show debug

Shows the current debug state.

## show environment

Displays the current chassis power supply information, fan status, and temperature readings.

## show interfaces

Syntax: **show interfaces[cableX/Y] | [fastethernet X/Y] | [stats]**

Displays statistics for the specified interface (or all interfaces if none is specified).

## show interfaces cable...

Syntax: **show interfaces cable 1/0 [option]**

Displays detailed information about a specific cable interface.

### show interfaces cable 1/0 classifiers

Syntax: **show interfaces cable 1/0 classifiers [classid] [verbose]**

Displays all packet classifiers for the cable interface, or detailed information about a single classifier.

### show interfaces cable 1/0 downstream

Displays downstream statistics for the cable interface.

### show interfaces cable 1/0 modem

Syntax: **show interfaces cable 1/0 modem {sid}**

Displays the network settings for the cable modem with the specified SID.

### show interface cable 1/0 privacy

Syntax: **show interface cable 1/0 privacy [kek | tek]**

Displays privacy parameters.

### show interfaces cable 1/0 qos paramset

Syntax: **show interfaces cable 1/0 qos paramset[sfid] [verbose]**

Displays QoS parameters for the cable interface, or the specified service flow ID.

### show interfaces cable 1/0 service-flow

Syntax: **show interfaces cable 1/0 service-flow [sfid] [classifiers | counters | qos] [verbose]**

Displays service flow statistics for the cable interface.

### show interfaces cable 1/0 sid

Syntax: **show interfaces cable 1/0 sid [connectivity | counters | sid]**

Displays Service Flow information for all SIDs or optionally for a single SID.

### show interfaces cable 1/0 signal-quality

Syntax: **show interfaces cable 1/0 signal-quality [port]**

Displays signal quality for the specified upstream port (range **0** to **5**), or all ports if no port specified.

### show interfaces cable 1/0 stats

Displays interface statistics.

### show interfaces cable 1/0 upstream

Syntax: **show interfaces cable 1/0 upstream [port]**

Displays upstream information for all ports, or the specified port.

## show interfaces fastethernet X/Y

Syntax: **show interfaces fastethernet X/Y[stats]**

Displays detailed information about a specific Ethernet interface.

### show interfaces fastethernet X/Y stats

Displays a summary of interface statistics.

## show ip...

Syntax: **show ip[arp | cache | igmp | rip | route]**

Displays IP parameters.

### show ip cache

Displays the IP routing cache.

## show license

Displays a list of additional license features enabled on this CMTS.

## show logging

Displays event logging information.

## show mib

Syntax: **show mib ifTable**

Displays the current state of the ifTable MIB.

## show processes

Syntax: **show processes[cpu | memory]**

Displays information about running processes and CPU utilization.

## show reload

Displays a list of scheduled reload times.

## show running-configuration

Displays the running configuration on the console (CLI).

## show snmp-server

Displays the SNMP configuration as it is specified in the running configuration.

## show startup-configuration

Displays the startup configuration on the console (CLI).

## show tech-support

Prints a very detailed listing of C3 status for technical support purposes.

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## Global Configuration Commands

To access this mode, enter the **configure terminal** command from privileged mode.

### end / exit / Ctrl-Z

Exits configuration mode and returns to privileged mode.

### access-list

Defines and manages Access Control Lists (ACLs).

#### Standard ACL definition

Syntax: **[no] access-list**{*ACL-number*} {*permit* | *deny*} {*host ipaddr* | *any*}

A standard ACL allows or denies access to traffic to or from a particular IP address.

#### Extended IP definitions

Syntax: **[no] access-list**{*ACL-number*} {*permit* | *deny*} {*protocol*} {*options*}

Extended ACLs support very precise definitions of packets.

### alias

Syntax: **[no] alias**{*aliasname*} {*string*}

Creates an alias, which if entered as a command, executes the command *string*.

### arp

Syntax: **[no] arp**{*ipaddr*} {*macaddr*} [**cable 1/0**].*s*] [*vlan*] | **fastethernet 0/n**].*s*] [*vlan*]]

Creates or deletes a manual entry in the ARP table.

