Zhone CLI Reference Guide

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ABOUT THIS GUIDE

This guide is intended for use by system users or administrators.

> **Note:** This document describes all the parameters and commands in the Zhone CLI. The parameters and commands that appear on a particular system depend on the system software running and the hardware configuration of the device.

Style and notation conventions

The following conventions are used in this document to alert users to information that is instructional, warns of potential damage to system equipment or data, and warns of potential injury or death. Carefully read and follow the instructions included in this document.

> **Caution:** A caution alerts users to conditions or actions that could damage equipment or data.

> **Note:** A note provides important supplemental or amplified information.

> **Tip:** A tip provides additional information that enables users to more readily complete their tasks.

> **WARNING! A warning alerts users to conditions or actions that could lead to injury or death.**

> **WARNING! A warning with this icon alerts users to conditions or actions that could lead to injury caused by a laser.**

Typographical conventions

The following typographical styles are used in this guide to represent specific types of information.

Bold	Used for names of buttons, dialog boxes, icons, menus, profiles when placed in body text, and property pages (or sheets). Also used for commands, options, parameters in body text, and user input in body text.
`Fixed`	Used in code examples for computer output, file names, path names, and the contents of online files or directories.
`Fixed Bold`	Used in code examples for text typed by users.
`Fixed Bold Italic`	Used in code examples for variable text typed by users.
Italic	Used for book titles, chapter titles, file path names, notes in body text requiring special attention, section titles, emphasized terms, and variables.
PLAIN UPPER CASE	Used for environment variables.
Command Syntax	Brackets [ ] indicate optional syntax. Vertical bar | indicates the OR symbol.

Acronyms

The following acronyms appear throughout this manual:

Table 1: Acronyms and their descriptions

Acronym	Description
ARP	Address Resolution Protocol
ATM	Asynchronous Transfer Mode
BAN	Broadband Access Node
DSL	Digital Subscriber Line
GSS	Global Service and Support
HDSL2	High-bit-rate Digital Subscriber Line
IAD	Integrated Access Device
MALC	Multi-Access Line Concentrator
MIB	Management Information Base
PBX	Private Branch Exchange
RIP	Routing Information Protocol
SDSL	Symmetric Digital Subscriber Line
SLMS	Single Line Multi-Service

Table 1: Acronyms and their descriptions

Acronym	Description
SNMP	Simple Network Management Protocol
TFTP	Trivial File Transfer Protocol
VCI	Virtual Channel Identifier
VCL	Virtual Channel Link
VPI	Virtual Path Identifier
ZMS	Zhone Management System

Related documents

Refer to the documentation that came with your Zhone device for information about configuring the device.

Contacting Global Service and Support

Contact Global Service and Support (GSS) if you have any questions about this or other Zhone products. Before contacting GSS, make sure you have the following information:

- Zhone product you are using

- System configuration

- Software version running on the system

- Description of the issue

Technical support

If you require assistance with the installation or operation of your product, or if you want to return a product for repair under warranty, contact GSS. The contact information is as follows:

E-mail	support@zhone.com
Telephone (North America)	877-ZHONE20
Telephone (International)	510-777-7133
Internet	www.zhone.com/support

If you purchased the product from an authorized dealer, distributor, Value Added Reseller (VAR), or third party, contact that supplier for technical assistance and warranty support.

Service requirements

If the product malfunctions, all repairs must be performed by the manufacturer or a Zhone-authorized agent. It is the responsibility of users requiring service to report the need for service to GSS.

1 INTRODUCTION TO THE CLI

This chapter describes how to use the Zhone command line interface (CLI). It contains the following sections:

- Terminology, page 11
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- Viewing commands, page 16
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Terminology

The following terms are used throughout this document:

Term	Description
Access levels	The privilege level assigned to each user. Access levels determine the commands the user can execute.
Address	Every physical interface in the system has an address. Addressing on Zhone systems is of the form: *shelf/slot/ port/subport*, where subport is a logical interface associated with a physical interface, such as Ethernet interface. Profiles not associated with physical interfaces, such as subscriber profiles, have profile indexes.
CLI	The command line interface. Used to configure the Zhone system.

Term	Description
Command	Commands are used to view, add, delete and configure system profiles. Commands also allow administrators to perform system administrative tasks such as loading new software, adding users, and viewing system status.
Parameter	An item within a profile that you set in order to configure the Zhone system. For example, each Subscriber profile has a Name parameter that contains the name of the subscriber.
Profile	A profile is a template that is used to create records. For example, IP interfaces and SDSL lines have profiles, which are configured by administrative users and associated with a particular address.
Profile index	An index for a profile. Profiles not associated with physical interfaces, such as subscriber profiles, have profile indexes. Profiles associated with physical interfaces, such as SDSL lines, have addresses.
Record	A record is an instance of a profile associated with a particular subscriber, service, or interface. Records store configuration information.
Subscriber	Subscribers are remote users to which the Zhone system provides services.
User	A user is an administrator of the Zhone system. Users log into the unit to configure or manage it.

Logging in

You can access the CLI through a local serial craft connection or through a telnet session.

To access the serial port, configure your terminal interface software with the following settings:

- 9600bps

- 8 data bits

- No parity

- 1 stop bit

- No flow control

Connect a serial crossover cable to the DE-9 port on the unit labeled Serial Craft. At the prompt, enter default username (**admin**) and password (**zhone**):

```
login:admin
password: *****
zSH>
```

Profile indexes

This section describes profile indexes.

Virtual

All non-physical (virtual) **if-translate** records have their shelf, slot, port, subport fields set to zero. These interfaces are accessible by name only. Physical interfaces have both names and *shelf-slot-port-subport* values. Examples of a physical interface types include **hdsl2**, **adsl**, **sonet**, **atmima**, and **ethernetcsmacd**. Examples of virtual interfaces types include **atm**, **aal5**, **rfc1483** and **ip**.

Automatically provisioned if-translate records

The system automatically provisions certain **if-translate** records. These include physical interfaces (for example **hdsl2** and **adsl**), line group interfaces (**other**), and ATM interfaces (for example **atm**, **aal5**, **rfc1483**). The addressing of these profiles

Physical interfaces

For physical interfaces the name is a dash (-) separated string of shelf, slot, port, subport (*shelf-slot-port-subport*). For example: 1-2-1-0.

Virtual interfaces

For virtual interfaces, the profile address is the same with the addition of the name of the physical interface type on the end (*shelf-slot-port-subport/physicaltype*).

For example, for a virtual interface stacked on an **hdsl2** interface, the index would be 1-2-1-0-hdsl2.

Basic commands

The CLI contains profiles, which are templates for configuring the system; records, which are specific instances of profiles; and commands, which manipulate records or perform system functions (such as displaying line status).

The following table describes the most important CLI commands.

Command	Description
delete	Deletes a record. Syntax: **delete *profile-type*** [***index*** | *****] where *profile-type* is the type of profile and * is a wildcard character.
get	Displays the contents of a record. Syntax: **get *profile-type* *index*** where *profile-type* is the type of profile and *index* is the index of the profile (for example, *shelf-slot-port-subport/type*).
help	Displays the available commands or help on a particular command. Syntax: **help** [***command***]
list	Lists available profiles or displays the contents of a specified profile. Syntax: **list** [***profile-type*** | *****] where *profile-type* is the type of profile and * is a wildcard character. Without options, the list command displays all the profiles on the system.
new	Creates a new record. Syntax: **new *profile-type* *index*** where *profile-type* is the type of profile and *index* is the index of the profile (for example, *shelf-slot-port-subport/type*).

Command	Description
show	Displays the content of the specified profile along with the possible values of the parameters.
	Syntax:
	show *profile-type*
	where *profile-type* is the type of profile.
update	Updates the contents of an existing record.
	Syntax:
	update *profile-type* *index*
	where *profile-type* is the type of profile and *index* is the index of the profile (for example, *shelf-slot-port-subport/type*).

Viewing profiles

To view the profiles on the system, use the **list** command. After each profile is the format of the address or profile index for the profile. For example, the card-profile requires a *shelf/slot/port* address:

```
card-profile: shelf/slot/type/
```

Where *shelf* and *slot* are the physical location of the device and *type* is the type of the card.

> **Note:** The profiles on your system may vary, depending on the configuration of your unit.

