

ION System

C4221 Remotely Managed Network Interface Device (NID)

CLI Reference

Part Number 33694
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Contacts

Lantronix Corporate Headquarters

48 Discovery
Suite 250
Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Online: <https://www.lantronix.com/technical-support/>

Sales Offices

For a current list of our domestic and international sales offices, go to the Lantronix web site at www.lantronix.com/about/contact.

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Revision History

Date	Rev.	Description
1/12/18	A	Initial release for C4221 FW v 2.0. The C4221 requires IONMM v1.3.19 or above.
8/31/23	B	FW 2.0.7: add support for forwarding MACSec and LACP protocols (requires IONMM v1.4.3). Add set and show stp config commands (requires IONMM FW v1.4.4). IONMM v1.4.4 adds support for older versions of C4221 that didn't have L2CP or STP. (If the version is < v2.0.3 then the Web & CLI turned off L2CP & STP. If the version is = v2.0.3 then the Web & CLI turned off STP. If the version is = 2.0.4 then L2CP & STP are both turned on in the Web & CLI). Add L2CP command which requires IONMM v1.4.3. Add set and show stp config commands requiring IONMM v1.4.4. Add pause frame config options for Gigabit in Auto-Negotiation mode. C4221 no longer participates in STP by default. STP frames can be forwarded through the C4221. Reduced extra LLDP frames being sent out ports. LLDP frames are only sent out ports with path back to the IONMM. IPMC snooping no longer enabled by default. IONMM should be upgraded to 1.5.0. Initial Lantronix rebrand. See the Release Notes for important information

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About This Manual

This manual describes the USB and Telnet Command Line Interface (CLI) commands available for ION System chassis Remotely Managed Multiport NID operations. This manual is for experienced network administrators who are responsible for configuring and maintaining the ION system. This manual assumes that the ION C4221 is properly installed and functioning. See the *ION C4221 Install Guide* for installation and setup topics.

The CLI offers the most comprehensive set of management features. The CLI is used during the initial setup (set ip, etc.) and troubleshooting, but can also be used for day-to-day management (device management, firmware upgrades, managing security features, etc.).

This manual documents these models:

Model	Description
C4221-4848	ION Chassis Card, two 10G SFP+ ports, one 10/100/10000 Base-T copper port Remotely-Managed NID

IMPORTANT: CLI commands are case sensitive. Enter the CLI commands as shown. To execute the commands described in this manual, you must press the Enter key after the command has been entered.

Documentation Conventions

The conventions used within this manual for commands/input entries are described in the table below.

Table 1: Documentation Conventions

Convention	Meaning
Boldface text	Indicates the entry must be made as shown. For example: ipaddr=<addr> In the above, only ipaddr= must be entered exactly as you see it, including the equal sign (=).
< >	Arrow brackets indicate a value that must be supplied by you. Do not enter the symbols < >. For example: ipaddr=<addr> In place of <addr> you must enter a valid IP address.
[]	Indicates an optional keyword or parameter. For example: go [s=<xx>] In the above, go must be entered, but s= does not have to be.
{ }	Indicates that a choice must be made between the items shown in the braces. The choices are separated by the symbol. For example: state={enable disable} Enter state=enable or state=disable .
" "	Indicates that the parameter must be entered in quotes. For example: time=<"value"> Enter time="20100115 13:15:00" .
>	Indicates a selection string. For example: Select File > Save . This means to first select/click File then select/click Save .

Related Manuals

A printed Documentation Postcard is shipped with each C4221. For Lantronix Drivers, Firmware, Manuals, Product Notifications, Warranty Policy & Procedures, etc. go to the Lantronix [Technical Resource Center](#). Note that this manual provides links to third part web sites for which Lantronix is not responsible.

The ION system and related manuals are listed below.

1. ION C4221 Install Guide, 33692
2. ION C4221 Web User Guide, 33693
3. ION C4221 CLI Reference, 33694 (this manual)
4. ION Management Module (IONMM) User Guide, 33457 and Install Guide, 33420
5. IONMM-232 Install Guide, 33725
6. ION219-x 19-Slot Chassis Installation Guide, 33412
7. ION106-x Six Slot Chassis User Guide, 33658
8. IONPS-A-R1 Power Supply User Guide, 33614
9. IONPS-D-R1 DC Power Supply Install Guide, 33707
10. SFP manuals (model specific) (see Lantronix' [SFP webpage](#))
11. Release Notes (software version specific)

Note: This manual may provide links to third part web sites for which Lantronix is not responsible. Information in this document is subject to change without notice. All information was deemed accurate and complete at the time of publication. This manual documents the latest software/firmware version. While all examples may not display the latest version number, all of the descriptions and procedures reflect the latest software/firmware version, noted in the [Revision History](#) on page 2. Note: Some Documentation may have Transition Networks named or pictured. Transition Networks was acquired by Lantronix in August 2021.

Commands Effect on Stored Files

IMPORTANT



Certain CLI commands affect important stored files. Doing a reboot, restart or upgrade of the IONMM, a power restart of the chassis, or a reset to factory remove temporary files (e.g. configuration backup files, Syslog file). A Factory Reset also removes the permanent settings (e.g. configuration files, HTTPS certification file, SSH key).

These CLI commands can cause a loss of files:

- **reboot** - warm start the system.
- **reset** - reset factory configuration.


See the specific command description for additional information.


Command Line Editing

This section describes how to enter CLI commands.

A CLI command is a series of keywords and arguments. Keywords identify a command, and arguments specify configuration parameters.

Display Similar Commands

At the command line, you can use the  key or the **?** key to show available commands in a category of commands after entering a part of the command.

For example, use the  key to enter part of the command (**show ether** in this example) to display all of the available commands that start with **show ether**. The commands display in a single row.

```
C1|S7|L1D>show ether <tab key>
config      loopback      security      statistics  tdr
```

Use the **?** key after a partial CLI command entry to display all of the available commands that start with **show ether**, but in a single column:


```
C1|S7|L1D>show ether ?
config
```


Partial Keyword Lookup

If you terminate a partial keyword with a question mark, alternatives that match the initial letters are provided. (Remember to not leave a space between the command and question mark.) For example “**s?**” shows all the keywords starting with “s.”

Recall Commands

To recall recently-entered commands from the command history, perform one of the optional actions below:

Ctrl-P or **Up arrow** () key: Recall commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall successively older commands.

Ctrl-N or **Down arrow** () key: Return to more recent commands in the history buffer after recalling commands with Ctrl-P or the Up arrow key. Repeat the key sequence to recall successively more recent commands.

Keystroke Commands

The table below shows the optional keystrokes available to edit command lines (*indicates HyperTerm support, ** indicates command prompt support, *** indicates both HT and command prompt support by this keystroke).

Table 2: Command Line Editing

Capability	Keystroke	Purpose
Move the command line around to make changes or corrections	Ctrl-B *** or left (←) arrow key ***	Move the cursor back one character
	Ctrl-F *** or right (→) arrow key ***	Move the cursor forward one character
	Ctrl-A ***	Move the cursor to the beginning of the command line
	Ctrl-E ***	Move the cursor to the end of the command line
Recall commands from the buffer and paste them in the command line	Ctrl-Y ***	Recall the most recent entry in the buffer
	Ctrl-T **	Transpose the character to the left of the cursor with the character located at the cursor
	Ctrl-Y **	Recall the most recent entry in the buffer
Delete entries (if you make a mistake or change your mind)	Delete key *** or Backspace key ***	Erase the character to the left of the cursor
	Ctrl-D ***	Delete the character at the cursor
	Ctrl-K ***	Delete all characters from the cursor to the end of the command line
	Ctrl-U *** or Ctrl-X ***	Delete all characters from the cursor to the beginning of the command line
	Ctrl-W ***	Delete the word to the left of the cursor
	Esc D **	Delete from the cursor to the end of the word
Capitalize or lowercase words or capitalize a set of letters	Esc C *	Change case from capital to lower-case (or lower-case to capital) at the cursor
Redisplay the current command line if the switch unexpectedly sends a message to your screen	Ctrl-L *** or Ctrl-R ***	Redisplay the current command line (reverse-i-search)

System Commands

The following are basic system level commands. These commands are used to show configuration / mode, show help, reboot the system, reset the configuration, and other basic functions.

Password for Login / Access

Syntax: Password: **private**

Description: The default device CLI password. CLI entry requires a successful password entry.

```
Example: Password:
Login incorrect
login: ION
Password:private

Hello, this is ION command line (version 1.00).
Copyright 2009 Transition Networks.

AgentIII C1|S1|L1D>
```

In order to control the NIDs via a USB interface, the command line prompt must be showing the location of the module to be managed. Use the procedure below to access the NID and login via USB connection.

1. Start the terminal emulator program (e.g., HyperTerminal).
2. When the emulator screen displays, press **Enter**. The login prompt displays. If your system uses a security protocol (e.g., RADIUS, SSH, etc.), you must enter the login and password required by that protocol.
3. Type **ION** (all upper case) and press **Enter**. The password prompt displays. If a “Login incorrect” message displays, ignore it.
4. Type your password. The default is **private** (all lower case).
5. Press **Enter**. The HyperTerminal command line prompt displays (C1|S3|L1D>).
6. Enter CLI commands to set up, configure, operate, and maintain the NID.

Log Out (Quit)

Syntax: **quit**

Description: Exit the CLI mode and return to the CLI command line prompt. You must log in again.

```
Example : C1|S3|L1D>q
login:
```

Clear the Screen

Syntax: **cls**

Description: Clears the screen.

Go Back to IONMM

Syntax: **home**

Description: Sets the command prompt back to the location of the IONMM.

Example: If the IONMM card is in chassis 1/slot 1 and the following command was entered.

```
C1|S13|L0AP1|L1P2|L2D>home
```

The new command line prompt would be

```
C1|S1|L1D/>
```

Go to Another Location

Syntax: **go** [**c**=<vv>] [**s**=<ww>] [**l1ap**=<xx>] [**l2ap**=<yy>] <zz>

Description: Defines the location (card or port) where subsequent commands are destined for. This information displays on the command prompt line as the location where the command will be executed.

where:

- c** = optional; number (1–16) of the chassis where the card/port is located
- s** = optional; number (1–32) of the slot in the chassis where the card/port is located. **Note:** if the chassis parameter (c=) is specified, you must specify a slot number.
- v** = optional; port number (1–16) on a level 1 device used to attach to a level 1 device
- w** = optional; port number (1–16) on a level 2 device used to attach to a level 2 device
- x** = mandatory; specifies the port or device where subsequent commands are destined for. Valid choice are:
 - **l1d** – indicates the level 1 device
 - **l1p**=<port#> – port number (1–16) on a level 1 device
 - **l2d** – indicates the level 2 device
 - **l2p**=<port#> – port number (1–16) on a level 2 device
 - **l3d** – indicates the level 3 device
 - **l3p**=<port#> – port number (1–16) on a level 3 device

Usage:

go [**c**=<1-16>] [**s**=<1-32>] [**l1ap**=<1-15>] [**l2ap**=<1-15>] (**l1p**=<1-5>|**l2p**=<1-15>|**l3p**=<1-15>|**l1d**|**l2d**|**l3d**)
for a Slide in card, or

go [**c**=<0-16>] [**s**=<0-32>] [**l1ap**=<1-15>] [**l2ap**=<1-15>] (**l1p**=<1-5>|**l2p**=<1-15>|**l3p**=<1-15>|**l1d**|**l2d**|**l3d**)
for a Standalone card.

Example 1: The following command would cause all subsequent commands to be executed for the device in slot 5 of chassis 1.

```
C1|S1|L1D>go s=5 l1d
```

The new command prompt would be:

```
C1|S5|L1D>
```

Example 2: The following **go** command would cause all subsequent commands to be executed for port 2 on the device in slot 5.

```
C1|S5|L1D>go 11p=2
```

The new command prompt would be:

```
C1|S5|L1P2>
```

Example 3: The following **go** command would cause all subsequent commands to be executed for a remote device connected to port 2 of a chassis-resident module in slot 5.

```
C1|S5|L1D>go 11ap=2 12d
```

The new command prompt would be:

```
C1|S5|L1AP2|L2D>
```

Help (?)

Syntax: ?

Description: Display help for CLI commands by typing a question mark (?). Typing a ? at the command line prompt displays a list of base commands (show, set, etc.). To display a list of the options for a particular command or parameter, type the command/parameter then a space and then type ?. See [Appendix A](#) for CLI messages.

Examples: The following will display a list of all base commands.

```
Agent III C1|S2|L1D>?
  add      Add a ACL condition
  backup   Backup all modules.
  cat      Show the content of the FILES
  cd       Change to another directory
  clear    Clear all counters of the specified Ethernet port
  cls      Clear the screen.
:
  start    Start TDR test of the specified Ethernet port
  stat     Show topology information of a chassis.
  tftp     Get a file from a TFTP server.
  update   Update firmware database
  upgrade  Upgrade firmware modules
Agent III C1|S2|L1D>
```

While the following will display a list of all the second entries for the **add** command.

```
C1|S2|L1D>add ?
  acl
  fwddb
  soam
  vlan
  vlan-db
```

By typing a ? after each parameter in a command string you can see what are the options, either for what the next parameter is or for what options must be specified following an equal sign. The following displays that there are two options available after ACL.

```
C1|S2|L1D>add acl ?
  condition
  rule
```

While the following ? command displays the next parameter that follows condition.

```
C1|S2|L1D>add acl condition ?
  type
```

And finally, the following ? command shows the options that can be specified for type=.

```
C1|S2|L1D>add acl condition type ?
  macaddr
  ipv4
  ipv4addrrange
  ipv4network
  tcpport
```

```

tcpportrange
udpport
udpportrange
icmp

```

List

Syntax: **list**

Description: Displays all available command line commands.