### banner

Syntax: **[no] banner**{*string*}

Sets the login banner for the CMTS to be the specified string.

### boot system flash

Syntax: **boot system flash** *path/filename*

Boots the system from an alternate image on the Compact Flash disk.

### boot system tftp

Syntax: **boot system tftp***filename ipaddr*

Boots the system from an alternate image with name *filename* on the TFTP server at the specified IP address.

### bridge

Syntax: **[no] bridge**{*n*}

Creates or removes a bridge group.

### bridge aging-time

Syntax: **[no] bridge aging-time** {*n*}

Sets the aging time (*n* = 0 to 1000000 seconds) for the learned entries in the Ethernet bridge or all bridge-groups.

### bridge <n> bind

Syntax: **[no] bridge**{*n*} **bind** {*fastethernet* | *cable*} {*A/B.C*} {*W*} [**native**] {*fastethernet* | *cable*} {*X/Y.Z*} {*V*}

Binds a sub-interface directly to another sub-interface using the specified VLAN tags.

### bridge find

Syntax: **bridge find***cable-modem {macaddr}*

Locates a cable modem in the bridge table by the source MAC address.

### cable filter

Syntax: **[no] cable filter**

Enables or disables filtering at the cable interface.

### cable filter group

Syntax: **[no] cable filter group** *group-id**index**index-id* [*dest-ipaddr*] | [*dest-mask ipmask*] | [*dest-portdest-port*] | [*ip-protocol <protocol>*] | [*ip-tostos-mask tos-value*] | [*match-action*accept | drop] | [*src-ipaddr*] | [*src-mask ipmask*] | [*src-portsrc-port*] | [*status activate* |deactivate] | [*tcp-status activate* | deactivate] | [*tcp-flags flag-maskflag-value*]

Creates a filter specification for registered cable modems and hosts attached to registered cable modems.

### cable frequency-band

Syntax: **[no] cable frequency-band** {*index*} {*band*} {*start start-freq*} {*stop stop-freq*}

Configures a frequency band with the given start and stop edge frequencies in Hz.

### cable group...

Syntax: **[no] cable group**{*id*} {*option*}

Manages cable groups.

#### cable group description

Syntax: **[no] cable group** *id* **description** {*str*}

Creates a textual description of this cable group that is displayed in the running configuration.

#### cable group frequency-index

Syntax: **cable group** *id* **frequency-index** {*freqIndex*}

Assigns a group of frequency bands to the given upstream group.

#### cable group load-balancing

Syntax: **[no] cable group** *id* **load-balancing** {*initial-numeric*}

Configures distribution of cable modems across grouped upstream channels.

### cable modem offline aging-time

Syntax: **cable modem offline aging-time** {*tt*}

Changes the offline aging time.

### cable modulation-profile

Syntax: One of:**cable modulation-profile**{*p*} {*default\_prof*}**cable modulation-profile**{*p*} {*IUC*} [*advphy*] [*feclen*] [*maxburst*] [*guard\_time*] [*modulation*] [*scram*] [*seed*] [*diff*] [*prelen*] [*lastcw*]**cable modulation-profile**{*p*} {*IUC*} [*fec\_t*] [*feclen*] [*maxburst*] [*guard\_time*] [*modulation*] [*scram*] [*seed*] [*diff*] [*prelen*] [*lastcw*]**no cable modulation-profile**{*p*}

Creates or changes a modulation profile.

### cable service class

Syntax: **[no] cable service class** {*name*} {*option*}

Defines a DOCSIS 1.1 upstream or downstream service class.

### cable submgmt

Syntax: **[no] cable submgmt**{*option*}

Enables or disables subscriber management.

#### cable submgmt cpe ip filtering

Syntax: **[no] cable submgmt cpe ip filtering**

Enables or disables CPE IP filtering.

#### cable submgmt default active

Syntax: **[no] cable submgmt default active**

Specifies that all modems and CPE devices are managed at the headend with the defined defaults.

#### cable submgmt default filter-group

Syntax: **cable submgmt default filter-group** [**cm** | **cpe**] [**upstream** | **downstream**] {*groupid*}

Assigns default filters.