For example:

```
zSH> list
aal2-audio-profile: audioProfileIdentifier/apIndex
aal2-cid-profile: ifIndex/vpi/vci/cid
aal2-vcl-profile: ifIndex/vpi/vci
adsl-co-profile: shelf/slot/port
adsl-cpe-profile: shelf/slot/port
adsl-profile: shelf/slot/port
atm-cc: atmVcCrossConnectIndex
atm-if: ifIndex
atm-if-stats: ifIndex
atm-traf-descr: index
atm-traf-descr-idx-next: index
atm-traf-descr-stats: index
atm-vcl: ifIndex/vpi/vci
atm-vcl-param: index
atm-vcl-stats: ifIndex/vpi/vci
atm-vpi: ifIndex/vpi
atm-vpl: ifIndex/vpi
bulk-statistic: index
```

```
bulk-statistics-config: index<SPACE> for next page, <CR>
for next line, A for all, Q to quit
```

Viewing records

To view the configured records of a particular type, enter **list** command then the name of the profile. For example:

```
zSH> list atm-vcl
atm-vcl  1-6-1-0-sonet/atm/0/35
atm-vcl  1-6-1-0-sonet/atm/0/36
atm-vcl  1-6-1-0-sonet/atm/0/37
atm-vcl  1-6-2-0-sonet/atm/0/35
atm-vcl  1-6-2-0-sonet/atm/0/36
atm-vcl  1-6-2-0-sonet/atm/0/37
```

To view all configured records on the system, use the list command with the wildcard character (*):

```
zSH> list *
aal2-audio-profile  7/1
aal2-audio-profile  7/2
aal2-audio-profile  7/3
aal2-audio-profile  8/1
aal2-audio-profile  8/2
aal2-audio-profile  9/1
aal2-audio-profile  10/1
aal2-audio-profile  10/2
aal2-audio-profile  11/1
aal2-audio-profile  11/2
aal2-audio-profile  12/1
aal2-audio-profile  12/2
aal2-audio-profile  12/3
atm-cc  14
atm-cc  5
atm-cc  6
atm-cc  7
atm-cc  8
atm-cc  1
<SPACE> for next page, <CR> for next line, A for all, Q to
quit
```

Viewing commands

To see a list of all the commands available, along with a short description of their use, enter the **help** command without arguments:

```
zSH> help
  1  help [commands]
  2  adduser
  3  ata - initialize/show ATA flash partitions.
```

```
    4  bootstate - <slot> display the boot state of a given
slot card
    5  cd - change current directory.
    6  changepass
    7  commit <profile-type> <profile-storage-key>
    8  copy - copy a file.
    9  create <profile-type> <profile-storage-key>
   10  del - Delete a file.
   11  delete <profile-type> <profile-storage-key>
    Wildcards may be used in the profile-storage-key.
   12  deleteuser <userName>
   13  dir - list directory contents.
   14  dump <[console] | [file filename] | [network host
filename]>
   15  eeset elementID elementValue <epromID> <slot>
   16  eeshow eepromName <slot>
   17  featurebitdisplay  <featurenum>
   18  featurebitset offset mask value hashCode
   19  fhrameping shelf/slot</port>
   20  file - download/upload files.
   21  filter command [arguments]
Type A<CR> to print all, <CR> to continue, Q<CR> to stop:
```

Getting help on a command

To get help on a particular command, enter the **help** command with the name of the command. For example:

```
zSH> help get
Usage: get <profile-type> <profile-storage-key>
 This command retrieves an existing profile record and
displays its contents.
 EX: zSH> get a-profile <profile-storage-key>
 zSH> show a-profile
     aField: ------>[0 - 1]
     bField: ------>[0 - 2]
     cField: ------>[0 - 5]
     dField: ------>[0 - 7]
 Note: A message is displayed if there is no record
matching the profile storage key
```

Finding a command

The **find** command allows you to search through the available commands. The command uses the following syntax:

find [-**s**(ubSearch) | -**d**(etailed)] *stringToSearch*

-s
Search the previous search results for the specified string.

-d
Search the online help for each command for the specified string.

-ds or -sd
Search the online help of the commands in the previous search for the
specified string.

substring
The string to search for.

For example, the following command finds all commands containing the
string "show":

```
zSH> find show
eeshow                          msgtrafficshow
show                            showdatetime
showlinestatus                  showlogo
showresolver                    showuser
showzhonecpe
```

Modifying records

The **new**, **update**, and **delete** commands are the primary commands to modify
records.

new command

The **new** command creates new profiles. Some profiles, such as those
associated with physical devices, can only be created if the device is installed
in the system.

The following example creates a new **ip-interface-record**. Press Enter to
accept the default value:

```
zSH> new ip-interface-record 1-1-1-0/ip
Please provide the following: [q]uit.
vpi: --------------->  {0}:
vci: --------------->  {0}:
rdindex: ----------->  {1}:
dhcp: -------------->  {none}:  ** read-only **
addr: -------------->  {0.0.0.0}: 192.168.8.21
netmask: ----------->  {0.0.0.0}: 255.255.255.0
bcastaddr: --------->  {0.0.0.0}: 192.168.8.255
destaddr: ---------->  {0.0.0.0}:
farendaddr: -------->  {0.0.0.0}:
mru: --------------->  {1500}:
reasmmaxsize: ------>  {0}:
ingressfiltername: ->  {}:
egressfiltername: -->  {}:
pointtopoint: ------>  {no}:
mcastenabled: ------>  {yes}:
ipfwdenabled: ------>  {yes}:
mcastfwdenabled: --->  {yes}:
natenabled: -------->  {no}:
bcastenabled: ------>  {yes}:
ingressfilterid: --->  {0}:
```

```
egressfilterid: ----->  {0}:
ipaddrdynamic: ----->  {static}:
dhcpserverenable: -->  {false}:
...................
Save new record? [s]ave, [c]hange or [q]uit: s
Record created.
```

After entering the values the system displays the values you've entered and prompts you to save the record. If you want to save the changes, press **s**. If you want to make changes, press **c** to re-enter values. Press **q** at any time to quit without saving changes.

> **Note:** The CLI accepts abbreviated or complete input to modify records: You can enter **s** or **save** to save changes, enter **c** or **change** to make more changes, enter **q** or **quit** to stop without saving changes.

Displaying parameter values

There are two ways to display valid values for a parameter, with the **show** command or inline while you are updating the record.

To use the **show** command:

```
zSH> show ip-interface-record
vpi:-------------->     {0 - 4095}
vci:-------------->     {0 - 65535}
rdindex:---------->     {0 - 2147483647}
dhcp:------------->     none  client  server  both
addr:------------->     {0 - -1}
netmask:---------->     {0 - -1}
bcastaddr:-------->     {0 - -1}
destaddr:--------->     {0 - -1}
farendaddr:------->     {0 - -1}
mru:-------------->     {0 - 2147483647}
reasmmaxsize:----->     {0 - 65535}
ingressfiltername:->    {33}
egressfiltername:-->    {33}
pointtopoint:----->     no  yes
mcastenabled:----->     no  yes
ipfwdenabled:----->     no  yes
mcastfwdenabled:--->    no  yes
natenabled:-------->    no  yes
bcastenabled:----->     no  yes
ingressfilterid:--->    {0 - 2147483647}
egressfilterid:---->    {0 - 2147483647}
ipaddrdynamic:----->    static  ppp  dhcpclient
dhcpserverenable:-->    true  false
NOTE: Supported VPI/VCI ranges vary based on card type.
See documentation for the exact range of supported VPI/
VCI values
```

To use view the valid enumerated values while updating the record, enter a question mark (**?**) when prompted for a value:

```
zSH> update ip-interface-record 1-2-1-0/ip
Please provide the following: [q]uit.
vpi: --------------->  {0}: ?
Invalid entry: vpi range: [0 to 4095]
vpi: --------------->  {0}:
vci: --------------->  {0}:
rdindex: ----------->  {1}:
dhcp: -------------->  {none}:  ** read-only **
addr: -------------->  {192.168.80.190}: ?
Invalid IP address format. Try "n.n.n.n", where n is 0 to
255
addr: -------------->  {192.168.80.190}:
netmask: ----------->  {255.255.252.0}:
bcastaddr: --------->  {192.168.83.255}:
destaddr: ---------->  {0.0.0.0}:
farendaddr: -------->  {0.0.0.0}:
mru: --------------->  {1500}:
reasmmaxsize: ------>  {0}:
ingressfiltername: ->  {}:
egressfiltername: -->  {}:
pointtopoint: ------>  {no}:
mcastenabled: ------>  {yes}:
ipfwdenabled: ------>  {yes}:
mcastfwdenabled: --->  {yes}:
natenabled: -------->  {no}:
bcastenabled: ------>  {yes}:
ingressfilterid: --->  {0}:
egressfilterid: ---->  {0}:
ipaddrdynamic: ----->  {static}:
dhcpserverenable: -->  {false}:
```

update command

The **update** command changes an existing record. The command uses the following syntax:

The following example updates an **ip-interface-record**:

```
zSH> update ip-interface-record 1-1-1-0/ip
Please provide the following: [q]uit.
vpi: --------------->  {0}:
vci: --------------->  {0}:
rdindex: ----------->  {1}:
dhcp: -------------->  {none}:  ** read-only **
addr: -------------->  {192.168.8.21}: 192.168.8.23
netmask: ----------->  {255.255.255.0}:
bcastaddr: --------->  {192.168.8.255}:
destaddr: ---------->  {0.0.0.0}:
farendaddr: -------->  {0.0.0.0}:
mru: --------------->  {1500}:
reasmmaxsize: ------>  {0}:
```

```
ingressfiltername: ->  {}:
egressfiltername: -->   {}:
pointtopoint: ------>   {no}:
mcastenabled: ------>   {yes}:
ipfwdenabled: ------>   {yes}:
mcastfwdenabled: --->   {yes}:
natenabled: -------->   {no}:
bcastenabled: ------>   {yes}:
ingressfilterid: --->   {0}:
egressfilterid: ---->   {0}:
ipaddrdynamic: ----->   {static}:
dhcpserverenable: -->   {false}:
....................
Save changes? [s]ave, [c]hange or [q]uit: s
Record updated.
```

delete command

The **delete** command deletes an existing record. You can delete a single record by specifying the address or the index, or multiple records by using a wildcard (*****).