Example (partial list):

```

Cl|S5|L1D>list
add acl condition type=(macaddr|ipv4addr|ipv4addrrange|ipv4network|tcpport|tcp
portrange|udpport|udpportrange|icmp) srcdst=(src|dst) oper=(equal|notequal) value=VAL
add acl condition type=(macaddr|ipv4addr|ipv4addrrange|ipv4network|tcpport|tcp
portrange|udpport|udpportrange|icmp) srcdst=(src|dst) oper=(equal|notequal) value=VAL
index=COND_ID
add acl rule index=RULE_ID table=(raw|filter|nat|mangle) chain=(prerouting|input
|forward|output|postrouting) prio= PRIO policy=(accept|drop|trap) [traprate=TRAPRATE]
:
:
show vlan-db config
start ether tdr test
start https certificate
stat
tftp get iptype=(ipv4|dns) ipaddr=ADDR remotefile=RFILE [localfile=LFILE]
tftp put iptype=(ipv4|dns) ipaddr=ADDR localfile=LFILE [remotefile=RFILE]
tftp upgrade iptype=(ipv4|dns) ipaddr=ADDR remotefile=RFILE
update firmware-db file=FILENAME
upgrade module
Cl|S5|L1D>

```

Process Snapshot

Syntax: **ps**

Description: Displays a snapshot of the current memory processes. For example:

```
Agent III C1|S2|L1D>ps
  PID  Uid      VmSize  Stat  Command
    1  root          312  S    init
    2  root          SWN  [ksoftirqd/0]
    3  root          SW   [watchdog/0]
:::
  703  root          SWN  [jffs2_gcd_mtd8]
  734  root          508  S    upgradeManager -d -l 1
  744  root         1868  S    snmpd -Lsd -c /etc/snmpd.conf
  745  root          244  S <  bpd_linux
  750  root          244  S    pure-ftpd (SERVER)
  753  root         1420  S    entityManager -Lsd
  755  root         3028  S    subagent
  756  root          248  S    xxdp
  757  root          288  S    agent_pm
  759  root         3028  S    subagent
  760  root         3028  S    subagent
  761  root         3028  S    subagent
  762  root         3028  S    subagent
  765  root         3028  S    subagent
  799  root          356  S    radiuscd 0
  814  root          284  S    sntpcd
  832  root         1400  S    lighttpd -f /etc/lighttpd.conf
  841  root          176  S    telnetd -p 17800
  845  root          176  S    telnetd -l /usr/local/bin/a3cli
  847  root          268  S N  monitor /usr/local/bin/taskmonitor.conf /agent3/conf/
  851  root          224  S    init
  854  root         3028  S    subagent
:::
  865  root         3028  S    subagent
  871  root          276  S    syslogd -m 0 -L -O /var/log/sys.log -l 6 -s 200 -b 1
  872  root         3028  S    subagent
  879  root          460  S    tacplus
2566  root         2584  S    /usr/local/bin/a3cli --
2595  root          304  S    sh -c ps
2596  root          284  R    ps
Agent III C1|S2|L1D>
```

Show Current Directory

Syntax: **pwd**

Description: Displays the current directory.

Example: C1|S7|L1D>**pwd**
 /

Reboot

Syntax: **reboot**

Description: Performs a reboot (warm start the system) of the device in the command line prompt.

Example:

```
Agent III C1|S2|L1D>reboot ?
reboot Warm start the system.
Agent III C1|S2|L1D>reboot?
<cr>
Agent III C1|S2|L1D>reboot
Warning: this command will restart system, connection will be lost and please
lo
gin again!
Agent III C1|S2|L1D>
```

Messages

The HyperTerminal connection closes and the Windows Taskbar Notification area displays the message "A network cable is unplugged!."

To recover:

1. Close the Windows Taskbar message.
2. Disconnect and close HyperTerminal.
3. Re-open HyperTerminal.
4. Re-open the HT session.
5. Log back in to the C4221.

Reset to Factory Default Configuration

Syntax: **reset** <all | factory >

Description: Resets a card to its factory default configuration.



Warning: doing a reboot or restart of the IONMM or NID will cause all configuration backup files to be lost and the USB or Telnet session to drop. This operation deletes **all** configuration information that was saved in the IONMM, including the IP address you assigned to the IONMM or NID.

Example:

```
Agent III C1|S2|L1D>reset ?
  all
  factory
  uptime
Agent III C1|S2|L1D>reset all ?
  ports
Agent III C1|S2|L1D>reset all ports ?
  counters
Agent III C1|S2|L1D>reset all ports counters ?
  <cr>
Agent III C1|S2|L1D>reset all ports counters
Agent III C1|S2|L1D>reset factory ?
  <cr>
Agent III C1|S2|L1D>reset factory
Warning: this command will restart the specified card, connection will be lost!
Agent III C1|S2|L1D>reset uptime ?
  <cr>
Agent III C1|S2|L1D>reset uptime
Error: System is busy, please retry this command later!
Agent III C1|S2|L1D> reset uptime
Error: Cannot reset uptime on this card!
Agent III C1|S2|L1D>
```

The HyperTerminal connection closes and the Windows Taskbar Notification area displays the message "A network cable is unplugged!."

To recover:

1. Close the Windows Taskbar message.
2. Disconnect and close HyperTerminal.
3. Re-open HyperTerminal.
4. Re-open the HT session.
5. Log back in to the NID.

Doing a reboot, restart or upgrade of the IONMM, a power restart of the chassis, or a reset to factory remove temporary files (e.g. configuration backup files, Syslog file). A Factory Reset also removes the permanent settings (e.g. configuration files, HTTPS certification file, SSH key).

Set System Contact, Location, and Name

Syntax: `set system name=NAME location = LOC contact = CONTACT`

Description: Defines the identifying name of the device. The name can be alphabetic, numeric or a combination, but cannot contain any space characters.

Example:

```
Agent III C1|S2|L1D>set system ?
  contact
  location
  name
Agent III C1|S2|L1D>set system contact tsintecgsupport
Agent III C1|S2|L1D>set system location ?
  LOC
Agent III C1|S2|L1D>set system location StPaulMN
Agent III C1|S2|L1D>set system name ?
  NAME
Agent III C1|S2|L1D>set system name EngSWDev
Agent III C1|S2|L1D>show system information
system descr:                The C4221-4848 of the Transition network
s ION (Chassis Generation III) platform products
system objectID:            1.3.6.1.4.1.868.2.5.1802661751
system uptime:              00:12:08
system contact:             tsintecgsupport
system name:                EngSWDev
system location:           StPaulMN
Agent III C1|S2|L1D>
```

The system name default is C4221-4848 (case sensitive – all capitals). The **show system information** command displays the system contact, location, name, and other system descriptive information.

The CLI prompt (>) displays an editable name prefix based on the “System Name” field. You can add or modify the System Name via the CLI. For example, if the name was “lab”, the IONMM “System Name” is carried through to every prompt/card that you are logged into (e.g., lab C1|S3|L1D>, lab C1|S5|L1D>, lab C1|S8|L1D>, etc.).

If you don’t enter a name in the “System Name” field, the CLI prompt default remains (e.g., C1|S3|L1D>, C1|S5|L1D>, C1|S8|L1D>, etc.). So if you enter “Agent” in the System Name field, the CLI prompt would display as Agent C1|S3|L1D>, Agent C1|S5|L1D>, Agent C1|S8|L1D>, etc., but the module name in the Stack and other places in the ION Web interface would still show IONMM.

Note: Once you change the system name, that name must be used to re-login.

Show Card Information

Syntax: **show card info**

Description: Displays the system information for the IONMM or slide-in card.

Example: (C4221 in slot 2):

```
Agent III C1|S2|L1D>show card info
System name:        C4221-4848
Uptime:            03:52:29
CPU MAC:            00-c0-f2-58-3e-48
Port number:        3
Serial number:      1013
Config mode:        software
Software:           2.0.0.5
Bootloader:         1.2.0
Hardware:           0.0.1
Agent III C1|S2|L1D>
```

Note: This command does not work for the Power Supply.

Show Card Type

Syntax: **show cardtype**

Description: Displays the ION system device's card type (model number).

Example: (C4221 in slot 2):

```
Agent III C1|S2|L1D>show cardtype
Card type:                    C4221-4848
Agent III C1|S2|L1D>
```

Show Circuit-ID

Syntax: **show circuit id**

Description: Displays the Circuit ID for a port.

Example:

```
Agent III C1|S2|L1P1>show circuit-ID
Circuit-ID:           CCC
Agent III C1|S2|L1P1>go l1p=2
Agent III C1|S2|L1P2>show circuit-ID
Circuit-ID:
Agent III C1|S2|L1P2>go l1p=3
Agent III C1|S2|L1P3>show circuit-ID
Circuit-ID:
Agent III C1|S2|L1P3>
```

Set Circuit-ID

Syntax: **set circuit id**

Description: Configures the Circuit ID for a port.

Example:

```
Agent III C1|S2|L1D>set circuit-ID DDD
Error: this command should be executed on a port!
Agent III C1|S2|L1D>go l1p=1
Agent III C1|S2|L1P1>set circuit-ID DDD
Agent III C1|S2|L1P1>show circuit-ID
Circuit-ID:           DDD
Agent III C1|S2|L1P1>
```

Show Chassis Information

Syntax: **stat**

Description: Displays information about all slide-in modules installed in the chassis and all standalone modules connected to the remote slide-in modules, and their ports (Example 1 below).

Example: (C4221 in slot 2):

```
Agent III C1|S0|L1D>stat
ION stack
  Chassis -- BPC
    [ 1] IONMM
        Port 1
        Port 2
    [ 2] C4221-4848
        Port 1
        Port 2
        Port 3
    [ 3] C4110-4848
        Port 1
        Port 2
    [ 4] C3221-1040
        Port 1
        Port 2
        Port 3
    [ 5] C3100-4040
        Port 1
        Port 2
    [ 6] C3110-1040
        Port 1
        Port 2
    [16] C3231-1040
        Port 1
        Port 2
        Port 3
    [23] IONPS-A-R1
        Temperature Sensor
        Voltage Sensor
        Power Sensor
        Fan
Agent III C1|S0|L1D>
```

Show System Information

Syntax: **show system information**

Description: Displays current ION Chassis slot information.

Example: Display the default system information:

```
Agent III C1|S2|L1D>show system information
system descr:                    The C4221-4848 of the Transition networks
ION (Chassis Generation III) platform products
system objectID:                1.3.6.1.4.1.868.2.5.1802661751
system uptime:                  01:06:02
system contact:                 Lantronix(techsupport@lantronix.com)
system name:                    C4221-4848
system location:                10900 Red Circle Drive  Minnetonka, MN 5
5343 USA
Agent III C1|S2|L1D>
```

Note: You cannot **show system information** on the Power Supply.

Show Device Description

Syntax: **show device description**

Description: Displays current ION device description.

Example: Display the default system information:

```
Agent III C1|S2|L1D>show device description
Device description:
Agent III C1|S2|L1D>set device description ?
  CIRCUIT
Agent III C1|S2|L1D>set device description C4221-CIRCUIT
Agent III C1|S2|L1D>show device description
Device description: C4221-CIRCUIT
Agent III C1|S2|L1D>set device description 123!@#
Agent III C1|S2|L1D>show device description
Device description: 123!@#
Agent III C1|S2|L1D>set device description 123!@# 789
% Unknown command.
Agent III C1|S2|L1D>show device description
Device description: 123!@#
Agent III C1|S2|L1D>
```

Set Device Description

Syntax: **set device description**

Description: Configure ION device description.

Example: Configure the default system information:

```
Agent III C1|S2|L1D>set device description ?
  CIRCUIT
Agent III C1|S2|L1D>set device description C4221-CIRCUIT
Agent III C1|S2|L1D>show device description
Device description: C4221-CIRCUIT
Agent III C1|S2|L1D>
```


Bandwidth Allocation Commands

The following commands are used to set bandwidth limiting rates.

Note: These commands can only be entered when the last part of the command line prompt indicates the location is a port (LxPx; where x is 1, 2 or 3 for the C4221). These commands cannot be entered at the device level – only at the port level. **Note** that these commands are case-sensitive.