#### cable submgmt default learntable

Syntax: **[no] cable submgmt default learntable**

Enables automatic subscriber address learning (use **no cable submgmt learntable** to disable).

#### cable submgmt default max-cpe

Syntax: **cable submgmt default max-cpe** {*n*}

Sets the maximum number of allowable CPE devices on any modem.

### cli logging

Syntax: **[no] cli logging**[*password* | *path dir* | *sizemaxsize*]

Controls CLI logging.

### cli account

Syntax: **[no] cli account**{*account-name*} [**password***pw* | **enable-password***privpw* | **secret-password***enpw*]

Sets the login name and passwords for access to the C3 command line.

### clock summer-time date

Syntax: **clock summer-time**{*timezone*} **date** {*start*} {*end*}

Creates a specific period of summer time (daylight savings time) for the specified time zone.

### clock summer-time recurring

Syntax: **clock summer-time**{*timezone*} **recurring** [*start end*]

Creates a recurring period of summer time for the specified time zone.

### clock timezone

Syntax: **[no] clock timezone**{*name*} {*offset*}

Creates a time zone.

### default cm subinterface

Syntax: **default cm subinterface** {*cable 1/0.s*}

Defines the sub-interface used for cable modem traffic until the cable modem receives an IP address from a DHCP server.

### default cpe subinterface

Syntax: **default cpe ipsubinterface** {*cable 1/0.s*}

Defines the sub-interface used as a source sub-interface for CPE traffic when that traffic has no VLAN tag or explicit mapping (using the **map-cpe** command).

### elog

Syntax: **eelog**{*ascii-dump* | *clear* | *off* | *on* | *size rows*}

Controls and displays the event log.

### enable password

Syntax: **[no] enable password**{*string*}

This command sets the initial password to the specified *string*.

### enable secret

Syntax: **[no] enable secret**{*string*}

Sets the privileged mode encrypted password to *string*.

## exception

Syntax: **[no] exception{auto-reboot | 3212-monitor {reboot | reset}}**

Enables automatic re-boot on crash, or when the C3 detects a problem on the cable interface.

## file prompt

Syntax: **file prompt{alert | noisy | quiet}**

Instructs the C3 to prompt the user before performing certain types of file operations.

## help

Displays a list of available commands and a brief description of each command.

## hostname

Sets the C3 host name.

## ip default-gateway

Syntax: **[no] ip default-gateway {ipaddr}**

Sets the default gateway for DHCP relay and TFTP routing operations.

## ip domain-name

Syntax: **ip domain-name{string}**

Sets the domain name for the CMTS.

## ip route

Syntax: **[no] ip route{ipaddrsubnet gateway} [dist]**

Adds a static route to the C3.

## ip routing

Syntax: **[no] ip routing**

Turns on IP routing in the C3.

## key chain

Syntax: **[no] key chain{name}**

Enters keychain configuration mode for defining router authentication keychains.

## end

Exits configuration mode to privileged mode.

## exit

Exits keychain configuration mode to configuration mode.

## help

Displays a brief help message.

## key-id

Syntax: **[no] key-id{n}**

Enters individual key configuration mode for the specified key (valid range: **0** to **255**).

## line

Syntax: **line{console | vty startend}**

Configures default CLI parameters for the current user.

## login user

Syntax: **[no] login user[namestring1] | [password string2]**

Changes the user level login name and password for vty (telnet) -sessions.

## logging buffered

Syntax: **[no] logging buffered [severity]**

Enables local logging of events in a circular buffer.

## logging on

Syntax: **[no] logging on**

Enables all syslog messages, traps, and local logging.

## logging severity

Syntax: **[no] logging severity {level} {local | no-local} {trap | no-trap} {sys | no-sys} {vol | no-vol}**

Controls event generation by the severity level of the event.

## logging syslog

Syntax: **[no] logging syslog[hostipaddr | level]**

Enables syslog logging to the specified IP address, or set the syslog logging severity level (**0** to **7**).

## logging thresh

Syntax: **logging thresh{all | at events1 | belowevents2 | intervalsec | none}**

Limits the number of event messages generated.