Some records, such a **card-profiles**, delete all associated records when you delete them.

ifTypes

Table 2 lists the ifTypes used in Zhone devices.

> ✎ **Tip:** When entering an record address, you can specify either the ifType name or its number.

Table 2: ifTypes

ifType	Number	Description
EthernetCsmacd	6	Ethernet
ds1	18	DS1 or E1
basicISDN	20	ISDN BRI
primaryISDN	21	ISDN PRI
ppp	23	Point-to-point protocol
DS3	30	DS3
rs232	33	RS-232
atm	37	ATM cells
sonet	39	SONET or SDH

Table 2: ifTypes (Continued)

ifType	Number	Description
V35	45	V.35
AAL5	49	ATM Adaptation Layer 5
ISDN	63	ISDN or X.25
Async	84	Asynchronous protocols
ADSL	94	Asymmetric Digital Subscriber Loop (ADSL)
radsl	95	Rate-adaptive Digital Subscriber Loop
voiceEM	100	Voice receive and transmit
voiceFXO	101	Foreign Exchange Office
voiceFXS	102	Foreign Exchange Station
voiceEncap	103	Voice encapsulation
voiceOverIp	104	Voice over IP encapsulation
atmima	107	Inverse multiplexing over ATM
IP	126	Internet Protocol
voiceOverATM	152	Voice over ATM
rfc1483	159	Multiprotocol over ATM AAL5
hdsl2	168	High Bit-Rate DSL, 2nd generation or SDSL
shdsl	169	Multirate HDSL2

CLI shortcuts

This section describes the following CLI shortcuts:

- Command completion, page 22
- Command shortcuts, page 23

Command completion

Command completion provides a shortcut to entering commands and profile names at the CLI. If you type part of a command or profile name and then press the TAB key, the CLI will present you with either the remaining portion of the command/profile name or a list of possible completions.

If there is one option to complete the line, the CLI will provide the complete command or profile name (as in the following command and profile examples).

```
zSH> sw <TAB>
zSH> swversion
```

If there is more than one option to complete the line, the CLI will display a list of options that could complete command or profile (as in the following command and profile examples).

```
zSH> show <TAB>
 show
 showdatetime
 showhost
 showinetstat
 showipstat
 showlinestatus
 showmem
 showresolver
 showuser
 showzhonecpe
zSH> show

zSH> list atm <TAB>
 atm-if
 atm-if-stats
 atm-traf-descr
 atm-traf-descr-idx-next
 atm-traf-descr-stats
 atm-vcl
 atm-vcl-stats
zSH> list atm-
```

Command shortcuts

The Zhone CLI supports vi-like commands. This section describes the CLI command shortcuts.

Basic control commands

Table 3 describes the basic commands to edit, delete, and enter commands into the system.

Table 3: Basic control commands

Command	Description
ESC	Switch the line editing mode from regular input mode.
ENTER	Enter line and leave edit mode.
CTRL + H	Delete a character (backspace).

Table 3: Basic control commands

Command	Description
CTRL + U	Delete and entire line (in edit mode).
CTRL + L	Redraw a line (in edit mode).
CTRL + S	Suspend output.
CTRL + Q	Resume output.

Movement and search commands

Table 4 describes the movement and search commands.

Table 4: Movement and search commands

Command	Description
nG	Go to command n.
/string	Search for the specified string backward in the history buffer.
?string	Search for the specified string forward in the history buffer.
n	Repeats the last search.
nk or n-	Execute the nth previous shell command.
nj or n+	Execute the nth next shell command.
nh	Move the cursor n characters to the left.
nl or SPACE.	Move the cursor n characters to the right.
nw	Move the cursor n words forward. (Words are separated by blanks or punctuation.)
nW	Move the cursor n large words forward. (Large words are separated by blanks only.)
ne	Move the cursor to the end of the next nth word. (Words are separated by blanks or punctuation.)
nE	Move the cursor to the end of the next nth large word. (Large words are separated by blanks only.)
nb	Move the cursor back n words. (Words are separated by blanks or punctuation.)
nB	Move the cursor back n large words. (Large words are separated by blanks only.)
$	Move cursor to end of the current line.
0	Move cursor to the beginning of the line.

Table 4: Movement and search commands (Continued)

Command	Description
^	Move cursor to the first non-blank character.
fc	Search forward for the character c.
Fc	Search backward for the character c.

Insert and change commands

Table 5 describes the insert and change commands.

Table 5: Insert and change commands

Command	Description
a	Append text.
A	Append text at the end of line.
i	Insert text.
I	Insert text at the end of the line.
ns	Change n characters.
nc SPACE	Change n characters.
cw	Change word.
cc or S	Change the entire line.
c$ or C	Change from cursor to end of line.
c0	Change from the cursor to the beginning of the line.
R	Type over characters.
nrc	Replace following n characters with c.
~	Toggle case, lower to upper, or upper to lower.

Delete commands

Table 6 describes the delete commands.

Table 6: Delete commands

Command	Description
nx	Delete n characters, beginning at the cursor.
nX	Delete n characters to the left of the cursor.
dw	Delete word.
dd	Delete entire line.

Table 6: Delete commands

Command	Description
d$ or D	Delete text from the cursor to the end of the line.
d0	Delete text from the cursor to the beginning of the line.

Put and undo commands

Table 7 describes the put and undo commands.

Table 7: Put and undo commands

Command	Description
p	Put last deletion after the cursor.
P	Put last deletion before the cursor.
u	Undo last command.

2 COMMANDS

This chapter describes each of the CLI commands.

A

adduser

Creates a new user account and adds it to the database. The command also generates a random password which the user can change with the **changepass** command.

Syntax `adduser`

Follow the system prompts.

Example
```
zSH> adduser
Please provide the following: [q]uit.
User Name: jjsmith
User Prompt[zSH>]:
Please select user access levels.
admin: -------->  {no}: yes
zhonedebug: -->   {no}:
voice: -------->  {no}:
data: --------->  {no}:
manuf: -------->  {no}:
database: ---->   {no}:
systems: ----->   {no}:
tool: --------->  {no}:
useradmin: --->   {no}:
..................................
User name:(jjsmith)  User prompt:(zSH>)
Access Levels:
(admin)
Save new account? [s]ave, [c]hange or [q]uit: s
User record saved.
TEMPORARY PASSWORD: sqgUr2J7
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **changepass**, **deleteuser**

alarm

Displays all active alarms since the last system reboot.

Syntax `alarm show [summary]`

Options **show**

Displays the alarm totals and lists alarm details, such as resource ID and alarm type and alarm severity.

summary

Displays only alarm totals.

Example
```
zSH> alarm show
zSH> alarm show
************    Central Alarm Manager     ************
          ActiveAlarmCurrentCount       :8
          ActiveAlarmTotalCount         :9
          ClearAlarmTotalCount          :1
          OverflowAlarmTableCount       :0

ResourceId        AlarmType                  AlarmSeverity
1-1-1-0/sonet     linkDown                   critical
1-3-1-0/adsl      linkDown                   minor
1-3-4-0/adsl      linkDown                   minor
1-3-5-0/adsl      linkDown                   minor
1-3-6-0/adsl      linkDown                   minor
1-3-12-0/adsl     linkDown                   minor
1-3-13-0/adsl     linkDown                   minor
1-1-1-0/sonet     sonetSectionStatusChange   major
```

Access Level admin

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **powermon**

ata

Initializes, formats, or displays the contents of the system flash cards.

⚠️ **Caution:** Formatting or initializing a PC card destroys all existing data on the card.

Syntax `ata [ show | format | init ] slot`

Options **show**

Displays the flash partition table in the specified PC card.

format

Formats the specified PC card.

init

Initializes the specified PC card by creating partitions and a file system. This destroys all existing data on the card.

slot
　　The slot that contains the PC card.

Access Level　admin

Products　BAN, MALC, Raptor 319, Raptor 719, Raptor 723

atmping

Sends an ATM OAM F4 and F5 loopback cell to a VCL.

> ✓ **Note:** You must turn on logging before issuing the **atmping** command.

Syntax　**atmping [*ifindex/vpi/vci*] | [*name/type/vpi/vci*] | [*shelf/ slot/port/subport/type/vpi/vci*] [segmentF4/F5 | endtoendF4/F5]**

Options　**ifindex**
　　The ifindex of the interface Use the **lineGroup** command to find the ifindex.

vpi
　　The virtual path identifier of the ATM interface.

vci
　　The virtual path identifier of the ATM interface.

name
　　The name of the interface (for example, **uplink1**, or a user-defined name configured in the **if-translate** profile for the interface).

shelf/slot/port/subport
　　The physical location of the interface. For the Sechtor 100A and the Z-Edge, shelf and slot are always 1.

type
　　IANA type for the interface. For example, **adsl**, **ds1**, **ds3**, **hdsl2**, **sonet**.

segmentF4/F5
　　Sends the ping to the next ATM interface using either F4 (VP) or F5 (VC) loopback cells. This option is currently unsupported.

endtoendF4/F5
　　Sends the ping to the far-end ATM interface.

Example　Enable logging before issuing a **atmping** command.