Set Bandwidth Rate Limiting Mode

Syntax: `set bw alloc-type={countAllLayer1 | countAllLayer2 | countAllLayer3}`

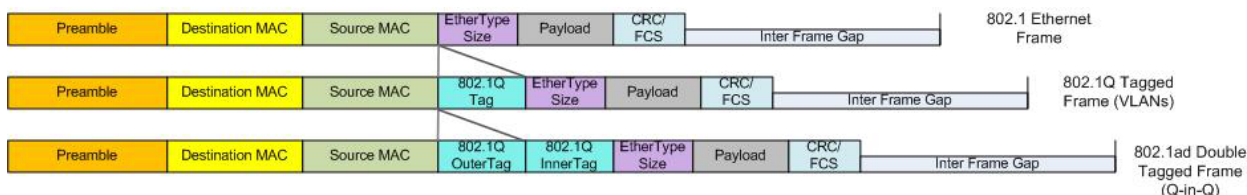
Description: Defines which transmission layer is to be counted when determining the rate limit.

countAllLayer1: (the default): in determining the rate limit, this selection counts the following bytes in a frame: Preamble (8 Bytes) + DA to CRC + Inter Frame Gap (12 bytes).

counts AllLayer2: in determining the rate limit, this selection counts the bytes in a frame from the DA to the CRC in determining the rate limit.

countAllLayer3: in determining the rate limit, this selection counts the bytes in a frame from the DA to the CRC (18 bytes if untagged, 22 bytes if tagged). The **countAllLayer3** selection will skip the Ethernet header, the CRC, and Tags (if any tags exist).

Note: the C4221 only supports "Counts all Layer 1".



Example:

```
Agent III C1|S2|L1P3>set bw alloc-type countAllLayer1
Agent III C1|S2|L1P3>go l1p=2

Agent III C1|S2|L1P2>set bw alloc-type countAllLayer1
Agent III C1|S2|L1P2>go l1p=1
Agent III C1|S2|L1P1>set bw alloc-type countAllLayer1
Agent III C1|S2|L1P1>show bandwidth allocation
Bandwidth allocation type:    countAllLayer1
Ingress rate:                 rate7M
Egress rate:                  rate8M
Agent III C1|S2|L1P1>go l1p=2
Agent III C1|S2|L1P2>show bandwidth allocation
Bandwidth allocation type:    countAllLayer1
Ingress rate:                 rate8G
Egress rate:                  rate6G
Agent III C1|S2|L1P2>go l1p=3
Agent III C1|S2|L1P3>show bandwidth allocation
Bandwidth allocation type:    countAllLayer1
Ingress rate:                 rate4M
Egress rate:                  rate6M
Agent III C1|S2|L1P3>
```

Set Bandwidth Rate Limit

Syntax: `set irate=<ir> erate=<er>`

Description: Defines the ingress and egress rate limits of a port. Sets ingress rate and egress rate of a port with increased granularity of Ingress/Egress Rate Limiting per MEF 11. **Note:** The rate parameters are case-sensitive. Use the **show bandwidth allocation** command to verify the setting. This command does not work on the IONMM ports.

where: `ir` = Ingress rate: Ingress rate in bps.

`er` = Egress rate: Egress rate in bps (bits per second).

Example: Set ingress and egress rate limits for Ports 1 and 2:

```
Agent III C1|S2|L1P1>set irate <tab>
rate100M  rate250M  rate3G    rate500M  rate650M  rate7G    rate900M
rate10M   rate25M   rate3M    rate50M   rate65M   rate7M    rate90M
rate150M  rate2G    rate400M  rate550M  rate6G    rate800M  rate950M
rate15M   rate2M    rate40M   rate55M   rate6M    rate80M   rate95M
rate1G    rate300M  rate450M  rate5G    rate700M  rate850M  rate9G
rate1M    rate30M   rate45M   rate5M    rate70M   rate85M   rate9M
rate200M  rate350M  rate4G    rate600M  rate750M  rate8G    unLimited
rate20M   rate35M   rate4M    rate60M   rate75M   rate8M

Agent III C1|S2|L1P1>set irate rate5G ?
erate
Agent III C1|S2|L1P1>set irate rate5G erate <tab>
rate100M  rate250M  rate3G    rate500M  rate650M  rate7G    rate900M
rate10M   rate25M   rate3M    rate50M   rate65M   rate7M    rate90M
rate150M  rate2G    rate400M  rate550M  rate6G    rate800M  rate950M
rate15M   rate2M    rate40M   rate55M   rate6M    rate80M   rate95M
rate1G    rate300M  rate450M  rate5G    rate700M  rate850M  rate9G
rate1M    rate30M   rate45M   rate5M    rate70M   rate85M   rate9M
rate200M  rate350M  rate4G    rate600M  rate750M  rate8G    unLimited
rate20M   rate35M   rate4M    rate60M   rate75M   rate8M

Agent III C1|S2|L1P1>set irate rate5G erate rate6G ?
<cr>
Agent III C1|S2|L1P1>set irate rate5G erate rate6G
Speed:                               10G
Agent III C1|S2|L1P1>
Agent III C1|S2|L1P1>show bandwidth allocation
Bandwidth allocation type:  countAllLayer2
Ingress rate:              rate5G
Egress rate:               rate6G
Agent III C1|S2|L1P1>
```

Example: Set ingress and egress rate limits for Port 3:

```

Agent III C1|S2|L1P3>set irate <tab>
rate100M  rate250M  rate3G    rate500M  rate650M  rate7G    rate900M
rate10M   rate25M   rate3M    rate50M   rate65M   rate7M    rate90M
rate150M  rate2G    rate400M  rate550M  rate6G    rate800M  rate950M
rate15M   rate2M    rate40M   rate55M   rate6M    rate80M   rate95M
rate1G    rate300M  rate450M  rate5G    rate700M  rate850M  rate9G
rate1M    rate30M   rate45M   rate5M    rate70M   rate85M   rate9M
rate200M  rate350M  rate4G    rate600M  rate750M  rate8G    unLimited
rate20M   rate35M   rate4M    rate60M   rate75M   rate8M

Agent III C1|S2|L1P3>set irate rate9M erate <tab>
rate100M  rate250M  rate3G    rate500M  rate650M  rate7G    rate900M
rate10M   rate25M   rate3M    rate50M   rate65M   rate7M    rate90M
rate150M  rate2G    rate400M  rate550M  rate6G    rate800M  rate950M
rate15M   rate2M    rate40M   rate55M   rate6M    rate80M   rate95M
rate1G    rate300M  rate450M  rate5G    rate700M  rate850M  rate9G
rate1M    rate30M   rate45M   rate5M    rate70M   rate85M   rate9M
rate200M  rate350M  rate4G    rate600M  rate750M  rate8G    unLimited
rate20M   rate35M   rate4M    rate60M   rate75M   rate8M

Agent III C1|S2|L1P3>set irate rate9M erate rate8M ?
<cr>
Agent III C1|S2|L1P3>set irate rate9M erate rate8M
Speed:                1000M
The irate limit is not supported for 1000M!
Agent III C1|S2|L1P3>show bandwidth allocation
Bandwidth allocation type:  countAllLayer1
Ingress rate:              unLimited
Egress rate:               unLimited
Agent III C1|S2|L1P3>set irate rate350M erate rate400M
Speed:                1000M
Agent III C1|S2|L1P3>show bandwidth allocation
Bandwidth allocation type:  countAllLayer1
Ingress rate:              rate350M
Egress rate:               rate400M
Agent III C1|S2|L1P3>

```

Show Bandwidth Allocation Configuration

Syntax: **show bandwidth allocation**

Description: Shows the bandwidth allocation for a port.

Example:

```
Agent III C1|S2|L1P1>set bw alloc-type countAllLayer1
Agent III C1|S2|L1P1>show bandwidth allocation
Bandwidth allocation type:   countAllLayer1
Ingress rate:                rate7M
Egress rate:                 rate8M
Agent III C1|S2|L1P1>go l1p=2
Agent III C1|S2|L1P2>show bandwidth allocation
Bandwidth allocation type:   countAllLayer1
Ingress rate:                rate8G
Egress rate:                 rate6G
Agent III C1|S2|L1P2>go l1p=3
Agent III C1|S2|L1P3>show bandwidth allocation
Bandwidth allocation type:   countAllLayer1
Ingress rate:                rate4M
Egress rate:                 rate6M
Agent III C1|S2|L1P3>
```

Bandwidth Allocation Command Messages

The C4221 uses set 10g sfp irate or set 10g tp irate.

Error: Invalid irate!

Error: Invalid erate!

Error: Cannot set irate because irate is bigger than port speed!

Error: Cannot set erate because erate is bigger than port speed!

Error: Set ingress rate failed!

Error: Set egress rate failed!

Error: Cannot set ingress and egress rate on this card!

The irate limit is not supported for 10G!

The irate limit is not supported for 1000M!

The irate limit is not supported for 100M!

The irate limit is not supported for 10M!

Error: Fail to get port type!

Ethernet Port Commands

The following commands are used for Ethernet port operations. **Note:** These commands can only be entered when the last part of the command line prompt indicates the location is a port (LxPx; where x is 1, 2 or 3). An asterisk (*) indicates Read only (ON) capability.

Clear Ethernet Port Counters

Syntax: **clear ether all counters**

Description: Clears the Ethernet port counters on a slide-in module' port. The counts (RMON statistics counters, dot3 counters, etc.) are reset to zero and begin incrementing immediately.

Example:

```
Agent III C1|S2|L1D>clear ether all counters
Error: this command should be executed on a port!
Agent III C1|S2|L1D>go l1p=1
Agent III C1|S2|L1P1>clear ether all counters
Agent III C1|S2|L1P1>go l1p=2
Agent III C1|S2|L1P2>clear ether all counters
Agent III C1|S2|L1P2>go l1p=3
Agent III C1|S2|L1P3>clear ether all counters
Agent III C1|S2|L1P3>
```

Note: Use the **show ether statistics** command to display the current Ethernet port counter information.

Show Ethernet Statistics

Syntax: **show ether statistics**

Description: Display a port's received and sent counters.

Example:

```
Agent III C1|S2|L1P1>show ether statistics
Port Counters Received:
-----
Total Octets:                0
Unicast Packets:             0
Broadcast Packets:           0
Multicast Packets:           0
Rx Discards:                 0
Rx Errors:                   0

Port Counters Sent:
-----
Total Octets:                0
Unicast Packets:             0
Broadcast Packets:           0
```

```
Multicast Packets:          0
Rx Discards:                0
Rx Errors:                  0
Error: Fail to Dot3 statistics!
Agent III C1|S2|L1P1>
```

Reset All Ports Counters

Syntax: **reset all ports counters**

Description: Resets all counters on all ports of the specified Ethernet device. The device's counts (RMON statistics counters, dot3 counters, etc.) are reset to zero and begin incrementing immediately.

Example:

```
Agent III C1|S2|L1P2>reset all ports counters
Error: this command should be executed on a device!
Agent III C1|S2|L1P2>go c=1 s=2 l1d
Agent III C1|S2|L1D>reset all ports counters
Agent III C1|S2|L1D>
```

Note: Use the **show ether config** command to show the current Link operation status.

Set Ethernet Port Admin Status

Syntax: **set ether admin state={up | down}**

Description: Specifies whether or not the Ethernet port is available for use.

Example:

```
Agent III C1|S2|L1D>set ether admin state up
Error: this command should be executed on a port!
Agent III C1|S2|L1D>go l1p=1
Agent III C1|S2|L1P1>set ether admin state up
Admin state port num = 3
Agent III C1|S2|L1P1>go l1p=2
Agent III C1|S2|L1P2>set ether admin state up
Admin state port num = 3
Agent III C1|S2|L1P2>go l1p=3
Agent III C1|S2|L1P3>set ether admin state up
Agent III C1|S2|L1P3>
```

Note: Use the **show ether config** command to show the current link operation status.

Show DMI

Syntax: **show dmi**

Description: Display port Diagnostic Monitoring Interface (DMI) data. NID models with Diagnostic Monitoring Interface (DMI) support allow diagnosing problems within the network. The DMI function displays x4221 NID diagnostic / maintenance information such as fiber interface characteristics, diagnostic monitoring parameters, and supported fiber media lengths. All DMI events will trigger notification Intrusion detection, based on Rx Power level, can be set to trigger on a drop in the Rx power. DMI device functions include Transmit power , Receive power , Transmit bias current , and Temperature.

Within each function, the DMI device will send a trap whenever a high or low warning event or high or low alarm event occurs (for a total of 16 traps). If both the local and remote NIDs are DMI models, the DMI device will indicate whether the trap event is from a local or remote device.