## logging trap

Syntax: **[no] logging trap[level]**

Enables or disables transmission of SNMP traps.

## logging trap-control

Syntax: **[no] logging trap-control {val}**

Sets the value of the docsDevCmtsTrapControl MIB to enable or disable CMTS SNMP traps.

## mib ifTable

Syntax: **mib ifTable{index} {down\_ifAdmin | test\_ifAdmin | up\_ifAdmin} {disable\_ifLinkTrap | enable\_ifLinkTrap} {alias}**

Sets or overrides the admin state of interfaces.

## no community

Syntax: **no community{string}**

Automatically removes and cleans up the community entry, users, groups, and views for the specified community.

## ntp

Syntax: **[no] ntp{serveripaddr} [interval int | delete | disable | enable | master]**

Configures C3 time and date using an external NTP server.

## router rip

Syntax: **[no] router rip**

Enter router configuration mode.

## snmp-access-list

Syntax: **[no] snmp-access-list{list-name} {deny | permit} {any | host {host-name | ipaddr} [portport] | subnet mask}**

Creates an SNMP access list.

## snmp-server

The **snmp-server** commands are designed around the SNMPv3 framework.

### snmp-server view

Syntax: **[no] snmp-server view {view-name} {mib-family} [mask mask] {excluded | included}**

Creates or adds to an existing SNMP MIB view. A view defines which MIB sub-tree (MIB families) can be acted upon by an SNMP transaction.

### snmp-server group

Syntax: **[no] snmp-server group {group-name} {v3 {auth | noauth | priv} | v2c | v1} [notifyview] [read view] [writeview]**

Defines one or more transaction types a user can perform: read transaction, write transaction, or notify transaction.

### snmp-server user

Syntax (v1, v2c): **[no] snmp-server user{username} {group} {v2c | v1} [snmp-access-listlist]** Syntax (v3): **[no] snmp-server user{username} {group} v3 [{auth {md5 | sha} passwd [priv des56 passwd2]} | enc] [snmp-access-listlist]**

### snmp-server notif-sec-model

Syntax: **[no] snmp-server notif-sec-model {security-identifier} {user-name-string} {v1 | v2c | v3} {security-model {v1 | v2 | usm {auth | priv}}}**

Defines a notification security model entry with identifier *security-identifier* and assigns this model to user *user-name-string*.

### snmp-server host

Syntax: **[no] snmp-server host {notification-identifier} {security-identification} {ipaddr | hostname} {traps | informs} [udp-port port [timeouttime [retriesretry]]]**

Defines a host for each notification target or receivers.

### snmp-server enable

Syntax: **snmp-server enable{informs | traps}**

Enables configured traps or informs.

### snmp-server disable

Syntax: **snmp-server disable informs {v2c | v3} orsnmp-server disabletraps {v1 | v2c | v3}**

Disables configured traps or informs.

### snmp-server engineid

Syntax: **snmp-server engineid remote{string} {user-name} [auth {md5 | sha}]**

Configures a remote SNMPv3 engineID.

### snmp-server community

Syntax: **[no] snmp-server community {community\_name} {access} [snmp-access-list name] [viewmib-family {included | excluded}]**

Allows SNMP access to the C3 from the specified IP address and subnet using the specified community name.

### snmp-server contact

Syntax: **[no] snmp-server contact {contact-string}**

Sets the contact string for the C3.

### snmp-server location

Syntax: **[no] snmp-server location {location-string}**

Sets the system location string.

### snmp-server notif-entry

Syntax: **[no] snmp-server notif-entry {name} {tag-valuetag} {trap | inform}**

Configures or deletes a notification entry in the snmpNotifyTable.

### snmp-server community-entry

Syntax: **[no] snmp-server community-entry {index} {community-name} {user-name}**

Configures or deletes an entry in the snmpCommunityEntry table.

---

# Interface Configuration Commands

Use Interface configuration mode to configure the cable and Ethernet interfaces.

## interface

Syntax: **[no] interface***{type} {number}*  
Enter Interface configuration mode.

### Common Interface Subcommands

The following subcommands may be used on both cable and Ethernet interfaces.