```
zSH> log serial on
Serial port logging enabled.
```

If you are connected to the device over a network:

```
zSH> log session on
Logging enabled.
```

Find the VCL which you want to ping:

```
zSH> list atm-vcl
atm-vcl  1-1-1-0-hdsl2/atm/0/35
atm-vcl  1-1-1-0-hdsl2/atm/0/36
atm-vcl  1-1-16-0-hdsl2/atm/0/37
```

For example, to manually send segment and end-to-end OAM F4 loopbacks and segment OAM F5 loopbacks, issue the following commands:

```
zSH> atmping uplink1/atm/0/37 segmentf4
zSH> Received OAM ping response for uplink1, vpi 0 ,vci 37
APR 06 20:31:22: info   : 1/1/16 : atmmgr: atmMgrDrv.c:
AtmMgrOamPingRspProcess(): l=4492: atmmgr: Received OAM
ping response for uplink1, vpi 0, vci 37
```

```
zSH> atmping uplink1/atm/0/37 endtoendf4
zSH> Received OAM ping response for uplink1, vpi 0 ,vci 37
APR 06 21:00:18: info   : 1/1/16 : atmmgr: atmMgrDrv.c:
AtmMgrOamPingRspProcess(): l=4492: atmmgr: Received OAM
ping response for uplink1, vpi 0, vci 37
```

```
zSH> atmping uplink1/atm/0/37 segmentf5
zSH> Received OAM ping response for uplink1, vpi 0 ,vci 37
APR 06 20:32:11: info   : 1/1/16  : atmmgr: atmMgrDrv.c:
AtmMgrOamPingRspProcess(): l=4492: atmmgr: Received OAM
ping response for uplink1, vpi 0, vci 37
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge

atmvclshow

The **atmvclshow** command provides the administrative user with the ability to view Virtual Channel Link (VCL) status information, as well as audit members in a traffic descriptor group.

Syntax `atmvclshow [port  [vpi vci]]`

Options **(no option)**
Displays global information of all ATM VCL records on the system.

port
Displays all ATM VCL records on the specified port.

port vpi vci
Displays the ATM VCL record on a singular occurrence of a VCL.

Example 1 This first example displays a global ATM VCL record which includes the task state, message count, error rate, and shelf/slot/port/VPI/VCI information. In this instance, the ATM VCL record displays information on shelf 1, slot 1, port 8.

```
zSH> atmvclshow
ATMMGR task state = READY
```

```
ATMMGR rx msg cnt = 1778
ATMMGR rx errors = 0
shelf = 1 slot = 1
VC Switched vpi = 4 vci = 202 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=263 intVpi = 0 intVci = 36

VC Switched vpi = 4 vci = 203 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=262 intVpi = 0 intVci = 35

VC Switched vpi = 4 vci = 208 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=261 intVpi = 0 intVci = 34
<SPACE> for next page, <CR> for next line, A for all, Q to quit
```

Example 2   This second example shows all of the ATM VCL records. In this instance, the ATM VCL record displays status information of all VCLs on port 1.

```
zSH> atmvclshow 1
ATMMGR task state = READY
ATMMGR rx msg cnt = 1779
ATMMGR rx errors = 0
shelf = 1 slot = 1

VC Switched vpi = 4 vci = 202 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=263 intVpi = 0 intVci = 36

VC Switched vpi = 4 vci = 203 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=262 intVpi = 0 intVci = 35

VC Switched vpi = 4 vci = 208 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=261 intVpi = 0 intVci = 34
<SPACE> for next page, <CR> for next line, A for all, Q to quit
```

Example 3   This third example shows the ATM VCL record on a specific VCL as defined by the port, VCI, and VPI. In this instance, the ATM VCL record displays port 1, VPI of 4, and VCI of 202.

```
zSH> atmvclshow 1 4 202
ATMMGR task state = READY
ATMMGR rx msg cnt = 1779
ATMMGR rx errors = 0
shelf = 1 slot = 1

VC Switched vpi = 4 vci = 202 ifIndex = 0xc (12)  port = 1
        rxTdIndex = 1 txTdIndex = 1
        MPHY bank = 0 Priority Queue = 0
        vclState = active  adminStatus = up, AALType = aal2(6)
        connId=263 intVpi = 0 intVci = 36
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A

B

bond show

Display the configured bond groups by link interface, bond group, slot number, or a bond groups on a device.

Syntax **bond show all | slot *slotNum* | group *groupName* | link *interface***

Options **all**

Displays all bond groups on a device.

slot *slotnum*

Displays all bond groups for the specified slot.

group *groupname*

Displays all bond groups for the specified bond group, for example 1-2-103-0/n2nbond.

link *interface*

Displays all bond groups and group members for the specified interface and type, for example 1-2-1-0/ds1.

Example 1 zSH> **bond show all**

```
                  Bond Groups
     Slot    GrpId    Name          Type        State
      8      207      1-8-207-0     n2nbond     ACT
      8      201      1-8-201-0     n2nbond     OOS
      8      203      1-8-203-0     n2nbond     ACT
```

Example 2 zSH> **bond show slot 8**

```
                  Bond Groups
     Slot    GrpId    Name          Type        State
      8      207      1-8-207-0     n2nbond     ACT
      8      201      1-8-201-0     n2nbond     OOS
```

```
       8        203        1-8-203-0        n2nbond     ACT
```

Example 3 zSH> **bond show group 1-8-203-0/n2nbond**

```
                        Bond Groups
        Slot    GrpId       Name            Type       State
         8       203       1-8-203-0        n2nbond     ACT


                        Group Members
        Slot    Port        Name            Type       State
         8       3        1-8-3-0          ds1         ACT
         8       4        1-8-4-0          ds1         ACT
         8       5        1-8-5-0          ds1         ACT
```

Example 4 zSH> **bond show group 112**

```
                        Bond Groups
        Slot    GrpId       Name            Type       State
         8       207       1-8-207-0        n2nbond     ACT
                        Group Members
        Slot    Port        Name            Type       State
         8       7        1-8-7-0          ds1         ACT
         8       8        1-8-8-0          ds1         ACT
```

bootstate

Displays the boot state of a card in the system.

Syntax **bootstate *slotcard***

Options **slotcard**

Number of the slot card.

Example 1 The following example shows the slot card in slot 8 in the middle of loading its image.

```
zSH> bootstate 8
Boot State: Loading Image over backplane
```

Example 2 The following example shows the output of the **bootstate** command if there is no slot card in the slot:

```
zSH> bootstate 6
POST Result Register Value = 255
```

Example 3 The following example shows the output of the **bootstate** command for a slot card that has successfully booted:

```
zSH> bootstate 3
Boot State: BootMgr: Booting Completed Successfully
```

Access Level user

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **slotreboot**

bridge

The **bridge** command can add, delete, or show bridges. A flush option is also available to purge bridge filters of learned MAC entries, either separately or for a specified interface. The MALC supports a maximum of 1024 bridges.

> ✓ **Note:** Only learned bridge entries are purged with this command. Static bridge entries are not removed with this command.

Syntax `bridge add` *interface*/*type*

`[vc` *vpi/vci]* `[tc` *tcvalue]* `[td` *tdvalue* `| txtd` *txtdvalue* `|`
`rxtd` *rxtdvalue]* `other | llc [uplink | downlink |`
`intralink | tpid` *tpid value]* `| vlan` *vlan_id* `| slan` *slan*
value `| tagged | untagged] [cos` *cosvalue]* `[outcosall`
outcos value] `scos` *scos value* `| soutcosall` *soutcos value*
`| video` *mcastctrl/maxvideostreams* `| config`
confgiGroupIndex `|` *pppoa* `| name` *ifname*

add
    Add a bridge interface on the specified physical interface.

interface/type
    Name and type of the physical interface.

> ✓ Note: In the bridge add command, <slot> and <port> may be replaced with brackets containing numbers in series and/or (dash-separated) ranges; <port> may be replaced with wildcard '*' for all ports on the card.
> Examples:
>
> zSH> **bridge add 1-3-*-0/adsl vc 0/37 td 3661 downlink vlan 500**
>
> zSH> **bridge add 1-[10-13]-[1,3-5,21]-0/ds3 vc 0/37 td 3661 downlink vlan 500**

vc *vpi/vci*
    Used to specify the VPI and VCI values for ATM circuits. For example: **0/23**. This is a mandatory field if you are creating a bridge on an ATM logical interface. This is field is not required if you are creating a bridge on an Ethernet interface.

tc *tcvalue*
    Traffic container information. This is a mandatory field if you are creating a bridge on a PON physical interface. This field is not required for non-PON interfaces.

td *tdvalue* | **rxtd** *rxtdvalue* | **txtd** *txtdvalue*
    Used to specify the traffic descriptor index to be used. Optionally, separate **rxtd** *rxtdvalue* and **txtd** *txtdvalue* values may be specified for ADSL connections, where separate traffic descriptors are used for the

upstream and downstream traffic due to the asymmetric nature. This is a mandatory field if you are creating a bridge on an ATM logical interface. This is field is not required if you are creating a bridge on an Ethernet interface.

other | llc

The type of AAL5 data encapsulation used: **llc** sets logical link control encapsulation over AAL5, which is commonly used with routers; **other** sets RFC 1483 multiprotocol encapsulation over AAL5, which is commonly used with bridges. If no value is given, the AAL5 encapsulation type default is **llc**.

uplink | downlink | intralink

Indicates bridging behavior of the interface. This field is omitted when creating transparent bridges.

- Uplink

  Causes the interface to forward packets to the network. Uplink interfaces support one or more bridging domains and allow VLANs that terminate on a MALC IP interface. Broadcasts received on an uplink port are not sent to any downlink port, except for ARP and DHCP when **customARP** and **customDHCP** options are enabled. Unicast packets received on an uplink are forwarded to the downlink where the MAC address was learned. Uplink ports do not learn MAC addresses and do not strip or insert VLAN tags.

- downlink

  Causes the interface to send packets to the customer interface. Requires a specific VLAN ID or VLAN tagging.

  Downlink interfaces with a specific VLAN ID perform strip and insert function for outgoing and incoming traffic and learn MAC addresses. All traffic (unicast and broadcast) received on a downlink is sent to the default interface as specified in the **bridge-path default** command.

  Tagged downlink interfaces do not strip and insert VLAN tags. Other downlink interface functions are identical.

- Intralink

  Causes the interface to forward all traffic from the uplink that is not local.

- No value creates a transparent bridge. Transparent bridges send broadcasts to all ports, learn an unlimited number of MAC addresses on a port, and allow any port to send traffic to any other port.

vlan *vlan_id*

VLAN identifier associated with the interface. This is a mandatory field for downlink interfaces that do not use the tagged option.

slan *slan_id*

SLAN or secondary VLAN identifier associated with the interface.

tagged | untagged

The tagged/untagged status of the bridge. The tagged option is a mandatory field if you are creating a VLAN on a downlink interface and do not specify a specific LAN ID.

cos *cos_value*
>   Class of Service level associated with the interface.

outgoingCOSOption
>   Specifies whether to overwrite the VLAN priority bits on packets bridged
>   out this interface with the value specified in the outgoingCOSValue
>   parameter. Values are disable and all. Disable indicates the VLAN
>   priority bit is untouched. All overwrites all the VLAN priority bits on
>   packets bridged out this interface with the value specified in the
>   outgoingCOSValue parameter. The default is disable.

outgoingCOSValue
>   For tagged packets, specifies the value loaded into the priority field of the
>   VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the
>   highest. The default value is 0.

video m/n
>   Specifies the multicast control list and the maxvideostreams for the video
>   signal.
>
>   Maxvideostreams specifies the maximum number of allowed video
>   streams. To enable this setting, the multicast control list must be used.
>   This option is only available when for bridge video configuration.
>
>   Mcastctrl specifies the multicast control list to use. This option is only
>   available when for bridge video configuration.

config *configGroupIndex*
>   Specifies the bridge config group for this bridge interface. A
>   bridge-config-record with this group index must exist.

pppoa
>   Specifies this is a PPPoA port.

name *ifname*
>   The name for the interface. This is an optional field.

Syntax `bridge modify interface/type uplink | downlink | intralink | tpid tpid value| vlan vlan_id | slan slan value | tagged | untagged] [cos cosvalue] [outcosall outcos value] scos scos value | soutcosall soutcos value | video mcastctrl/maxvideostreams | config confGroupIndex | pppoa |name ifname`

interface/type
>   Name and type of the physical interface.

✅ **Note:**

> `zSH> ` **`bridge modify 1-5-*-0/shdsl vc 0/35 maxUnicast 9`**
>
> `zSH> ` **`bridge modify 1-5-[1,2]-0/shdsl vc 0/35 vlan 3`**

---

uplink | downlink | intralink
>   Indicates bridging behavior of the interface. This field is omitted when
>   creating transparent bridges.

- Uplink

  Causes the interface to forward packets to the network. Uplink interfaces support one or more bridging domains and allow VLANs that terminate on a MALC IP interface. Broadcasts received on an uplink port are not sent to any downlink port, except for ARP and DHCP when **customARP** and **customDHCP** options are enabled. Unicast packets received on an uplink are forwarded to the downlink where the MAC address was learned. Uplink ports do not learn MAC addresses and do not strip or insert VLAN tags.

- downlink

  Causes the interface to send packets to the customer interface. Requires a specific VLAN ID or VLAN tagging.

  Downlink interfaces with a specific VLAN ID perform strip and insert function for outgoing and incoming traffic and learn MAC addresses. All traffic (unicast and broadcast) received on a downlink is sent to the default interface as specified in the **bridge-path default** command.

  Tagged downlink interfaces do not strip and insert VLAN tags. Other downlink interface functions are identical.

- Intralink

  Causes the interface to forward all traffic from the uplink that is not local.

- No value creates a transparent bridge. Transparent bridges send broadcasts to all ports, learn an unlimited number of MAC addresses on a port, and allow any port to send traffic to any other port.

vlan *vlan_id*

VLAN identifier associated with the interface. This is a mandatory field for downlink interfaces that do not use the tagged option. Multiple VLAN interfaces can be added to the same physical port and VC.

slan *slan_id*

SLAN or secondary VLAN identifier associated with the interface.

tagged | untagged

The tagged/untagged status of the bridge. The tagged option is a mandatory field if you are creating a VLAN on a downlink interface and do not specify a specific LAN ID.

cos *cos_value*

Class of Service level associated with the interface.

outgoingCOSOption

Specifies whether to overwrite the VLAN priority bits on packets bridged out this interface with the value specified in the outgoingCOSValue parameter. Values are disable and all. Disable indicates the VLAN priority bit is untouched. All overwrites all the VLAN priority bits on packets bridged out this interface with the value specified in the outgoingCOSValue parameter. The default is disable.

outgoingCOSValue

For tagged packets, specifies the value loaded into the priority field of the VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the highest. The default value is 0.

video m/n

Specifies the multicast control list and the maxvideostreams for the video signal.

Maxvideostreams specifies the maximum number of allowed video streams. To enable this setting, the multicast control list must be used. This option is only available when for bridge video configuration.

Mcastctrl specifies the multicast control list to use. This option is only available when for bridge video configuration.

config *configGroupIndex*

Specifies the bridge config group for this bridge interface. A bridge-config-record with this group index must exist.

pppoa

Specifies this is a PPPoA port.

name *ifname*

The name for the interface. This is an optional field.

Syntax `bridge delete Interface/type vc vpi/vci [vlan vlanID]`

delete

Delete a bridge interface from the specified physical interface.

Interface/type

Name and type of the physical interface, such as **1-4-3-0/adsl**.

Note: In the bridge delete command, <slot> and <port> may be replaced with brackets containing numbers in series and/or (dash-separated) ranges; <port> may be replaced with wildcard '*' for all ports on the card.
Examples:
1-[10-13]-[1,3-5,21]-0/ds3 for DS3 ports 1,3,4,5,21 on cards 10,11,12, and 13.
1-[6,7,9]-*-0/adsl for all ADSL ports on cards 6, 7, and 9.

---

vc *vpi/vci*

ATM layer information for bridge over ATM (for example, vc 0/35). Omitted for bridge over Ethernet

vlan *vlanID*

For downlink bridges with VLANS, to delete the bridge the VLAN ID must be specified.

Syntax `bridge show vlan vlan_id | interfaceName/bridge`

show

The **bridge show** command displays a truncated record for the bridge.

vlan *vlan_id*
> List all bridge interfaces for the specified VLAN. This includes tagged interfaces, but only the bridge filter table information for the specified VLAN is displayed.

*interfaceName***/bridge**
> List only the information for specified bridge interface.

Syntax `bridge showall vlan `*`vlan_id`*` | interfaceName/bridge`

showall
> The **bridge showall** command displays the entire contents of bridge record.

Syntax `bridge flush <<interface> `*`<ifIndex>`*`|`*`<name>/<type>`*`>> | mac `*`<vlan> <MAC addr>`*`> | all`

ifIndex
> ifIndex value of the bridge interface.

interface/type
> Name and type of the bridge interface.

vlan
> VLAN identifier associated with the bridge interface. For the **mac** option, the vlan must be specified even if it is 0.

MAC_addr
> The MAC address associated with the specified VLAN. The **mac_address** is in hexadecimal notation (for example, 00:01:02:03:04:05).

all
> Clears all MAC addresses on all interfaces.

Syntax `bridge igmp bridge igmp | slot `*`slotnumber`*` | `*`interfaceName/bridge`*

slot *slot number*
> Displays IGMP information for the bridges configured on the specified slot.

interfacename **bridge**
> Displays IGMP information for the bridges configured on the specified interface.

Syntax `bridge stats | clear | vlan `*`vlanId`*` |`*`interfaceName/bridge`*

Show statistics for bridge interfaces. If no option is specified, statistics are displayed for all bridges.

clear
> Clears the statistics for the bridge interfaces.

vlan vlanId

Displays bridge interfaces statistics for the specified VLAN.

interfaceName
Displays bridge interfaces statistics for the specified bridge interface.

Example 1 Create an untagged downlink (over ATM):