Example:

```
Agent III C1|S2|L1P1>show dmi info
Diagnostic monitoring interface information:
-----
DMI connector type:                LC
DMI identifier:                    SFP/SFP+/SFP28
DMI Nominal bit rate:              10300*Mbps
DMI 9/125u Singlemode Fiber (k):   80*km
DMI 9/125u Singlemode Fiber (m):   25500*m
DMI 50/125u Multimode Fiber (m):   N/A
DMI 62.5/125u Multimode Fiber (m): N/A
Copper(m):                         N/A
DMI fiber interface wavelength:    110*nm
DMI temperature:                   35.9*C
DMI temperature:                   96.6*F
DMI temperature alarm:             normal
DMI transmit bias current:         81994*uA
DMI transmit bias alarm:           normal
DMI Transmit power:                1534*uW
DMI Transmit power:                1.858*dBm
DMI Transmit power alarm:          normal
DMI Receive power:                 0*uW
DMI Receive power alarm:           normal
Error: Get DMI Vendor name no such object.
Error: Get DMI Vendor Part Number no such object.
Error: Get DMI Vendor serial number no such object.
Error: Get DMI Vendor revision no such object.
Error: Get DMI Vendor date code no such object.
Error: Get DMI Vendor SFP type no such object.
```

```
Error: Get DMI Vendor OUI no such object.
DMI Receive power intrusion threshold: 0*uW
Agent III C1|S2|L1P1>go c=1 s=2 l1p=2
Agent III C1|S2|L1P2>show dmi info
Diagnostic monitoring interface information:
-----
DMI connector type:                LC
DMI identifier:                    SFP/SFP+/SFP28
DMI Nominal bit rate:              10500*Mbps
DMI 9/125u Singlemode Fiber (k):   N/A
DMI 9/125u Singlemode Fiber (m):   N/A
DMI 50/125u Multimode Fiber (m):   80*m
DMI 62.5/125u Multimode Fiber (m): 3*10m
Copper(m):                         N/A
DMI fiber interface wavelength:    850*nm
DMI temperature:                   38.9*C
DMI temperature:                   102.0*F
DMI temperature alarm:             normal
DMI transmit bias current:         6176*uA
DMI transmit bias alarm:           normal
DMI Transmit power:                590*uW
DMI Transmit power:                -2.291*dBM
DMI Transmit power alarm:          normal
DMI Receive power:                 539*uW
DMI Receive power:                 -2.684*dBM
DMI Receive power alarm:           normal
Error: Get DMI Vendor name no such object.
Error: Get DMI Vendor Part Number no such object.
Error: Get DMI Vendor serial number no such object.
Error: Get DMI Vendor revision no such object.
Error: Get DMI Vendor date code no such object.
Error: Get DMI Vendor SFP type no such object.
Error: Get DMI Vendor OUI no such object.
DMI Receive power intrusion threshold: 0*uW
Agent III C1|S2|L1P2>go c=1 s=2 l1p=3
Agent III C1|S2|L1P3>show dmi info
Error: DMI is only supported on FIBER port!
Agent III C1|S2|L1P3>
```


The Diagnostic monitoring interface information parameters are explained below.

Parameter	Description
DMI connector type	The external optical or electrical cable connector provided as the interface (e.g., LC).
DMI identifier	The physical DMI device ID from the standard; for example: SFP/SFP+/SFP28, etc.
DMI Nominal bit rate	Bitrate in units of 100Mbps (for example: 10500, or 10.5 Gbps) (measured rate).
DMI Transmit Power Alarm	Alarm status for transmit power on local fiber. Normal -1, Not Supported - 2 , Low Warn – 3, High Warn - 4 , Low Alarm – 6, or High Alarm – 7.
DMI 9/125u Single-mode Fiber (km)	Displays the link length that is supported by the transceiver while operating in single mode (SM) fiber. The unit of measure is kilometers (km). For example, 8Km.
DMI 9/125u Single-mode Fiber (m)	The link length that is supported by the transceiver while operating in single mode (SM) fiber. The unit of measure is meters (m). For example, 80m.
DMI 50/125u Multi-mode Fiber (m)	The link length that is supported by the transceiver while operating in 50 micron Multi-mode (MM) fiber. The value is in meters.
DMI 62.5/125u Multimode Fiber (m)	The link length that is supported by the transceiver while operating in 62.5 micron Multimode (MM) fiber. The value is in meters.
Copper (m)	The link length that is supported by the transceiver while operating in copper cable. The value is in meters or N/A.
DMI fiber interface wavelength (nm)	The Nominal transmitter output wavelength at room temperature (measured wavelength). The unit of measure is nanometers (e.g., 1550 nm or 850 nm).
DMI temperature	Measured temperature of fiber transceiver in tenths of degrees C (Celsius). For example: 30.1°C.
DMI temperature	Measured Temperature of fiber transceiver in tenths of degrees F (Fahrenheit). For example: 86.2 °F.
DMI temperature alarm	Alarm status for temperature of fiber transceiver. An <i>ionDMITemperatureEvt</i> event is sent when there is a warning or alarm on DMI temperature. Normal -1, Not Supported - 2 , Low Warn – 3, High Warn - 4 , Low Alarm – 6, or High Alarm – 7.
DMI transmit bias current	Measured transmit bias current on local fiber interface, in uA (microamperes). For example, 5936 uA (microamps).
DMI transmit bias alarm	Alarm status for transmit bias current on local fiber interface. Normal -1, Not Supported - 2 , Low Warn – 3, High Warn - 4 , Low Alarm – 6, or High Alarm – 7.
DMI transmit power (uW)	Measured transmit power on local fiber measured in microwatts. For example, 240 uW (microwatts).
DMI transmit power (dBm)	Transmit power on local fiber measured in dBm (decibels relative to one milliwatt) which defines signal strength. For example: -2.291 dBm.
DMI transmit power alarm	Alarm status for transmit power on local fiber. Normal -1, Not Supported - 2 , Low Warn – 3, High Warn - 4 , Low Alarm – 6, or High Alarm – 7.
DMI Receive power (uW)	Receive power (measured power measurement) on local fiber measured in microwatts (for example: 11 uW).
DMI Receive power alarm	Alarm status for receive power on local fiber: Normal -1, Not Supported - 2 , Low Warn – 3, High Warn - 4 , Low Alarm – 6, or High Alarm – 7.

DMI Receive power intrusion threshold	<p>Set a level for Rx Power on the Fiber port. If the DMI read value falls below the set value, an intrusion is detected, and a trap is generated (0-10). The message displays: <i>ALARM: Receive power is below specified threshold. Fiber trap intrusion may be in progress.</i></p> <p>Note: C4221 port 2 DMI data is not shown if there is no SFP in port 1. Without an SFP in port 1, the port 2 DMI will display "<i>The DMI feature is not supported on the current port.</i>". When an SFP is inserted into port 1, the port 2 DMI displays as expected. To recover, insert an SFP in Port 1 and click the Refresh button.</p>
---------------------------------------	--

Show Ethernet Port Configurations

Syntax: **show ether config**

Description: Displays the NID Ethernet port configuration. Different ports have different capabilities, so the display content will vary according to the NID type and port type.

Example 1: An example for a TP Port (copper port) is shown below.

```
Agent III C1|S2|L1P3>show ether config
Port-34848
TP port:
-----
Link operation status:      down
Admin status:              up
Port mode:                 RJ-45
Autoneg state:            not available
PHY operation mode:       phy1000BaseT
Speed:                     auto
Duplex:                    half
Autocross:                 auto
PHY mode change cap:      false

AutoNeg admin state:
Dot3 pause admin mode:    disabled
Dot3 pause oper mode:    disabled
Dot3 ctrl func supported: not available
Agent III C1|S2|L1P3>
```

Example 2: An example of a FIBER port (SFP port) is shown below.

```
Agent III C1|S2|L1P2>show ether config
Port-24848
FIBER port:
-----
Link operation status:      up
Admin status:              up
Port mode:                 SFP+
Autoneg state:            not available
PHY operation mode:       phy10GBaseAuto
Speed:                     10G
Duplex:                    full
PHY mode change cap:      true

AutoNeg admin state:
Dot3 pause admin mode:    disabled
Dot3 pause oper mode:    disabled
Dot3 ctrl func supported: not available
Agent III C1|S2|L1P2>
```

STP Admin Status Commands

STP Admin Status commands are added to the CLI and backup/restore at IONMM FW v 1.4.32.

STP (Spanning Tree Protocol) is a network protocol that builds a loop-free logical topology for Ethernet networks. The basic function of STP is to prevent bridge loops and the resulting broadcast radiation. Spanning tree also allows a network design to include backup links to provide fault tolerance if an active link fails.

The CLI commands are "show stp config" and "set stp config". These are port-level commands.

Show STP Admin Status

Syntax: **show stp config**

Description: Displays the current STP admin status.

Example 1: An example is shown below.

```
Agent III C1|S14|L1PD>go l1p=1
Agent III C1|S14|L1P1>show stp config
STP Admin Status:  disable
Agent III C1|S14|L1P1>
```

Set STP Admin Status

Syntax: **set stp config**

Description: Sets the STP admin status to enabled or disabled. The default is disabled.

Example 1: An example is shown below.

```
Agent III C1|S14|L1PD>go l1p=1
Agent III C1|S14|L1P1>show stp config
STP Admin Status:  disable
Agent III C1|S14|L1P1>set stp config enable
STP Admin Status:  enable
Agent III C1|S14|L1P1>
```

VLAN Commands

Device level VLAN commands let you create, configure, and view VLAN instances. The default VLAN port type is C-Port. By default, the C4221 passes all tagged and untagged frames.

The device-level VLAN commands include:

```
show vlan-db config
set vlan-db vid=<2-4094> fid=FID pri-override=(enable|disable)
set vlan-db vid=<2-4094> fid=FID priority=PRIO
set vlan-db vid=<2-4094> port=<1-10> memetag=(noMod|unTag|tag|notMember)
add vlan vid=<2-4094> [priority=NUM] [pri-override=(enable|disable)]
remove vlan-db vid=<2-4094>
```

VLAN Command Parameters

The VLAN command parameters are described below.

vid: Enter the VLAN ID number. This sets the VLAN ID which is to be used for all management traffic to and from the device. The management station that belongs to this VLAN is the only one able to manage the C4221 NID. By default the VLAN ID is set to 1 (Management VLAN 1 enabled). When the value is not 0 or 1, the Management traffic is expected to be tagged with the Management VLAN ID configured when 802.1Q is enabled. The valid range is 2–4094. You cannot modify the attributes of VLAN 1.

prio override: priority override; **enable** indicates that the frames with this VLAN ID can have their priority overridden with the **priority** value (below) in this entry if the port's prio override is enabled here.

priority: The priority specified here is used when priority override is enabled. Set a priority of 0-7, where priority 7 is the highest priority.

memetag: Member Tag Port x; Defines which ports are members of the VLAN and if the frames should be tagged/untagged on egressing the port. The parameters are:

noMod: Port is a member of this VLAN and frames are to egress unmodified. Frames mapped to this VLAN egress unmodified out on this port (frame maps to a VLAN id when it ingresses a port, the VLAN id is mapped based on either the existing VID if it is already tagged or the port default VLAN ID if untagged). Frames are unmodified, they egress the same as they ingress this interface.

unTag : Port is a member of this VLAN and frames are to egress untagged. Frames mapped to this VLAN egress untagged out on this port.

tag : Port is a member of this VLAN and frames are to egress tagged. The frames mapped to this VLAN egress tagged out on this port. Untagged frames get tagged when they egress this interface.

notMember: Port is not a member of this VLAN and frames with this VLAN id will be discarded. Frames mapped to this VLAN will not be forwarded out on this port.

When configuring a VLAN on the C4221 through the IONMM, set the membership of each port to either noMod (traffic with the configured VLAN tag # can ingress and egress that port) or notMember (traffic with the configured VLAN tag will not be allowed to ingress or egress that port).

fid: FID (Filtering Database ID or FDB ID or Filtering Identifier):

Different FIDs = different SATs = Independent VLAN Learning (IVL).

Same FIDs = same SATs = Shared VLAN Learning (SVL).

See <http://www.ieee802.org/1/files/public/docs2008/aq-seaman-clb-suggested-changes-0908.pdf>.

Syntax: **show vlan-db config**

Description: Displays the VLAN configuration.