#### bridge-group

Syntax: **[no] bridge-group***{n}*  
Assign this interface to the specified bridge group.

#### description

Syntax: **[no] description***{text}*  
Sets the textual description of the interface.

#### encapsulation dot1q

Syntax: **[no] encapsulation dot1q** *{n}* **[native | encrypted-multicast]**  
Assigns a VLAN tag to this sub-interface.

#### end

Exit interface configuration mode.

#### exit

Exit configuration mode.

#### help

Display help about the Interface configuration system.

#### interface

Syntax: **interface***{cable | fastethernet | X/Y}*  
Changes to a different interface configuration mode without having to exit the current configuration mode first.

#### ip access-group

Syntax: **[no] ip access-group***{access-list-number} {in | out}*  
Associates an ACL with a specific interface.

#### ip directed-broadcast

Syntax: **[no] ip directed-broadcast**  
Enable or disable directed subnet broadcast forwarding on this interface.

#### ip I2-bg-to-bg routing

Syntax: **[no] ip I2-bg-to-bg-routing**  
Enables or disables IP routing of IP packets received at a sub-interface where the sub-interface must act as an IP gateway to other C3 sub-interfaces or devices connected to other C3 sub-interfaces.

#### ip rip authentication

Syntax: one of:**[no] ip rip authentication key-chain {name}****[no] ip rip authentication mode {text | md5}**  
Controls the RIP authentication method used on this interface.

#### ip rip cost

Syntax: **ip rip cost***{m}*  
Manually overrides the default metric for this interface.

#### ip rip default-route-metric

Syntax: **[no] ip rip default-route-metric** *{m}*  
Sets the metric for default routes originated from this interface.

#### ip rip receive

Syntax: **[no] ip rip receive***{versionversions}*  
Controls which versions of RIP packets the C3 accepts.

#### ip rip send

Syntax: **[no] ip rip send***{versionv}*  
Controls which version of RIP packets the C3 transmits.

#### ip rip v2-broadcast

Syntax: **[no] ip rip v2-broadcast**  
Enables or disables broadcasting of RIPv2 updates.

#### ip source-verify

Syntax: **[no] ip source-verify** **[subif]**  
Enables or disables source IP verification checks on this interface.

#### ip verify-ip-address-filter

Syntax: **[no] ip verify-ip-address-filter**  
Enables or disables RFC1812 IP address checks on this interface.

#### load-interval

Syntax: **load-interval***{time}*  
Sets the time, in seconds, to use as an interval for load averaging on this interface.

#### management access

Syntax: **[no] management access**  
If specified for an interface, this command blocks all telnet or SNMP access through this interface.

#### show

Syntax: **show***{item}*  
Displays parameters for the specified item.

#### shutdown

Syntax: **[no] shutdown**  
Disables the interface.

#### snmp trap link-status

Enable link traps.

## interface fastethernet

Syntax: **interface fastethernet** *{0/y[.s]}*  
Enters configuration mode for the specified FastEthernet interface.

#### duplex

Syntax: **duplex***{auto | full | half}*  
Sets the duplex mode of the interface.

#### ip address

Syntax: **ip address***{ipaddr ipmask}* **[secondary]**  
Sets the interface IP address and subnet mask.

#### ip broadcast-address

Syntax: **ip broadcast-address***{ipaddr}*  
Sets the broadcast address for this interface.

#### ip igmp-proxy

Syntax: **[no] ip igmp-proxy****[non-proxy-multicasts]**  
Enables or disables IGMPv2 proxy operation on this sub-interface.

#### mac-address (read-only)

Syntax: **mac-address***{aaaa.bbbb.cccc}*  
Shows the MAC address of the interface.

#### speed

Syntax: **speed***{10 | 100 | 1000}*  
Sets the speed of the interface, in Mbps.

## interface cable

Syntax: **interface cable** **1/0[.s]**  
Enters configuration mode for the cable interface.

#### cable

Cable interface commands are grouped as follows:

### Cable commands (general)

#### cable dci-upstream-disable

Syntax: **cable dci-upstream-disable** *{macaddr} {enable | disable periodn}*  
Instructs the addressed modem to immediately enable its upstream transmitter, or to disable it for the stated period.