```
zSH> bridge add 1-7-1-0/shdsl vc 0/35 td 1 downlink vlan vlan-id
```

Example 2 Create a tagged downlink (over ATM):

```
zSH> bridge add 1-7-1-0/shdsl vc 0/35 td 1 downlink tagged
```

Example 3 Create an uplink over Ethernet:

```
zSH> bridge add 1-1-1-0/ethernetcsmacd uplink
```

Example 4 Delete an untagged downlink (over ATM):

```
zSH> bridge delete 1-7-1-0/shdsl vc 0/35
```

Example 5 Delete a tagged downlink (over ATM):

```
zSH> bridge delete 1-7-1-0/shdsl vc 0/35
```

Example 6 Delete an uplink over Ethernet:

```
zSH> bridge delete 1-1-1-0/ethernetcsmacd
```

Example 7 Display bridges created:

```
zSH> bridge show
VLAN   Bridge                          State   Table Data
-----------------------------------------------------------------
     0 1-8-2-0-adsl-0-101/bridge      UP
     0 1-1-1-0-ethernetcsmacd/bridge  UP
```

Example 8 This example adds interface 1-8-22-0/adsl with a vlanIDCOS value of 7. This value is inserted into the priority field of the VLAN header when an untagged packet received on this interface is tagged (VLAN ID inserted) for bridging.

```
bridge add 1-8-22-0/adsl vc 0/35 td 20000 downlink vlan 100 tagged COS 7
```

Example 9 This example adds interface 1-8-22-0/adsl with a vlanIDCOS value of 7 and enables the overwriting of the VLAN ID in all outgoing packets with the value of 7.

```
bridge add 1-8-22-0/adsl vc 0/35 td 20000 downlink vlan 100 tagged COS 7 outCOS
all 7
```

Example 10 Purges the learned MAC entries and IGMP client tables for the specified bridge interface.

```
zSH> bridge showall
VLAN   Bridge                          State   Table Data
-----------------------------------------------------------------
```

```
   0     1-3-1-0-adsl-0-35/bridge      UP    D 00:00:00:00:00:01
                                             D00:02:b9:72:9d:41
                                             D 10.1.1.2
   0     ethernet2/bridge              UP    S Global default [3600 sec]
   0     1-3-2-0-adsl-0-35/bridge      UP    D 00:00:00:00:00:02
                                             D 223.30.2.130
```

zSH> bridge flush interface 1-3-1-0-adsl-0-35/bridge

zSH> bridge showall
```
VLAN   Bridge                     State  Table Data
-------------------------------------------------------------------
   0     1-3-1-0-adsl-0-35/bridge      UP
   0     ethernet2/bridge              UP    S Global default [3600 sec]
   0     1-3-2-0-adsl-0-35/bridge      UP    D 00:00:00:00:00:02
                                             D 223.30.2.130
```

Example 11   Purges the learned MAC entries for the specified VLAN and MAC address.

zSH> bridge showall
```
VLAN   Bridge                     State  Table Data
-------------------------------------------------------------------
   0     1-3-1-0-adsl-0-35/bridge      UP    D 00:01:38:31:f1:6e
                                             D 00:02:b9:72:9d:41
                                             D 223.30.1.130
   0     ethernet2/bridge              UP    S Global default [3600 sec]
   0     1-3-2-0-adsl-0-35/bridge      UP    D 00:00:00:00:00:02
                                             D 00:01:38:31:ee:fb
                                             D 223.30.2.130
```

zSH> bridge flush mac 0 00:01:38:31:f1:6e

zSH> bridge showall
```
VLAN   Bridge                     State  Table Data
-------------------------------------------------------------------
   0     1-3-1-0-adsl-0-35/bridge      UP    D 00:02:b9:72:9d:41
                                             D 223.30.1.130
   0     ethernet2/bridge              UP    S Global default [3600 sec]
   0     1-3-2-0-adsl-0-35/bridge      UP    D 00:00:00:00:00:02
                                             D 00:01:38:31:ee:fb
                                             D 223.30.2.130
```

Example 12

zSH> bridge stats
```
Interface                 Received Packets      Transmitted Packets
Name                      UCast  MCast  BCast   UCast  MCast  Bcast  Error
1-16-8-0-shdsl-0-35-835   0      0      1       0      0      0      0
1-16-8-0-shdsl-0-35-635   0      0      0       0      0      0      0
1-16-24-0-shdsl-0-35-835  0      0      0       0      0      0      1
```

zSH> bridge stats vlan 835
```
Interface                 Received Packets      Transmitted Packets
```

```
Name                            UCast  MCast  BCast   UCast  MCast  Bcast  Error
1-16-8-0-shdsl-0-35-835         0      0      1       0      0      0      0
1-16-24-0-shdsl-0-35-835        0      0      0       0      0      0      1
```

```
zSH> bridge stats clear 1-16-24-0-shdsl-0-35-835
Bridge statistics cleared for 1-16-24-0-shdsl-0-35-835
```

Example 13

```
zSH> bridge igmp
VlanID MAC Address        MCAST IP          Ifndx Host MAC         Last Join
------------------------------------------------------------------------------
   999 01:00:5e:02:7f:fe 224.2.127.254       921 00:02:02:0b:4a:a0          2
   999 01:00:5e:02:7f:fe 224.2.127.254       922 00:02:02:0a:bb:6d        106
   999 01:00:5e:02:7f:fe 224.2.127.254       923 00:02:02:0a:c0:b7         87
   999 01:00:5e:02:7f:fe 224.2.127.254       924 00:02:02:0b:4e:c5        172
   999 01:00:5e:02:7f:fe 224.2.127.254       925 00:02:02:0b:4c:7e         65
   999 01:00:5e:02:7f:fe 224.2.127.254       926 00:02:02:0b:4f:08         46
   999 01:00:5e:02:7f:fe 224.2.127.254       927 00:02:02:09:c1:7d         90
   999 01:00:5e:02:7f:fe 224.2.127.254       928 00:02:02:0b:44:cd         71
   999 01:00:5e:02:7f:fe 224.2.127.254       929 00:02:02:0b:4c:ca         61
   999 01:00:5e:02:7f:fe 224.2.127.254       930 00:02:02:0b:47:bd          7
   999 01:00:5e:02:7f:fe 224.2.127.254       931 00:02:02:0b:47:c7        177
   999 01:00:5e:02:7f:fe 224.2.127.254       932 00:02:02:0b:4d:35        181
   999 01:00:5e:02:7f:fe 224.2.127.254       933 00:02:02:0b:4d:5b        144
   999 01:00:5e:02:7f:fe 224.2.127.254       934 00:02:02:0b:4a:a5         59
   999 01:00:5e:02:7f:fe 224.2.127.254       935 00:02:02:0b:4c:9e          3
   999 01:00:5e:02:7f:fe 224.2.127.254       936 00:02:02:09:c1:78          6
   999 01:00:5e:02:7f:fe 224.2.127.254       937 00:02:02:0a:c0:ca        131
```