Example:

```
Agent III C1|S2|L1D>show vlan-db config
vid:1      fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:2      fid:0
port1: notMember port2: notMember port3: notMember
vid:3      fid:0
port1:     noMod  port2: notMember port3: notMember
vid:4      fid:0
port1:     noMod  port2:     noMod  port3: notMember
vid:5      fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:6      fid:0
port1: notMember port2:     noMod  port3:     noMod
vid:7      fid:0
port1: notMember port2: notMember port3:     noMod
vid:8      fid:0
port1:     noMod  port2: notMember port3:     noMod
vid:9      fid:0
port1:     noMod  port2: notMember port3:     noMod
vid:10     fid:0
port1:     noMod  port2: notMember port3: notMember
vid:11     fid:0
port1:     noMod  port2: notMember port3: notMember
vid:12     fid:0
port1:     noMod  port2:     noMod  port3: notMember
vid:13     fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:14     fid:0
port1: notMember port2: notMember port3:     noMod
vid:15     fid:0
port1: notMember port2: notMember port3:     noMod
vid:16     fid:0
port1:     noMod  port2: notMember port3: notMember
vid:100    fid:0
port1: notMember port2: notMember port3:     noMod
Agent III C1|S2|L1D>
```

Syntax: **set vlan-db config**

Description: Sets the VLAN database configuration for Port and FID.

set vlan-db vid=<1-4094> fid=FID pri-override=(enable|disable)

set vlan-db vid=<1-4094> fid=FID priority=PRIO

set vlan-db vid=<1-4094> port=<1-10> memetag=(noMod|unTag|tag|notMember)

Example:

```
Agent III C1|S2|L1D>set v ?
  vlan-db
Agent III C1|S2|L1D>set vlan-db ?
  vid
Agent III C1|S2|L1D>set vlan-db vid ?
  <1-4094>
Agent III C1|S2|L1D>set vlan-db vid 10 ?
  fid
  port
Agent III C1|S2|L1D>set vlan-db vid 10 port ?
  <1-10>
Agent III C1|S2|L1D>set vlan-db vid 10 port 8 ?
  memetag
Agent III C1|S2|L1D>set vlan-db vid 10 port 8 memetag ?
  noMod
  notMember
  tag
  unTag
Agent III C1|S2|L1D>set vlan-db vid 10 port 8 memetag tag
  <cr>
Agent III C1|S2|L1D>set vlan-db vid 10 port 8 memetag tag

Agent III C1|S2|L1D>set vlan-db vid ?
  <1-4094>
Agent III C1|S2|L1D>set vlan-db vid 2 ?
  fid
  port
Agent III C1|S2|L1D>set vlan-db vid 2 fid ?
  FID
Agent III C1|S2|L1D>set vlan-db vid 2 fid 2 ?
  pri-override
  priority
Agent III C1|S2|L1D>set vlan-db vid 2 fid 2 priority ?
  PRIO
Agent III C1|S2|L1D>set vlan-db vid 2 fid 2 priority 7 ?
  <cr>
Agent III C1|S2|L1D>set vlan-db vid 2 fid 2 priority 7
Agent III C1|S2|L1D>set vlan-db vid 2 fid 2 pri-override ?
  disable
  enable
Agent III C1|S2|L1D>set vlan-db vid 2 fid 2 pri-override enable
Agent III C1|S2|L1D>
```

Message: *Error: Cannot modify attributes of VLAN1!* displays if you try to modify VLAN 1.

Syntax: **add vlan vid**=<2-4094> [priority=NUM] [pri-override=(enable|disable)]

Description: Add, prioritize, and enable a VLAN ID.

Example:

```
Agent III C1|S2|L1D>add vlan vid ?
  <2-4094>
Agent III C1|S2|L1D>add vlan vid 22 ?
  priority
Agent III C1|S2|L1D>add vlan vid 22 priority ?
  NUM
Agent III C1|S2|L1D>add vlan vid 22 priority 5
  pri-override
Agent III C1|S2|L1D>add vlan vid 22 priority 5 pri-override ?
  disable
  enable
Agent III C1|S2|L1D>add vlan vid 22 priority 5 pri-override enable ?
  <cr>
Agent III C1|S2|L1D>add vlan vid 22 priority 5 pri-override enable
Agent III C1|S2|L1D>add vlan vid 22 priority 5 pri-override disable
%Unknown command!
Agent III C1|S2|L1D>add vlan vid 54 ?
  [priority
Agent III C1|S2|L1D>add vlan vid 54 3 ?
  NUM]
Agent III C1|S2|L1D>add vlan vid 54 3 3 ?
  [pri-override
Agent III C1|S2|L1D>add vlan vid 54 3 3 3 ?
  enable
  disable
Agent III C1|S2|L1D>add vlan vid 54 3 3 3 enable

Agent III C1|S2|L1D>show vlan-db config <cr>
vid:15      fid:0
port1: notMember  port2: notMember  port3:      noMod
vid:16      fid:0
port1:      noMod   port2: notMember  port3: notMember
vid:54      fid:0
port1: notMember  port2: notMember  port3:      noMod
vid:100     fid:0
port1: notMember  port2: notMember  port3:      noMod
Agent III C1|S2|L1D>
```

Message: *Error: Cannot modify attributes of VLAN1!* displays if you try to modify VLAN 1.

There is no matched command. displays if you enter the command **add vlan vid 1**.

Error: VID already exist! displays if you enter an existing VLAN ID (VID).

Syntax: **remove vlan vid**=<2-4094>

Description: Delete an existing VLAN ID.

Example:

```
Agent III C1|S2|L1D>remove vlan vid ?
  <2-4094>
Agent III C1|S2|L1D>remove vlan vid 20 ?
  <cr>
Agent III C1|S2|L1D>remove vlan vid 20
Agent III C1|S2|L1D>show vlan-db config
vid:1      fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:2      fid:0
port1: notMember port2: notMember port3: notMember
vid:3      fid:0
port1:     noMod  port2: notMember port3: notMember
vid:4      fid:0
port1:     noMod  port2:     noMod  port3: notMember
vid:5      fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:6      fid:0
port1: notMember port2:     noMod  port3:     noMod
vid:7      fid:0
port1: notMember port2: notMember port3:     noMod
vid:8      fid:0
port1:     noMod  port2: notMember port3:     noMod
vid:9      fid:0
port1:     noMod  port2: notMember port3:     noMod
vid:54     fid:0
port1: notMember port2: notMember port3:     noMod
vid:100    fid:0
port1: notMember port2: notMember port3:     noMod
Agent III C1|S2|L1D>remove vlan vid 54, 100
% Unknown command.
Agent III C1|S2|L1D>remove vlan vid 54
% Unknown command.
Agent III C1|S2|L1D>
```

Messages:

There is no matched command. displays if you enter the command **remove vlan vid 1**.

% Parameter value is out of range. displays if you enter an invalid VID.

Syntax: **remove vlan-db vid**=<2-4094>

Description: Delete an existing VLAN DB VLAN ID.

Example:

```
Agent III C1|S2|L1D>remove vlan-db vid ?
  <2-4094>
Agent III C1|S2|L1D>remove vlan-db vid 6 ?
  <cr>
Agent III C1|S2|L1D>remove vlan-db vid 6
Agent III C1|S2|L1D>remove vlan-db vid 1
% Parameter value is out of range.
Agent III C1|S2|L1D>remove vlan-db vid ?
  <2-4094>
Agent III C1|S2|L1D>remove vlan-db vid 6 ?
  <cr>
Agent III C1|S2|L1D>remove vlan-db vid 6
Agent III C1|S2|L1D>show vlan config
vid:1      fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:2      fid:0
port1: notMember port2: notMember port3: notMember
vid:3      fid:0
port1:     noMod  port2: notMember port3: notMember
vid:4      fid:0
port1:     noMod  port2:     noMod  port3: notMember
vid:5      fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:7      fid:0
port1: notMember port2: notMember port3:     noMod
vid:8      fid:0
port1:     noMod  port2: notMember port3:     noMod
vid:9      fid:0
port1:     noMod  port2: notMember port3:     noMod
vid:10     fid:0
port1:     noMod  port2: notMember port3: notMember
vid:11     fid:0
port1:     noMod  port2: notMember port3: notMember
vid:12     fid:0
port1:     noMod  port2:     noMod  port3: notMember
vid:13     fid:0
port1:     noMod  port2:     noMod  port3:     noMod
vid:14     fid:0
port1: notMember port2: notMember port3:     noMod
vid:15     fid:0
port1: notMember port2: notMember port3:     noMod
vid:16     fid:0
port1:     noMod  port2: notMember port3: notMember
vid:54     fid:0
port1: notMember port2: notMember port3:     noMod
vid:100    fid:0
port1: notMember port2: notMember port3:     noMod
Agent III C1|S2|L1D>
```

L2CP Commands

L2CP Processing per MEF 10.2 defines Layer 2 Control Protocols (L2CP) as “various Ethernet control protocols such as Spanning Tree BPDUs, LACP, PAUSE Frames, etc. L2CP Frames have specific MAC DAs belonging to reserved multicast MAC address ranges (see following table). Some of the L2CPs have their own MAC DA assigned to them. For example the MAC DA 01-80-C2-00-00-07 is reserved for E-LMI. Other protocols share a MAC DA. For example, the address 01-80-C2-00-00-02 is allocated for all "slow protocols" like LACP. Most of them use untagged frames.”

<u>Layer 2 Control Protocol</u>	<u>MAC DAs</u>
Bridge Block of protocols	01-80-C2-00-00-00 through 01-80-C2-00-00-0F
GARP Block of protocols	01-80-C2-00-00-20 through 01-80-C2-00-00-2F

Identifying a specific protocol can be done using MAC DA, Ether_type, or Slow protocol sub-type. For more details refer to IEEE 802.1Q.

Note that a protocol might use more than one MAC DA. For example LLDP usually uses 01-80-C2-00-00-0E, but in some cases it can use 01-80-C2-00-00-00. The protocol can be determined from the Ether_type.

MEF 6.1.1 lists L2CP Protocols and Associated Ethertypes and Subtypes as shown in the table below:

<u>Protocol Type</u>	<u>Ethertype/Subtype</u>
STP/RSTP/MSTP	Not applicable
PAUSE	0x8808
LACP/LAMP	0x8809/01 02
Link OAM	0x8809/03
Port Authentication	0x888E
E-LMI	0x88EE
LLDP	0x88CC
PTP Peer Delay	0x88F7
ESMC	0x8809/0A

There are 4 options for handling of the L2CP protocol at the UNI:

Discard – The incoming frame is dropped by the Carrier Ethernet Network (CEN) and no reply is generated.

Peer – The CEN acts as a peer with the CE and may generate an egress frame based on the protocol rules. From the CE point of view, the CEN is a single device that is running the Layer 2 Control Protocol.

Pass to EVC – The incoming frame is mapped to an EVC based on the CE-VLAN ID of the incoming frame. If the frame is untagged, it will be mapped to the EVC to which all untagged frames are mapped.

Peer and Pass to EVC – The CEN acts as peer with the CE and may generate an egress frame. In addition, the frame is passed to the EVC.

For more information see https://www.mef.net/Assets/Technical_Specifications/PDF/MEF_45.pdf and <https://wiki.mef.net/pages/viewpage.action?pageId=27527289>.

Command: Display current L2CP configuration
Syntax: show l2cp config
Description: On a C4221 port, shows the L2CP configuration.
Example:

```
C1|S10|L1P2>show l2cp config
Parameter Value
-----
Spanning Tree Protocols pass
Slow Protocols pass
Port Authentication Protocols pass
ELMI Protocols discard
LLDP Protocols discard
Bridge Mgmt Protocols discard
GARP/MRP Block of Protocols pass
Bridge Block Other Multicast Protocols pass
C1|S10|L1P2>
```

Command: Set l2cp Protocol and Process
Syntax:
set l2cp proto = (spanningTree|slow|portAuthentication |elmi|lldp |bridgeMgmt |garpmrpBlock |bridgeBlockOtherMulticast)
set l2cp process=(pass|discard)
Description: Set the L2CP protocol.
Example:

```
C1|S10|L1P2>set l2cp proto ?
spanningTree
slow
portAuthentication
elmi
lldp
bridgeMgmt
garpmrpBlock
bridgeBlockOtherMulticast
C1|S10|L1P2>set l2cp proto=elmi process=discard
C1|S10|L1P2>
```

Related Commands

Upgrade is only supported on IONMM card. See the *IONMM User Guide* for specific information.

Backup/Restore commands must be executed on IONMM. **Note** that when doing a backup with no stack name the CLI prepends the serial number of the chassis to the TARFILE, but the Web UI does not; the Web just prepends an underscore, "_" (e.g., _backup.....).

Recording Model Information and System Information

After performing the troubleshooting procedures, and before calling or emailing Technical Support, please record as much information as possible in order to help the Technical Support Specialist.

1. Select the ION system **MAIN** tab. (From the CLI, use the commands needed to gather the information requested below. This could include commands such as **show card info**, **show cardtype**, **show system information**, **show ether config**, or others as requested by the Support Specialist.)

2. Record the **Model Information** for your system.

Serial Number: _____ Model: _____

Software Revision: _____ Hardware Revision: _____

3. Record the **System Configuration** information for your system.

System Up Time: _____ Number of Ports: _____

MAC Address: _____

4. Provide additional Model and System information to your Technical Support Specialist.

Your Lantronix service contract number: _____

A description of the failure: _____

Describe any action(s) already taken to resolve the problem (e.g., rebooting, etc.):

The serial and revision numbers of all involved Lantronix products in the network:

A description of your network environment (layout, cable type, etc.): _____

Network load and frame size at the time of trouble (if known): _____

The device history (i.e., have you returned the device before, is this a recurring problem, etc.):

Any previous Return Material Authorization (RMA) numbers: _____

Appendix A: CLI Messages and Recovery

This section documents the messages that may display during CLI operation

The `get_sic_type` CLI command responses can include OK , Not_OK , SET_FAIL , TIMEOUT , END_OF_TABLE, NO_SUCH_INST , NO_SUCH_OBJECT , UNKNOWN, CLI command %s failed, and The model type is unknown.

CLI Messages related to function support:

Not supported in this release.

Error: Cannot show system information on this card!

Error: DMI is only supported on FIBER port!

Error: No DMI support on this port!

Error: SNTP is not supported in this release.

Error: Get DMI identifier no such object.

Error: TFTP is not supported in this release.

Error: IP management is not supported in this release.

Error: SNMP management is not supported in this release.

Error: SNMP is not supported on this card!

Error: RMON statistics are not supported in this release.

Error: Cannot show RMON statistics on this port!

Error: Cannot show Ethernet statistics on this port!