#### cable encrypt

Syntax: **cable encrypt****shared-secret** *[string]*  
Activates MD5 authentication on DOCSIS configuration files.

#### cable flap-list

Syntax: **[no] cable flap-list***{aging | insertion-time | miss-threshold | size} {default | value}*  
Sets parameters for the flap list.

#### cable insertion-interval

Syntax: **cable insertion-interval** *{automatic | t}*  
Sets the insertion interval.

#### cable map-advance

Syntax: **cable map-advance***{dynamic [length] | static[length]}*  
Modifies the plant length for each upstream channel when invoked with a length parameter.

#### cable max-ranging-attempts

Syntax: **cable max-ranging-attempts** *{k}*  
Sets the maximum number of ranging attempts allowed for modems.

#### cable privacy

Syntax: **[no] cable privacy***{option}*  
Configures Baseline Privacy for the cable modems on this interface.

#### cable shared-secret

Syntax: **[no] cable shared-secret** *[string]* **[encrypted]**  
Sets the shared secret to the specified *string*.

#### cable sid-verify

Syntax: **[no] cable sid-verify**  
Enables accepting DHCP packets whose SID is zero.

#### cable sync-interval

Syntax: **cable sync-interval***{k}*  
Sets the interval, in milliseconds, between SYNC messages.

#### cable ucd-interval

Syntax: **cable ucd-interval***{k}*  
Sets the interval, in milliseconds, between UCD messages.

#### cable utilization-interval

Syntax: **cable utilization-interval** *{time}*  
Sets the utilization monitoring interval for US/DS channels.

#### ip igmp

Syntax: **ip igmp***{enable | disable}*  
Enable or disable active IGMP message processing on cable sub-interface, whether the processing is in active or passive mode depending on whether the cable sub-interface can “see” a proxy fastethernet subinterface.

#### ip igmp last-member-query-interval

Syntax: **ip igmp last-member-query-interval** *{val}*  
Sets the interval between IGMP group specific query messages sent via the downstream to hosts.

#### ip igmp query-interval

Syntax: **ip igmp query interval** *{val}*  
Sets the interval between host specific query messages.

#### ip igmp query-max-response-timeout

Syntax: **ip igmp query-max-response-timeout** *{val}*  
Sets the maximum interval, in 1/10 second increments, the C3 waits for a response to an IGMP query.

### ip igmp robustness

Syntax: **ip igmp robustness**{*val*}

Variable for tuning the expected packet loss on a sub-net.

### ip igmp verify ip-router-alert-option

Syntax: **[no] ip igmp verify ip-router-alert-option**

Enables or disables checking of the IP Router Alert option in IGMP v2 reports and leaves.

### ip igmp version

Syntax: **ip igmp version**{*val*}

The version of IGMP running on the sub-interface.

### ip-broadcast-echo

Syntax: **[no] ip-broadcast-echo**

Controls whether IP or ARP broadcasts received on the cable interface are broadcast back downstream.

### ip-multicast-echo

Syntax: **[no] ip-multicast-echo**

Controls whether multicasts received on the cable interface are broadcast back downstream.

### encapsulation dot1q

Syntax: **[no] encapsulation dot1q** {*n*} [**native**]

Specifies the VLAN ID and encapsulation type for data leaving this interface (if **native** not specified) and the type of encapsulation and VLAN ID for data that is accepted by this interface.

### I2-broadcast-echo

Syntax: **[no] I2-broadcast-echo**

Enables echoing of layer 2 broadcast packets to the downstream.

### I2-multicast-echo

Syntax: **[no] I2-multicast-echo**

Enables echoing of layer 2 multicast packets to the downstream.

### map-cpes

Syntax: **[no] map-cpes**{**cable 1/0.s**}

Maps all CPE attached to a modem to the specified cable sub-interface.

## Cable commands (DHCP)

### cable dhcp-giaddr

Syntax: **[no] cable dhcp-giaddr** {**policy** | **primary**}

Replaces the giaddr field in DHCP packets.