```
zSH> bridge igmp slot 3
VlanID MAC Address        MCAST IP          Ifndx Host MAC         Last Join
------------------------------------------------------------------------------
   999 01:00:5e:02:7f:fe 224.2.127.254       921 00:02:02:0b:4a:a0        166
   999 01:00:5e:02:7f:fe 224.2.127.254       922 00:02:02:0a:bb:6d         72
   999 01:00:5e:02:7f:fe 224.2.127.254       923 00:02:02:0a:c0:b7         51
   999 01:00:5e:02:7f:fe 224.2.127.254       924 00:02:02:0b:4e:c5        134
   999 01:00:5e:02:7f:fe 224.2.127.254       925 00:02:02:0b:4c:7e         34
   999 01:00:5e:02:7f:fe 224.2.127.254       926 00:02:02:0b:4f:08         14
   999 01:00:5e:02:7f:fe 224.2.127.254       927 00:02:02:09:c1:7d         56
   999 01:00:5e:02:7f:fe 224.2.127.254       928 00:02:02:0b:44:cd         37
   999 01:00:5e:02:7f:fe 224.2.127.254       929 00:02:02:0b:4c:ca         27
   999 01:00:5e:02:7f:fe 224.2.127.254       930 00:02:02:0b:47:bd        170
   999 01:00:5e:02:7f:fe 224.2.127.254       931 00:02:02:0b:47:c7        140
   999 01:00:5e:02:7f:fe 224.2.127.254       932 00:02:02:0b:4d:35        148
   999 01:00:5e:02:7f:fe 224.2.127.254       933 00:02:02:0b:4d:5b        105
   999 01:00:5e:02:7f:fe 224.2.127.254       934 00:02:02:0b:4a:a5         25
   999 01:00:5e:02:7f:fe 224.2.127.254       935 00:02:02:0b:4c:9e        168
   999 01:00:5e:02:7f:fe 224.2.127.254       936 00:02:02:09:c1:78        171
   999 01:00:5e:02:7f:fe 224.2.127.254       937 00:02:02:0a:c0:ca         96
```

Access Level   admin for bridge add, delete, and show. user for bridge flush.

Products   MALC, Raptor 319, Raptor 719, Raptor 723

bridge-path

Use this command to add, modify, delete, or show static-bridge profiles.

Syntax   `bridge-path add interface/type`

`global`

`global-intralink`

`intralink`

`vlan vlan_id`

`[age value] default | [mac] mac_address | ip ip_address`

`[flap] default | disable | enable`

`mcastage`

`igmpqueryinterval`

add
   Add a static-bridge assignment between an existing MAC address and an interface.

interface/type
   Name and type of the physical interface.

global
   Global default route for the whole network. If **global** is specified, no further parameters are required.

global-intralink
   Global intralink. All traffic that cannot be resolved will be forwarded out this interface. If **global** is specified, no further parameters are required.

intralink
   A type of bridge that receives forwarded traffic from the uplink that is not local traffic.

vlan *vlan_id*
   VLAN identifier associated with the interface.

age value
   The **AgingPeriod** measured in seconds. This is an optional field.

default
   The specified interface is the default destination for bridge packets with the specified *vlan_id*. If **default** is specified, no other parameters are required.

[mac] *mac_address*
   Use this option to associate a specific MAC address and VLAN with an interface. The **[mac]** argument is optional. The **mac_address** is in hexadecimal notation (for example, 00:01:02:03:04:05).

ip *ip_address*
>   Use this option to associate a specific IP address and VLAN with an interface.

flap
>   Controls how the MALC handles frames when frames with a MAC address that has been previously recorded on a different port in the learning bridge table. If flap enable is false, then the entry will not be learned, and will be dropped instead. If flap enable is true, then the older entry will be flushed from the learning table, and the new port will be recorded with the MAC address. Possible values are:
>
>   • default
>
>   • enable
>
>   If flap enable is enabled, then the older entry will be flushed from the learning table, and the new port will be recorded with the MAC address.
>   • disable
>
>   If flap enable is disabled, then the entry will not be learned, and will be dropped instead.

mcastage
>   Specifies the multicast aging period per VLAN or as a global setting.

igmpquesryinterval
>   Specifies the IGMP query injection interval per VLAN or as a global setting. Appears for only devices with bridge video configurations. This parameter cannot be specified on bridge intralinks. If this parameter is set, but mcastage is not specified, the MALC sets the mcastage parameter to 2 times the IGMP query interval, plus 1

Syntax `bridge-path delete interface/type`

`global | global-intralink | vlan vlan_id`

`default | [mac] mac_address | ip ip_address`

delete
>   Delete a static-bridge assignment thus breaking an association between an IP address and an interface.

Syntax `bridge-path  show`

show
>   List all static-bridge assignments.

Example 1 Create a static bridge between an interface and a specific MAC address and VLAN.

`zSH> `**`bridge-path add 1-1-1-0/ds3 vlan 22 00:10:c0:ad:79:22`**

Example 2 Create a static bridge between an interface and a specific IP address and VLAN.

```
zSH> bridge-path add 1-1-4-0/ds3 vlan 3 ip 192.16.80.1
```

Example 3 Create a static bridge between an interface and a default destination (specified by the *vlan_id*).

```
zSH> bridge-path add 1-1-3-0/ds3 vlan 2 age 1000 default
```

Example 4 Delete a static bridge between an interface and a specific MAC address and VLAN.

```
zSH> bridge-path delete 1-1-1-0/ds3 vlan 22 00:10:c0:ad:79:22
```

Example 5 Delete a static bridge between an interface and a specific IP address and VLAN.

```
zSH> bridge-path delete 1-1-4-0/ds3 vlan 3 ip 192.16.80.1
```

Access Level user

Products MALC, Raptor 319, Raptor 719, Raptor 723

C

card add

Adds card profiles for specified card settings. Optional parameters are available software load filename, card group ID, linetype, line card voltage (ISDN cards only), and status. By default, new card profiles are enabled..

Syntax **`card add card-profile-address [load sw-file-name] [group card-group-id] [linetype card-line-type] [voltage card-line-voltage] [disable]`**

Options **card-profile-address**
The slot/slot/type of the current card.

load *sw-file-name*
Optionally, specifies the software load file to be configure for the card. By default, the system determines the software load based on the card type.

group *card-group-id*
Optional, specifies a the card-group-id assigned to the card profile. If no card-group-id is provided, the default group ID for the specified card type is used.

linetype *card-line-type*
Optional, specifies a the card-group-id assigned to the card profile. If no card-group-id is provided, the default group ID for the specified card type is used.

voltage *card-line-voltage*

> Optional, specifies a the card-line-voltage for ISDN cards assigned to the card profile. If no line voltage is provided, the default line voltage for the specified ISDN card is used.

disable

> Optional, disables the card profile. By default, card profiles are enabled.

Example

```
zSH> card add 1/21/5047
new card-profile 1/21/5047 added, sw-file-name "malcpots48.bin"

zSH> card add 1/21/5049 disable
new card-profile 1/21/5049 added, sw-file-name "malculcs.bin", 1 option:
disable

zSH> card add 1/21/5049 group 5
new card-profile 1/21/5049 added, sw-file-name "malculcs.bin", 1 option:
card-group-id 5

zSH> card add 1/21/5049 linetype isdn-pv
new card-profile 1/21/5049 added, sw-file-name "malculcs.bin", 1 option:
card-line-type isdn-pv

zSH> card add 1/21/5049 load foo.bin voltage 100-volts linetype isdn-pv disable
new card-profile 1/21/5049 added, sw-file-name "malcisdn.bin", 4 options:
sw-file-name malcisdn.bin, card-line-type isdn-pv, card-line-voltage
100-volts, disable
```

Access Level admin

Products MALC

See Also

card change

> Update card profiles for new card types. By default, validation is performed to match the software load file and the card type. An optional parameter is available to override validation to use a software load file that does not match the card type.

Syntax `card change [-f]` *card-profile-address new-card-type*
`[`*sw-file-name*`]`

Options **-f**

> Optionally, overrides card type validation so the specified software load file is used regardless of the card type.

card-profile-address

> The slot/slot/type of the current card.

new-card-type

> The new card type being assigned to the card.

sw-file-name
Optional, software load name associated with the new card-profile. If no software load name is provided, the default software load name for the specified card type is used.

Example

```
zSH> card change 1/21/5036 5065
card-profile 1/21/5036 read, sw-file-name "malcxdsl48.bin"
card-profile changed to 1/21/5065, sw-file-name "malcxdsl48anxam.bin"
```