Error: Dot3 statistics are not supported in this release.

Error: MAC control frames statistics are not supported in this release.

Error: Failed to get Dot3 statistics!

Error: Failed to get MAC control frames statistics!

Error: SSH is not supported in this release.

Error: Redundancy is not supported in this release.

Error: TNDP is not supported in this release.

Error: Mac learning is not supported on this card!

Error: Syslog is not supported on this card!

HTTPS is not supported in this release.

show loam config is not supported in this release.

show loam peer info is not supported in this release.

show loam ignore-loopback-request is not supported in this release.

Error: Link OAM is not supported on this card!

set loam ignore-loopback-request is not supported in this release.

Error: Cannot set link OAM ignore-loopback-process on this port!

show loam event config is not supported in this release.

OAM is not supported in this release.

Error: No link OAM event log now!

Link OAM is not supported in this release.

Get port speed is not supported in this release

Set service connect type is not supported in this release.

Set service vid is not supported in this release.

Set service Ethtype is not supported in this release.

Set service translation is not supported in this release.
Show aging time is not supported in this release.
Set aging time is not supported in this release.
Show port VLAN is not supported in this release.
Set dot1dbridge state is not supported in this release.
set port discard-untagged is not supported in this release.
Error: Cannot set discard untagged frame on this card!
set port discard-tagged is not supported in this release.
set port force-default-vid is not supported in this release.
set port default-vid is not supported in this release.
Show mgmt vlan config is not supported in this release.
Error: Management VLAN is not supported on this card!
Set mgmt vlan config is not supported in this release.
set mgmt vlan vid is not supported in this release.
show port vlan tag config is not supported in this release.
set port vlan tag mode is not supported in this release.
set port vlan tag provider ethtype is not supported in this release.
set port vlan tag network tagging is not supported in this release.
show fwddb config fdbid is not supported in this release.
add fwddb mac is not supported in this release.
remove fwddb mac is not supported in this release.
remove fwddb all is not supported in this release.
set fwddb mac is not supported in this release.
Error: Can not remove a row of forward database on this card!
Error: Cannot create forward database on this card!
Error: Cannot set forward database connection port on this card!
set fwddb priority is not supported in this release.
Error: Cannot set forward database priority on this card!
set fwddb entry type is not supported in this release.
Error: Cannot set forward database entry type on this card!
Error: Cannot set VLAN database priority on this card!
Error: set VLAN database priority
set vlan-db member and egress tagging is not supported in this release.
Error: Cannot set forward database member and egress tag!
show qos config is not supported in this release.
Error: Cannot show port QoS configuration in this card!
set qos default-priority is not supported in this release.
Set port default-vid is not supported in this release.
Error: Cannot set IEEE tag for priority in this card!
set qos priority ip-tag is not supported in this release.
Error: Cannot set IP tag for priority in this card!
set qos priority by-src-mac is not supported in this release.
Error: Cannot set source MAC for priority in this card!
set qos priority by-dst-mac is not supported in this release.
Error: Cannot set destination MAC for priority in this card!
set qos priority by-vlan-id is not supported in this release.

Error: Cannot set VLAN id for priority in this card!
set qos priority tag-type is not supported in this release.
Error: Cannot set tag type for priority in this card!
show qos priority remapping is not supported in this release.
Error: Cannot show port QoS priority remapping in this card!
set qos ingress-priority is not supported in this release.
Error: Cannot Set port QoS priority remapping in this card!
show dot1dbridge ip-tc priority remapping is not supported in this release.
Error: IP priority remapping is not supported on this card!
IP priority remapping is not supported in this release.
show dot1dbridge ieee-tag priority remapping is not supported in this release.
Error: IEEE tag priority remapping is not supported on this card!
set dot1dbridge ip-priority-index is not supported in this release.
set dot1dbridge ieee-tag-priority is not supported in this release.
remove acl rule index is not supported in this release.
set ip6tables acl state is not supported in this release.
set ip6tables acl management state is not supported in this release.
restart ip6tables acl is not supported in this release.
show ip6tables acl chain is not supported in this release.
show ip6tables acl rule is not supported in this release.
set ip6tables acl table is not supported in this release.
add ip6tables acl rule position is not supported in this release.
set ip6tables acl rule trap rate is not supported in this release.
remove ip6tables acl rule index is not supported in this release.
remove ip6tables acl rule all is not supported in this release.
remove ip6tables acl condition all is not supported in this release.
show ip6tables acl condition is not supported in this release.
set ip6tables acl condition rule-index is not supported in this release.
remove ip6tables acl condition index is not supported in this release.
add ip6tables acl condition type is not supported in this release.
Add an ip6tables ACL condition for provision is not supported in this release.
set acl state is not supported in this release.
show acl state is not supported in this release.
Error: Cannot show ACL state on this card!
show acl condition is not supported in this release.
Error: Cannot show ACL condition on this card!
set acl condition rule-index is not supported in this release.
Error: Cannot set ACL condition rule index on this card!
remove acl condition index is not supported in this release.
Error: Cannot remove ACL condition rule index on this card!
add acl condition type is not supported in this release.
add acl condition is not supported in this release.
restart acl is not supported in this release.
Error: Cannot restart ACL on this card!
show acl rule is not supported in this release.
set acl rule is not supported in this release.

Error: Fail to remove ACL rule!
Error: Cannot remove ACL rule on this card!
Error: Cannot set ACL rule traprate on this card!
remove acl rule all is not supported in this release.
Error: Cannot remove ACL rule on this card!
show port mac_learning state is not supported in this release.
set mac_learning enable portlist is not supported in this release.
show lpt config is not supported in this release.
RADIUS is not supported in this release.
show radius config is not supported in this release.
set radius client state is not supported in this release.
Error: Fail to set RADIUS client state!
Error: Cannot set RADIUS client state on this card!
set radius server is not supported in this release.
Error: Cannot set RADIUS client state on this card!
Set RADIUS server time out is not supported in this release.
Error: Fail to set RADIUS server time out!
Error: Cannot set RADIUS server timeout on this card!
set radius svr is not supported in this release.
Error: Cannot set RADIUS server on this card!
Set RADIUS server secret is not supported in this release.
Error: This card can not set RADIUS secret!
add vlan vid on a dot1dbridge is not supported in this release.
remove vlan vid on a dot1dbridge is not supported in this release.
remove vlan all on a dot1dbridge is not supported in this release.
flush vlandb all is not supported in this release.
Error: Cannot flush vlandb on this card!
flush fiddb type is not supported in this release.
Error: Fail to get VLAN forward database fid!
Error: Fail to get VLAN forward database priority override!
Error: Fail to get VLAN forward database priority!
Error: Fail to get VLAN forward database membership and Egress tagging!
Error: Fail to get VLAN forward database vid!
Error: The range of priority is 0 .. 7!
Error: Invalid dot1dbridge MAC address!
Error: Fail to get vlan id!
Error: Please input a number to specify the priority!
Error: set VLAN database priority override
Error: Fail to set VLAN database row status!
Error: Cannot create VLAN database on this card!
Error: VLAN remove failed - check for SOAM binding to this VLAN!!
add vlan-db priority override is not supported in this release.
Error: Please input a number to specify VLAN forward database id!
Error: Fail to set forward database priority override!
add vlan-db priority is not supported in this release.
Error: Please input a number to specify VLAN forward database priority!

Error: Please input a number to specify port id!
Error: Port id is out of range!
show vlan is not supported in this release.
remove acl condition all is not supported in this release.
Error: Cannot remove ACL condition on this card!
show acl chain is not supported in this release.
Error: Cannot set ACL chain policy on this card!
set acl table chain policy is not supported in this release.
show l2cp config is not supported in this release.
set l2cp config is not supported in this release.
Error: L2CP is not supported on this card!
prov set l2cp state is not supported in this release.
show snmp view is not supported in this release.
add snmp view name is not supported in this release.
set snmp view name is not supported in this release.
remove snmp view name is not supported in this release.
show snmp group is not supported in this release.
add snmp group name is not supported in this release.
remove snmp group name is not supported in this release.
set snmp group name is not supported in this release.
set snmp group name, write view is not supported in this release.
set snmp group name, notify view is not supported in this release.
show snmp traphost is not supported in this release.
show snmp community is not supported in this release.
set port egress queuingmethod is not supported in this release.
show fwd portlist is not supported in this release.
show tacplus config is not supported in this release.
AUTONEG STATE is not supported in this release
SPEED is not supported in this release
DUPLEX is not supported in this release
PHY mode change capability is not supported in this release
Get dot3 control function is not supported in this release
show ether security config is not supported in this release.
Can not show ether configure on this card!
Error: Cannot set Ethernet port speed for this card!
Error: Please input a number to specify VLAN id!
VLAN id is out of range!
Error: VLAN id is out of range!
Error: VID already exist!
Error: Can not remove VLAN from the database!
Error: Cannot remove vlan on this card!
Error: Fail to flush VLANdb!
Error: This vlan has already been used as the management vlan, please modify.
Error: No dot1bridge has been created!
Error: Invalid priority override value!
Remove all VLAN is not supported in this release.

Error: Cannot set VLAN id on this port!
Error: Cannot show VLAN service configuration on this card!
Error: Please input a number to specify the VLAN id!
Error: vid for tag is out of range!
Error: Please input a number to specify connection port!
Error: Please input a number to specify forward database index!
Error: The specified conn-port does not exist!
Error: Fail to set forward database connection port!
Unknown command for this card!
Error: Cannot modify attributes of VLAN1!

Port Command Error Messages

No port commands on this card!
Loopback is not supported in this release.
Ether Loopback is not supported in this release.
Time-domain reflectometer is not supported in this release.
Error: Failed to get Rx statistics!
Error: Failed to get Tx statistics!
Error: Failed to get Dot3 statistics!
only TP port can do autocross configuration
only 100M fiber port has Far End Fault capability
Error: Cannot set administrate state on this port!
Error: Fail to get port redundancy state!
Error: Redundancy is enabled, so cannot set the administration state of fiber ports
Error: Fail to set Ethernet port speed!
set port mgmtaccess is not supported in this release.
Error: Can not show switch mode on this card!
Error: Cannot set auto-negotiation state on this port!
Error: Upgrade is only supported on IONMM card!
Error: this command should be executed on IONMM or a standalone SIC!
Error: This command is only valid on an IONMM!
This command is only available on x323x card!
Error: TDM config is not supported on this card!
Error: No TDM loopback supported on this card!
show vlan-db config is not supported in this release.
Error: Cannot get VLAN database configuration on this card!
add vlan-db vid is not supported in this release.
remove vlan-db vid is not supported in this release.
Error: Cannot remove forward database rows on this card!
set vlan-db priority override is not supported in this release.
Error: Cannot set priority override on this card!
set vlan-db priority is not supported in this release.
Error: Cannot set PHY mode on this port!
Error: Cannot set Ether port duplex mode on this card!
Error: Cannot set advertisement capability on this port!
Cannot set this attribute for fiber port
Error: Cannot set dot3 pause on this port!
Error: Cannot set pause on this port!
Error: Failed to set SNTP server
Fail to set SNTP server!
Error: need subnet-mask when ipv4 address is set!
Error: Invalid IP address!
Error: Fail to set IPv4 address!
Error: Fail to set subnet mask!
Error: Fail to set gateway address!
SNMP is not supported in this release.
Ethernet statistics are not supported in this release.

Dot3 MAC control frames statistics are not supported in this release.
Error: Fail to get MAC control frames statistics!
SSH is not supported in this release.
Error: TNDP is not supported on this card!
TNDP is not supported in this release.
Mac learning is not supported in this release.
Error: Redundancy is enabled, so cannot set the administration state of fiber ports!
Error: Fail to set port administrate state!
Set autoneg state is not supported in this release.
Set ether speed is not supported in this release.
Set ether pause is not supported in this release.
Error: Cannot set advertisement capability on this port!
Error: Bad advertisement capability!
Error: Cannot set advertisement capability for fiber port!
Error: Fail to set port advertisement capability!
dot3 pause is not supported in this release.
Set ether autocross is not supported in this release.
Error: Cannot set autocross on Fiber port!
Clear counters is not supported in this release.
TDM is not supported in this release.
TDR is not supported in this release.
Cable length is not supported in this release.
Ether security is not supported in this release.
Error: Fail to Dot3 statistics!
Error: Cannot show aging time on this card!
Error: Cannot set aging time on this card!
Error: Cannot get link OAM statistics information on this port!
Error: Cannot get link OAM configuration on this port!
Error: Get link pass through state no such object.
Error: Cannot show USB port state on this card!
Error: Cannot set USB port state on this card!

Ambiguous command

A. This message indicates either a) the input for one of the parameters is incorrect, or b) a hyphen is missing between two parts of the command.

1. Verify the CLI command syntax.
2. Retry the operation.

B. You typed part of a valid CLI command and pressed **Enter** before completing the command syntax. For example, if you type

```
C1|S7|L1D>add v
```

and then press the **Enter** key, the message “% *Ambiguous command.*” displays.

1. Type the part of the command that failed (**add v** in the example above), type a question mark (?), and the press **Enter**. The valid commands that start with the part of the command you initially entered are displayed.
2. Verify the CLI command syntax.
3. Retry the operation.