### cable helper-address

Syntax: **[no] cable helper-address** {*ipaddr*} [**cable-modem** | **host**]

Updates the giaddr field with the relaying interface primary IP address (unless **cable dhcp-giaddr policy** is active) and then unicasts the DHCP Discover or Request packet to the specified IP address.

### ip dhcp relay

Syntax: **[no] ip dhcp relay**

Enables the C3 to modify DHCP requests from cable modems or hosts attached to cable modems by updating the **giaddr** field with the WAN port IP address.

### ip dhcp relay information option

Syntax: **[no] ip dhcp relay information option**

Enables modification of DHCP requests from modems or hosts attached to modems to include the modem's address in the option 82 field.

### ip dhcp relay validate renew

Syntax: **[no] ip dhcp relay validate renew**

When this command is active, the destination IP address in a Renew message is validated against the configured helper address for cable sub-interface.

## cable downstream

The following downstream commands are available.

### cable downstream annex

Syntax: **cable downstream annex** {**a** | **b** | **c**}

Sets the MPEG framing format.

### cable downstream channel-width

Syntax: **cable downstream channel-width** {**6mhz** | **8mhz**}

Sets the downstream channel width.

### cable downstream frequency

Syntax: **cable downstream frequency** {*hz*}

Sets the downstream center frequency in Hz.

### cable downstream interleave-depth

Syntax: **cable downstream interleave-depth** {*I*}

Sets the FEC interleaving.

### cable downstream modulation

Syntax: **cable downstream modulation** {**256qam** | **64qam**}

Sets the downstream modulation type.

### cable downstream power-level

Syntax: **cable downstream power-level** {*dBmV*}

Sets the downstream power level to the specified value.

### cable downstream rate-limit

Syntax: **no cable downstream rate-limit** or **cable downstream rate-limit token-bucket** **shaping** [**auto-delay** [**auto-value** *val*]] | **max-delay***delay* | **packet-delay** [**packets-limit** *lim*]]

Changes the type of rate limiting from moving average traffic shaping to "token-bucket" limiting, or to a combination of both.

## cable upstream

Syntax: **cable upstream**{*n*}

Enters configuration mode for the selected upstream.

### cable upstream channel-type

Syntax: **cable upstream** *n* **channel-type**{**atdma** | **scdma** | **tdma** | **tdma&atdma**} [**modulation-profile** *n*]

Selects the desired type of channel operation.

### cable upstream channel-width

Syntax: **cable upstream** *n* **channel-width** {*w*}

Sets the upstream channel width.

### cable upstream concatenation

Syntax: **[no] cable upstream** *n* **concatenation**

Enables or disables concatenation (concatenation support is on by default).

### cable upstream data-backoff

Syntax: **cable upstream** *n* **data-backoff**{**automatic** | **startend**}

Set the random backoff window for data.

### cable upstream description

Syntax: **[no] cable upstream** *n* **description**{*string*}

Sets the textual description of this upstream to *string*.

### cable upstream differential-encoding

Syntax: **[no] cable upstream** *n* **differential-encoding**

Enable differential encoding.

### cable upstream fec

Syntax: **[no] cable upstream** *n* **fec**

Enable Forward Error Correction (FEC).

### cable upstream fragmentation

Syntax: **[no] cable upstream** *n* **fragmentation**[**forced-multiple-grant** *nn*] |

**forced-piggyback** *mm*]

Configures fragmentation for the specified interface.

### cable upstream frequency

Syntax: **cable upstream** *n* **frequency**{*k*}

Sets the upstream frequency in Hz.

### cable upstream group-id

Syntax: **cable upstream** *n* **group-id**{*g*}

Specify the upstream group that the upstream belongs to.

### cable upstream high-power-offset

Syntax: **cable upstream** *n* **high-power-offset**{*offset*}

Specifies the maximum allowed input power to the CMTS, in dB, above the nominal input power.

### cable upstream ingress-cancellation

Syntax: **[no] cable upstream** *n* **ingress-cancellation**

Turns on upstream ingress cancellation for the specified upstream channel.

### cable upstream load-interval

Syntax: **cable upstream** *n* **load-interval** {*time*}

Sets the time, in seconds, to use as an interval for load averaging.