C. The system was unable to resolve the desired command based on the portion of the command entered. For example, you entered the following: C1|S7|L1D>set dot1

1. Verify the command syntax.
2. Retry the CLI command syntax.
3. If the problem persists, contact Technical Support.

Command incomplete

This message indicates that not all of the required fields were entered for the CLI command.

1. Verify the command syntax. Make sure you enter all the keywords or values required by this command.
2. Re-enter the command followed by a question mark (?) with a space between the command and the question mark. The possible keywords that you can enter with the command display.
3. Retry the operation.
4. If the problem persists, contact Technical Support.

Could not open connection to the host on port 23. Connection failed.

This message indicates that the Telnet server and client are configured for different ports. For Telnet operations the default port is 23.

1. Ensure that the Telnet port is set to 23 for both the server and the client. This will require someone with administrative rights in order to make a change.
2. Add the port number to the Telnet command. Example:
Telnet <ipaddr> <port#>
3. If the problem persists, contact Technical Support.

Error: this command should be executed on a device

This message indicates that the CLI command was entered for a port and it is only applicable for a device.

1. Use the **go** command to change location of where the command operates. The **go** command format is:
go [c=<1-16>] [s=<1-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
for a slide in card, or
go [c=<0-16>] [s=<0-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
for a Standalone card
2. Retry the operation.
3. If the problem persists, contact Technical Support.

Error: this command should be executed on a port

This message indicates that the CLI command was entered for a card and it is only applicable for a port.

1. Use the **go** command to change location of where the command operates. The **go** command format is:
go [c=<1-16>] [s=<1-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
for a slide in card, or
go [c=<0-16>] [s=<0-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
for a Standalone card
2. Retry the operation.
3. See the related CLI command in this manual.
4. If the problem persists, contact Technical Support.

Fail to get MAC address!

This message indicates that communications to the module cannot be established.

1. Verify that the correct hierarchy has been specified in the command.
2. For all modules (slide-in and remote) check the following:
 - module is properly seated/connected
 - module is powered up
3. Wait 60 seconds then retry the operation.
4. Cycle power for the module in question. **Note:** for slide-in modules pull the module out so it is no longer connected to the backplane, then slide the module back in, ensuring that it is firmly seated.
5. Retry the operation.
6. If the problem persists, contact Technical Support.

Fail to get port type!

This message indicates that a port level command was entered for the IONMM but the command is only valid for the other types of slide-in modules.

1. Use the **go** command to change location of where the command operates.
2. Retry the operation.
3. If the problem persists, contact Technical Support.

Incomplete location command!**Incomplete location parameters, lack of level1 attachment port!**

This message indicates that one or more parameters for the **go** command are missing. The **go** command was entered to set location parameters, but the module, slot and/or port value(s) were not included in the command string.

The **go** command can operate on a local or remote card/port, and you must give the last parameter to specify the target is a port or device. For example, the input `go c=1 s=14` does not include the port parameter, so the CLI module displays “Incomplete location parameters”.

1. Verify the command syntax.
2. Re-enter the **go** command and be sure to include all of the location parameters:

```
go [c=<1-16>] [s=<1-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
```

for a slide in card, or

```
go [c=<0-16>] [s=<0-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
```

for a Standalone card

3. If the problem persists, contact Technical Support.

Invalid location parameters, cannot find the physical entity!

This message indicates that the system cannot detect the presence of the device or port specified in the **go** command. For example, you entered the command `go l1p=3` on a device that supports two ports.

1. Verify that the correct hierarchy has been specified in the command.
2. For all modules (slide-in and remote) check the following:
 - module is properly seated/connected
 - module is powered up
3. Wait 60 seconds then retry the operation.
4. Cycle power for the module in question. **Note:** for slide-in modules pull the module out so it is no longer connected to the backplane, then slide the module back in, ensuring that it is firmly seated.
5. Retry the operation.
6. If the problem persists, contact Technical Support.

Login incorrect

This message indicates that either the login or password entered while trying to establish a USB or Telnet connection is incorrect.

1. Verify the login/password.

Note: the login and password are case sensitive. The default login is **ION** and the default password is **private**.

2. Retry the operation.
3. If the problem persists, contact Technical Support.

No DMI support on this port!

This message indicates that you entered a DMI command for a port that does not support DMI.

1. Verify that the port supports DMI.
2. Retry the operation.
3. If the problem persists, contact Technical Support.

There is no matched command

This message indicates that there is no such command available on this system.

1. Verify the command syntax.
2. Retry the operation.
3. If the problem persists, contact Technical Support.

Unable to open xx. Please check your port settings.

This message indicates that HyperTerminal no longer recognizes which COM port to use for its connection.

1. Check that the USB cable is connected to the management station and the IONMM.
2. Check that the COM port is listed for the device manager on the management station.
 - a) On the desktop, right-click on **My Computer**.
 - b) Select **Manage**.
 - c) Click **Device Manager**.
 - d) In the right panel, expand the list for **COM & LPT**.
3. Is the COM port in the list?

Yes	No
Continue with step 4 .	Restart the management station.

4. In the HyperTerminal window, select **File>Properties**.
5. Check that the correct port is listed in the **Connect using** field.
6. Restart the management station (PC).
7. Reboot the IONMM.
8. If the problem persists, contact Technical Support.

Error, you should first give full location parameters

The location value is incomplete; it is missing the module, slot and/or port value(s). This message can display when a device-level command is entered (e.g., **show lpt config**).

When you change a bigger container, the value of smaller object is cleared. For example, originally the operated object is Chassis=1, slot=4, L1AP=1 L2AP=2 L3D, and then when the command chassis 3 is entered. This automatically sets the value of module, slot and port to 0.

If the value of module, slot and port are not set in later commands, and then you run a device-level command (e.g., **show lpt config**), this error message displays.

Enter the **go** command and be sure to include all of the location parameters.

```
go [c=<1-16>] [s=<1-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
```

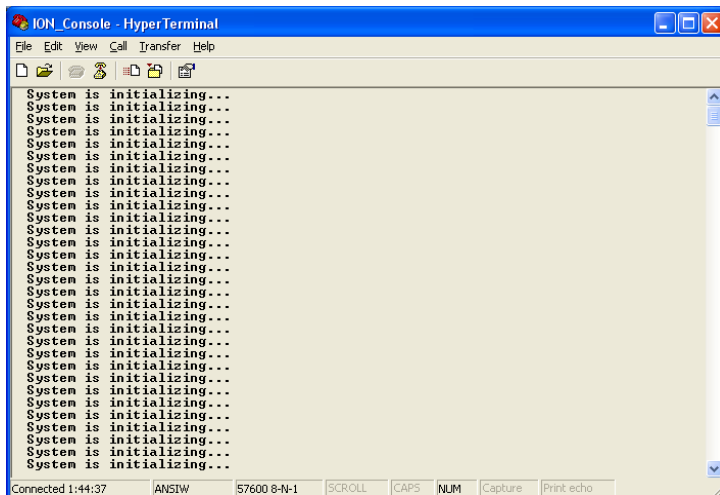
for a slide in card, or

```
go [c=<0-16>] [s=<0-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5>|l2p=<1-15>|l3p=<1-15>|l1d|l2d|l3d)
```

for a Standalone card

System is initializing...

CLI is receiving continuous error message "system is initializing..."



1. Wait for a few minutes for the message to clear.
2. Cycle power to the IONMM.
3. Retry the operation.
4. If the problem persists, contact Technical Support.

Error: this command should be executed on a port!

1. Verify the command entered is the one you want.
2. Change to the desired port; enter the **go** command with all of the location parameters (chassis / slot / port).
3. Retry the operation from the port (i.e., type **show fwd portlist** and press **Enter**).

Unknown command!

The command you entered is not supported, or you entered the wrong command format / syntax.

1. Verify the CLI command syntax.
2. Retry the operation.
3. For a complete list of the available commands, run the **?** or **list** command.
4. If the problem persists, contact Technical Support.

There is no matched command.

The command you entered is not supported, or you entered the wrong command format / syntax.

1. Verify the CLI command syntax.
2. Retry the operation.
3. For a complete list of the available commands, run the **?** or **list** command.
4. If the problem persists, contact Technical Support.

Error location parameter number!

Error: parameter out of range, chassis-id range is (0 .. 15)!

Error: parameter out of range, slot-id range is (1 .. 32)

Error: parameter out of range, slot-id range is (0 .. 32)

Incomplete location command!

The **go** command you entered had an invalid or missing parameter.

1. Enter the **go** command with all of the location parameters (chassis / slot / port) in the format:

```
go [c=<1-16>] [s=<1-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5> | l2p=<1-15> | l3p=<1-15> | l1d | l2d | l3d)
```

(on a slide in card), or

```
go [c=<0-16>] [s=<0-32>] [l1ap=<1-15>] [l2ap=<1-15>] (l1p=<1-5> | l2p=<1-15> | l3p=<1-15> | l1d | l2d | l3d)
```

(on a Standalone card).

2. For a complete list of the available commands, run the **?** or **list** command.
3. If the problem persists, contact Technical Support.

Invalid erate!**Invalid irate!**

You tried to set the Ingress or Egress rate to an unacceptable limit. For example, you typed:

```
C1|S3|L1D>set irate=100m erate=100m
```

and then pressed **Enter**.

1. Verify the CLI command syntax.
2. Retry the operation. See the “[Set Bandwidth Rate Limit](#)” command.
3. If the problem persists, contact Technical Support.

Cannot set remote fault detect state on this card!

The attempted **set rfd state** command was rejected (e.g., C1|S7|L1D>set rfd state enable).

1. Verify that the card you entered the command on supports this function.
2. Retry the operation. See the **dot1bridge aging-time** command.
3. If the problem persists, contact Technical Support.

Cannot set service vid for tag on this card!

The attempted **set dot1bridge vid** command was rejected (e.g., C1|S7|L1D>set dot1bridge vid 2).

1. Verify that the card you entered the command on supports this function.
2. Retry the operation. See the **dot1bridge aging-time** command.
3. If the problem persists, contact Technical Support.

Get aging time failed!

The attempted show dot1bridge aging-time command failed to complete.

1. Verify the **dot1bridge aging-time** command syntax.
2. Retry the operation. See the **dot1bridge aging-time** command.
3. If the problem persists, contact Technical Support.

Redundancy is not supported on this card!

The attempt to set or show fiber redundancy failed. For example, you entered the command: **show redundancy info**, but the device does not support fiber redundancy.

1. Verify that the card you entered the command on supports this function.
2. Retry the operation on a card that supports this function.
3. If the problem persists, contact Technical Support.

Fail to transfer the file!

The file transfer attempt failed. The command you entered to do a tftp file transfer was unsuccessful (e.g., **tftp get** or **tftp put** or **tftp transfer**).

1. Check the command syntax.
2. Make sure the TFTP server is configured and running.
3. Verify the filename to be transferred and the IP address of the TFTP server.
4. If the problem persists, contact Technical Support.

Fail to set management VLAN id!

Fail to set management VLAN state!

You entered the command **set mgmt vlan state** or **set mgmt vlan port** or **set mgmt vlan vid** to enable or configure Management VLAN, but the operation failed.

1. Verify the VLAN Management configuration using the **show vlan service** command.
2. Review the **set mgmt vlan command** syntax for the port / state / vid. See the “[VLAN Commands](#)”.
3. If the problem persists, contact Technical Support.

Upgrade is only supported on IONMM card!

You entered a firmware *upgrade* or *update* command from a device other than the IONMM. For example:

```
C1|S3|L1D>show firmware upgrade result
C1|S3|L1D>show firmware-db update result
C1|S3|L1D>show upgrade firmware file
C1|S3|L1D>update firmware-db file cert
C1|S3|L1D>upgrade module
```

1. Make sure of the command you want to enter.
2. Use the **home** command to go to the IONMM device.
3. Re-enter the firmware upgrade command from the IONMM.
4. If the problem persists, contact Technical Support.

Cannot set bandwidth alloc type on this card!

You entered the command **set bw alloc-type countAllLayerx** on a card that does not support it. For example:

```
C1|S7|L1P1>set bw alloc-type countAllLayer2
Cannot set bandwidth alloc type on this card!
```

1. Verify if the card supports bandwidth allocation.
2. Use the **go** command to switch to a different card and switch to the port level.
3. Verify the command entry. See “[Bandwidth Allocation Commands](#)”.
4. If the problem persists, contact Technical Support.

Cannot set ingress and egress rate on this card!

You entered the command **set irate=xx erate=xx** on a card that does not support it. For example:

```
C1|S7|L1P1>set irate noLimit erate noLimit
Cannot set ingress and egress rate on this card!
```

1. Verify if the card supports rate limiting. Try the syntax **set irate=unLimit erate=unLimit**.
2. Use the **go** command to switch to a different card and switch to the port level.
3. Verify the command entry. See "[Bandwidth Allocation Commands](#)".
4. If the problem persists, contact Technical Support.

DMI is only supported on FIBER port!

You entered the command **show dmi info** on a card that does not support it. For example:

```
C1|S7|L1P1>show dmi info
DMI is only supported on FIBER port!
```

1. Verify if the card supports DMI.
2. Use the **go** command to switch to a different card port supporting Fiber.
3. Verify the command entry.
4. If the problem persists, contact Technical Support.

Link OAM is not supported on this card!

You entered the command **show loam rx loopback control** on a card that does not support it. For example:

```
C1|S7|L1P1>show loam rx loopback control
Link OAM is not supported on this card!
```

1. Verify if the card supports loopback.
2. Use the **go** command to switch to a different card port supporting loopback.
3. Verify the command entry.
4. If the problem persists, contact Technical Support.

Fail to get system name!

You entered a command to display system information, but the information on the card was not available. For example:

```
C1|S10|L1D>show card info
Fail to get system name!
```

1. Try entering the **show cardtype** command.
2. Use the **set system name** command to enter the **System Name** information (e.g., **set system name=NAME**). The entry for the system contact, system location, and system name must be a text string with no spaces between characters. Note that numbers, upper/lower case characters, and special characters (~!@#\$%^&*()_+)" are allowed.
3. Remove and reset the card.
4. Try the operation again.
5. If the problem persists, contact Technical Support..

Set system name timeout.

You entered a command to define system information, but the information on the card was not accepted. For example:

```
C1|S10|L1D>set system name C3231
Set system name timeout.
```

1. Use the **set system name** command to enter the System Name information (e.g., **set system name=NAME**) without any special characters (e.g., without ! or # or % or & characters).
2. Remove and reset the card.
3. Try the operation again.
4. If the problem persists, contact Technical Support.

System is busy, please retry this command later!

You entered a **show** or **set** command, but the command was not accepted by the system. For example:

```
C1|S10|L1D>show https config
System is busy, please retry this command later!
C1|S10|L1D>
```

1. Wait 1-2 minutes minute and then retry the command.
2. Reboot the system and then retry the command.
3. If the problem persists, contact Technical Support.

Warning: this command will restart system, connection will be lost and please login again!

Warm start failed.

You entered a **reboot** command, but the reboot was unsuccessful.

1. Wait 1-2 minutes and then retry the command.
2. If the problem persists, contact Technical Support.

Ping command can only be used on management card!

The attempted **ping** command was not accepted by the system. For example:

```
C1|S5|L1D>ping 192.168.1.30
Ping command can only be used on management card!
```

1. Use the **go** command to switch to the IONMM card.
2. Refer to the **Ping** command section.
3. Retry the command.
4. If the problem persists, contact Technical Support.

No such file or directory

You entered a **cat** or **ls** command, but the parameters you specified could not be found. For example:

```
C1|S16|L1P1>ls 1 2
ls: 1: No such file or directory
ls: 2: No such file or directory
C1|S16|L1P1>
```

or

```
C1|S16|L1P1>cat 1 2
cat: 1: No such file or directory
cat: 2: No such file or directory
2C1|S16|L1P1>
```

1. Verify the [OPTION] and [FILE] parameters are entered accurately.
2. Review the **cat** or **ls** command section of this manual.
3. Try entering the **cat** or **ls** command again.
4. If the problem persists, contact Technical Support.

Please give parameters for L2CP configuration:%s

You tried to perform an **L2CP** function but have not defined the **L2CP** parameter(s).

1. Verify the **L2CP** command parameters.
2. Try entering the command again.
3. If the problem persists, contact Technical Support.

Please change to power supply slot first before showing its configure!

You entered the show power config command from a device other than the power supply. For example:

```
C1|S16|L1D>show power config
Please change to power supply slot first before showing its configure!
C1|S16|L1D>
```

1. Make sure this is the command you want.
2. Verify the command syntax.
3. Use the go command to switch to the slot containing the power supply (typically slot 22 and/or 23).
4. Contact Lantronix for more information.

Parameter value is out of range.

One or more of the entered CLI command parameters was not within the valid range.

1. Verify the command syntax. Re-enter the command followed by a question mark (?) with a space between the command and the question mark. The possible keywords that you can enter with the command display.
2. Retry the command. For a complete description of each available command, see the *list* command.
3. If the problem persists, contact Technical Support.

Disable transmitting the TN topology discovery protocol on this port would make the device not be discovered by the Management unit if the device is remotely managed through this port. Are you sure?

Error: this command should be executed on a port!

Fail to get TNDP Tx state!

Fail to set TNDP Tx state of this port!

TNDP is not supported on this card!

You tried to enter the **set tndp** command but either the function is not supported or you entered it at the device level or you are being asked to verify the command entry.

1. Warning message that the **set tndp=disable** command disables management of the device from the IONMM. Verify that this is the function you want.
2. Use the **go** command to switch to a port.
3. Use the ION Web interface to perform the function.
4. Use the **go** command to switch to a device that supports this function.
5. The **set tndp=disable** command is a port level command; use the go command to switch to a port and re-enter this command.
6. Verify that this card supports the TNDP disable function.
7. Check the syntax and re-enter the command.
1. If the problem persists, contact Technical Support.

IP management is not supported on this card!**TAOS status setting is not supported on this card!**

You entered a command for a function that is not supported on the C4221. For example:

```
C1|S15|L1D>set dhcp state disable
IP management is not supported on this card!
C1|S15|L1D>
```

1. Try another command on the C4221.
2. Try the command on another card that supports the attempted function.
3. If the problem persists, contact Technical Support.

Speed and duplex capability advertised by local auto-negotiation entity

A combination of 10THD,10TFD,100TFD, 100THD,1000THD and 1000TFD for copper port, like 10TFD+100TFD+100THD+1000TFD; and N/A for none capability; Cannot set this attribute for fiber port

You entered a command to set the rate for a port that does not support this rate command.

1. Verify that this is the command you want.
2. Either select another device that supports this rate command, or enter another command that this port supports.
3. Retry the operation.
4. If the problem persists, contact Technical Support.

The two passwords do not match!

You tried to generate a private key, but the operation failed. For example:

```
C1|S3|L1D>set https private-key password
Please input password:
xxxxxx
Please input password again:
yyyyyyy
The two passwords do not match!
C1|S3|L1D>
```

1. Verify that this is the operation you want.
2. Retry the operation; be sure to type the password the same both times.
3. If the problem persists, contact Technical Support.

Sys.log file lost on reboot

The device will dump all syslog files from RAM to flash on re-boot or if a system crash occurs. The last (most recent) syslog is stored as last_sys.log which can be retrieved using the tftp command. The filename sys.log is the current syslog file. The filename last_sys.log is the old syslog file.

Cannot find software version of this card!

The ION card's firmware version must be newer than a specified version, otherwise this message is returned. You used the go command to switch to another card, but the system checked its version and decided that the new CLI cannot be run on this card at this firmware version.

1. Check the card's current firmware version.
2. Upgrade the firmware.
3. Retry the operation.
4. If the problem persists, contact Technical Support.

Software version of this card is too old, please upgrade it!

The ION card's firmware version was checked and found to be too old to support this newer CLI command.

1. Upgrade the card firmware.
2. Retry the operation.
3. If the problem persists, contact Technical Support.

This command is only valid on an IONMM!**Cannot show slot info on this card!**

You entered a "**show slot info**" command on an ION card other than an IONMM card.

1. Enter another (supported) show command on this card, or use the "**go**" command to switch to the IONMM.
2. Retry the operation.
3. If the problem persists, contact Technical Support.

ERROR Software version of this card ("cardVersion") is not supported, please upgrade to the same version as the IONMM**Getting card version failed****The failure get template config handler was called.**

You attempted a function that is not supported by this version of firmware.

1. Enter another (supported) function at this card's firmware version, or use the "**go**" command to switch to another card.
2. Upgrade to a newer firmware version.
3. Retry the operation.
4. If the problem persists, contact Technical Support.

The confirm password is not identical with the password!

The user name length must be in range [1..64]!

The user name must begin with an alphanumeric char!

You can only change your own password, not others!

You entered a command to create a new system user, but the command failed.

1. Verify the command syntax ("add sysuser name=NAMESTR level=(admin|read-write|read-only) pass=PASSSTR confirmpass=PASSSTR").
2. Retry the operation, making sure the "pass" and "confirmpass" entries match. See the related command section.
3. If the problem persists, contact Technical Support.

Problem: Bandwidth Ingress fault

Meaning: With rate set at 100Mbps with Full Duplex and Frame Size = 9216 a bandwidth Ingress fault occurs. When Ingress rate limiting is set at or below 512Kbps, the C4221 will pass approximately 1 Mbps of traffic. At 768kbps and above rate limiting is working. This problem only happens on Ingress (not Egress) and only happens when connected at 100Mbps Full Duplex. Packets of 1518k or less work fine. This is a known hardware component limitation that only occurs when using very large Jumbo Frame (>5k) and very low bandwidth (≤512k).

Recovery: 1. Make sure that C4221 ingress rate limiting settings are at or above the advertised speeds.
2. Change the rate, duplex mode, frame size, packet size, or Ingress Rate Limit. See the related section of this manual for details.

Message:

The maxium length of system contact is 255!

The maxium length of system name is 255!"

The maxium length of system location is 255!

The maxium string length of circuit ID is 64

The maxium string length of device description is 255

Meaning: You entered too many characters in an entry field.

Recovery:

1. Re-enter the text in the entry field using fewer characters.
2. Verify the new entry is accepted without any errors.
3. Contact Tech Support if the problem persists.

Message: *Fail to get SIC configure mode!*

Meaning: The 'reset to factory configuration' failed. For example:

```
C1|S1|L1D>reset factory
Fail to get SIC configure mode!
```

Recovery:

1. Verify the card configuration.
2. Verify the card firmware version.
3. Contact Tech Support if the problem persists.

Appendix B: Linux Commands

The ION system supports certain standard Linux file system commands such as **cat**, **cd**, **ls**, **more**, **pwd**, and **rm**. These commands are restricted to the user directories; internal Linux file systems are not accessible.

The ION standard Linux file system commands are based on BSD 4; refer to the related documentation for more information.

cd Command

Command: cd

Description: Change to another directory.

Example:

Options: Refer to the BSD 4 documentation for options and Interactive commands for the **cd** command.

ls Command

Command: ls

Description: Unix and Unix-like operating systems maintain the concept of a current working directory, (i.e., where you are currently positioned in the hierarchy of directories).

When invoked without any arguments, **ls** lists the files in the current working directory. This command is restricted to the IONMM user directories; internal Linux file systems are not accessible.

The IONMM card stores all configuration backup files, HTTPS certification file, SSH key file, and Sys-log file. For example, the HTTPS certificate is stored in `'/agent3/conf/lighttpd'`. For SSH, the host keys (RSA and DSA) are stored in `'/agent3/conf/dropbear'`.

Example:

```
C1|S7|L1D>ls
agent3
app
bin
dev
etc
lib
linuxrc
mnt
proc
root
sbin
sys
tftpboot
tmp
usr
var
www
C1|S7|L1D>
```

Options:

Without options, **ls** displays files in a bare format. This format makes it difficult to establish the type, permissions, and size of the files. The most common options to reveal this information or change the list of files are:

- l long format, displaying Unix file types, permissions, # of hard links, owner, group, size, date, filename
- F appends a character revealing the nature of a file, for example, * for an executable, or / for a directory. Regular files have no suffix.
- a lists all files in the given directory, including those whose names start with "." (which are hidden files in Unix). By default, these files are excluded from the list.
- R recursively lists subdirectories. The command **ls -R /** would therefore list all files.
- d shows information about a symbolic link or directory, rather than about the link's target or listing the contents of a directory.
- t sort the list of files by modification time.
- h print sizes in human readable format. (e.g., 1K, 234M, 2G, etc.)

Example:

```
C1|S3|L1D>ls etc
```

```
  TZ
  VERSION
  dropbear
  factory
  fstab
  group
  gshadow
  host.conf
  hostname
  hosts
  init.d
  inittab
  lighttpd
  lighttpd.conf
  motd
  openssl
  passwd
  profile
  protocols
  radius
  rcS.d
  resolv.conf
  rpc
  script
  services
  shadow
  snmpd.conf
  sysconfig
  terminfo
```

```
C1|S3|L1D>
```

Refer to the BSD 4 documentation for additional options and Interactive commands for the **ls** command.

more Command

Command: more

Description: A filter for paging through text one screenful at a time.

Example: C1|S7|L1D>more [OPTION]

Options: Refer to the BSD 4 documentation for options and Interactive commands for the **more** command.

pwd Command

Command: pwd

Description: Show current directory.

Example:

```
C1|S7|L1D>pwd
```

```
/
```

```
C1|S7|L1D>
```

Options: Refer to the BSD 4 documentation for options and Interactive commands for the **pwd** command.

rm Command

Command: rm

Description: Removes each specified file. By default, it does not remove directories.

Example:

Options: Refer to the BSD 4 documentation for options and Interactive commands for the **rm** command.



Lantronix Corporate Headquarters

48 Discovery
Suite 250
Irvine, CA 92618, USA
Toll Free: 800-526-8766
Phone: 949-453-3990
Fax: 949-453-3995

Technical Support

Online: <https://www.lantronix.com/technical-support/>

Sales Offices

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