### cable upstream low-power-offset

Syntax: **cable upstream** *n* **low-power-offset**{*offset*}

Specifies the minimum allowed input power to the CMTS, in dB, below the nominal input power.

### cable upstream minislot-size

Syntax: **cable upstream** *n* **minislot-size**{*m*}

Specifies the minislot-size in multiples of time-ticks of 6.25 microsecond each tick.

### cable upstream modulation-profile

Syntax: **cable upstream** *n* **modulation-profile**{*p*}

[**channel-type** *type*]

Selects the modulation profile for this upstream.

### cable upstream periodic-maintenance-interval

Syntax: **cable upstream** *n* **periodic-maintenance-interval** {*p*}

Sets the periodic ranging interval.

### cable upstream plant-length

Syntax: **cable upstream** *n* **plant-length**{*l*}

Sets the initial maintenance region size to allow for timing variation across modems separated by this distance.

### cable upstream power-level

Syntax: **cable upstream** *n* **power-level**{*p*} [**fixed** | **auto**]

Sets the target input power level to be used by the CMTS when it ranges modems.

### cable upstream pre-equalization

Syntax: **[no] cable upstream** *n* **pre-equalization**

Enable cable modem pre-equalization.

### cable upstream range-backoff

Syntax: **cable upstream** *n* **range-backoff**{**automatic** | **startend**}

Sets the random backoff window for initial ranging.

### cable upstream rate-limit

Syntax: **[no] cable upstream** *n* **rate-limit**[**use-token-bucket-for-cos**]

Enables rate limiting.

### cable upstream scrambler

Syntax: **[no] cable upstream** *n* **scrambler**

Enables the upstream scrambler.

### cable upstream short-periodic-maintenance-interval

Syntax: **cable upstream** *n* **short-periodic-maintenance-interval** {*p*}

Sets the ranging interval used after a parameter change (timing offset, power, etc.).

### **cable upstream shutdown**

Syntax: **[no] cable upstream *n* shutdown**

Disables the upstream.

### **cable upstream snr-timeconstant**

Syntax: **cable upstream *n* snr-timeconstant{*tc*}**

Sets the amount of averaging of the upstream signal-to-noise (SNR) over time.

### **cable upstream status**

Syntax: **cable upstream *n* status{activate | deactivate}**

Activates or deactivates the upstream channel.

---

## **Router Configuration Mode**

Use the global command **router rip** to enter router configuration mode.

### **auto-summary**

Syntax: **[no] auto-summary**

Enables automatic network number summarization.

### **default-information**

Syntax: **[no] default-information originate [always]**

Controls whether the C3 advertises its default route (ie **0.0.0.0/0**) to neighbors.

### **default-metric**

Syntax: **[no] default-metric{*m*}**

Sets the metric for advertised routes. This is primarily a way to override the default metric for advertised routes. When a connected or static route gets redistributed into an RIP domain, the C3 needs to start to advertise the route to the neighbor in RIP responses.

### **multicast**

Syntax: **[no] multicast**

Enables or disables multicast of routing updates.

### **network**

Syntax: **[no] network{*ipaddr*} [wildcard] [disable]**

Enables routing on a network.

### **passive-interface**

Syntax: **[no] passive-interface {cable 1/0.s | default | fastethernet 0/*n.s*}**

Suppress routing updates on an interface.

### **redistribute connected**

Syntax: **[no] redistribute connected [metric *m*]**

Controls whether the C3 advertises subnets belonging to sub-interfaces and are not under configured network scopes.

### **redistribute static**

Syntax: **[no] redistribute static [metric *m*]**

Controls whether the C3 advertises static routes.

### **timers basic**

Syntax: **timers basic{*interval*} {*invalid*} {*flush*}**

Sets various router-related timers.

### **validate-update-source**

Syntax: **[no] validate-update-source**

Enables or disables sanity checks against received RIP updates, based on the source IP address of the packet.

### **version**

Syntax: **version{1 | 2}**

Sets the version of RIP to use over all C3 interfaces.

## **Cadant C3 CLI Quick Reference**

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Document number: ARSVD00783  
Release 3.0 Standard 2.0  
March 2004