```
zSH> list card-profile 1/21
card-profile  1/21/5065
1 entry found.
zSH> get card-profile  1/21/5065
sw-file-name: ----------->  {malcxdsl48anxam.bin}
admin-status: ----------->  {disable}
upgrade-sw-file-name: --->  {}
upgrade-vers: ----------->  {}
admin-status-enable: ---->  {enable}
sw-upgrade-admin: ------->  {reloadcurrrev}
sw-enable: -------------->  {true}
sw-upgrade-enable: ------>  {false}
card-group-id: ---------->  {0}
hold-active: ------------>  {false}
weight: ----------------->  {nopreference}
card-line-type: --------->  {unknowntype}
card-atm-configuration: ->  {notapplicable}
card-line-voltage: ------>  {not-used}
```

Access Level admin

Products MALC

See Also

card delete

Remove card profiles for the specified card.

Syntax **card delete *card-profile-address***

Options **card-profile-address**
The slot/slot/type of the card to be removed.

Example
```
zSH> card delete 1/21/5049
card-profile 1/21/5049 deleted
```

Access Level admin

Products MALC

See Also

card update

Updates card profiles for specified card settings.

Syntax `card update card-profile-address [load sw-file-name]`
`[adminstatus admin-status] [upgradeload`
`upgrade-sw-file-name] [upgrade upgrade-vers]`
`[adminstatusenable enable|disable] [upgradeadmin`
`sw-upgrade-admin] [swenable true|false] [swupgradeenable`
`true|false] [group card-group-id] [holdactive true|false]`
`[weight weight] [linetype card-line-type] [atmconfig`
`card-atm-configuration] [voltage card-line-voltage]`
`[maxvivci maxvpi-maxvci]`

Options **card-profile-address**
The slot/slot/type of the current card.

load *sw-file-name*
Optionally, specifies the software load file to be configure for the card. By default, the system determines the software load based on the card type.

adminstatus *admin-status*
Optionally, specifies the administrative status of the card. By default, the card is active.

upgradeload *upgrade-sw-file-name*
Optionally, specifies the software load file to be uploaded to the card.

upgradeversion *upgrade-vers*
Optionally, specifies the upgrade version for the new software load.

adminstatusenable enable/disable
Optionally, specifies whether the admin status is enabled. By default, the admin status is enabled.

upgradeadmin *sw-upgrade-admin*
Optionally, specifies the software load file to be configure for the card. By default, the system determines the software load based on the card type.

swenable true|false
Optionally, specifies the software enable state of the card. By default, the software enable state is true.

swupgradeenable true|false
Optionally, specifies the software upgrade enable state of the card. By default, the software upgrade enable state is true.

group *card-group-id*
Optionally, specifies a the card-group-id assigned to the card profile. If no card-group-id is provided, the default group ID for the specified card type is used.

holdactive true/false
Optionally, specifies the software load file to be configure for the card. By default, the system determines the software load based on the card type.

weight *weight*
> Optionally, specifies the software load file to be configure for the card. By default, the system determines the software load based on the card type.

linetype *card-line-type*
> Optional, specifies a the card-line-type assigned to the card profile. If no card-line-type is provided, the default card-line-type for the specified card type is used.

voltage *card-line-voltage*
> Optional, specifies a the card-line-voltage for ISDN cards assigned to the card profile. If no line voltage is provided, the default line voltage for the specified ISDN card is used.

maxvpivci *maxvpi-maxvci*
> Optional, specifies maximum VPI and VCI for the card.

Example

```
card update 1/21/5049 adminstatusenable disable

card update 1/21/5049 linetype isdn-pv

card update 1/20/5036 load malc.bin adminstatus operational upgradeload foof
upgradeversion 99 adminstatusenable disable upgradeadmin upgradenow swenable
false swupgradeenable true group 9 holdactive true weight nopreference
linetype adsl-splitter atmconfig notapplicable voltage 95 maxvp vpi15-vci63
```

Access Level admin

Products MALC

See Also

ccshow

The **ccshow** command shows associated connections and call state information given a range and type of endpoint.

Syntax `ccshow [-d] AAL2|GR303|V52|POTS|ELCPAAL2 address | *`

Displays call related information for the given address(es). Note that the format of the address depends on the type of endpoint.

AAL2 | GR303 | V52 | POTS | ELCPAAL2
> The type of endpoint to display.

address
> The address for the type of endpoint.

*
> Use an asterisk after the endpoint type to display all of the endpoints.

Syntax `ccshow AAL2 lgid [/vpi[/vci[/cid]]]`

lgid

The line group ID of the AAL2 interface. Use the **lineGroup** command to find this number.

vpi/vci/cid

Depending upon the level of detail required, enter the VPI or the VPI/VCI or the VPI/VCI/CID.

Syntax `ccshow V52 ifname [|userid [ / POTS|ISDND|ISDNB [/ bchanid]]]`

ifname

The V5.2 interface name (V52).

userid

The V5.2 user port number. List the v52-user-port profiles to display the user port number. For example, if the profile has the following address:

`v52-user-port  1/192/2`

the user port number is 192.

POTS | ISDN | ISDNB

The user endpoint type.

bchanid

The B-channel ID number.

Syntax `ccshow GR303 igname/ crv`

igname

The name of the GR-303 Interface Group (IG).

crv

The GR-303 endpoint Call Reference Value (CRV).

Syntax `ccshow POTS lgid [/potsnumber]`

lgid

The line group ID of the POTS interface. Use the **lineGroup** command to find this number.

potsnumber

The number of the POTS interface.

Example 1 The following example displays call state information for all the AAL2 calls in the system (note the output is abbreviated)

```
zSH> ccshow AAL2 *
AAL2:36/0/304/20 UP  V52:ZTL1/29/P UP  CallState:ACTV
AAL2:36/0/304/21 UP  V52:ZTL1/30/P UP  CallState:ACTV
AAL2:36/0/304/22 UP  V52:ZTL1/31/P UP  CallState:ACTV
AAL2:36/0/304/23 UP  V52:ZTL1/32/P UP  CallState:ACTV
AAL2:36/0/304/16 UP  V52:ZTL1/25/P UP  CallState:IDLE
AAL2:36/0/304/17 UP  V52:ZTL1/26/P UP  CallState:IDLE
AAL2:36/0/304/18 UP  V52:ZTL1/27/P UP  CallState:IDLE
AAL2:36/0/304/19 UP  V52:ZTL1/28/P UP  CallState:IDLE
AAL2:36/0/305/16 UP  V52:ZTL1/33/P UP  CallState:ACTV
```

```
                              AAL2:36/0/305/17 UP  V52:ZTL1/34/P UP  CallState:ACTV
                              AAL2:36/0/305/18 UP  V52:ZTL1/35/P UP  CallState:ACTV
                              AAL2:36/0/305/19 UP  V52:ZTL1/36/P UP  CallState:ACTV
                              AAL2:36/0/305/20 UP  V52:ZTL1/37/P UP  CallState:ACTV
                              AAL2:36/0/305/21 UP  V52:ZTL1/38/P UP  CallState:ACTV
                              AAL2:36/0/305/22 UP  V52:ZTL1/39/P UP  CallState:ACTV
                              <SPACE> for next page, <CR> for next line, A for all, Q to
                              quit
```

Example 2 The following example displays call state information for all the V52 calls in the system (note the output is abbreviated):

```
zSH> ccshow V52 *
V52:ZTL1/192/P UP  AAL2:36/0/324/23 UP  CallState:ACTV
V52:ZTL1/176/P UP  AAL2:36/0/322/23 UP  CallState:ACTV
V52:ZTL1/177/P UP  AAL2:36/0/323/16 UP  CallState:ACTV
V52:ZTL1/178/P UP  AAL2:36/0/323/17 UP  CallState:ACTV
V52:ZTL1/179/P UP  AAL2:36/0/323/18 UP  CallState:ACTV
V52:ZTL1/180/P UP  AAL2:36/0/323/19 UP  CallState:ACTV
V52:ZTL1/181/P UP  AAL2:36/0/323/20 UP  CallState:ACTV
V52:ZTL1/182/P UP  AAL2:36/0/323/21 UP  CallState:IDLE
V52:ZTL1/183/P UP  AAL2:36/0/323/22 UP  CallState:IDLE
V52:ZTL1/184/P UP  AAL2:36/0/323/23 UP  CallState:IDLE
V52:ZTL1/185/P UP  AAL2:36/0/324/16 UP  CallState:ACTV
V52:ZTL1/186/P UP  AAL2:36/0/324/17 UP  CallState:ACTV
<SPACE> for next page, <CR> for next line, A for all, Q to
quit
```

Example 3 The following example displays detailed call state information (using the **-d** option) for calls on a with a MALC DS3 Uplink: interface.

First, find the linegroup for the interface:

```
zSH> linegroup 1-1-1-0/ds3
lineGroupId: 36
```

Then use the linegroup to display detailed information about AAL2 calls on the interface (note the output is abbreviated):

```
zSH> ccshow -d AAL2 36 linegroup
   Term Address: PVC-AAL2:36:VPI-0:VCI-304:CID-20
     Term State: UP
Sibling Address: V52:Link-ZTL1:UserID-29:UserType -POTS_USER
  Sibling State: UP
     Call state: ACTIVE

   Term Address: PVC-AAL2:36:VPI-0:VCI-304:CID-21
     Term State: UP
Sibling Address: V52:Link-ZTL1:UserID-30:UserType -POTS_USER
  Sibling State: UP
     Call state: ACTIVE

   Term Address: PVC-AAL2:36:VPI-0:VCI-304:CID-22
     Term State: UP
Sibling Address: V52:Link-ZTL1:UserID-31:UserType -POTS_USER
```

```
   Sibling State: UP
      Call state: ACTIVE

   Term Address: PVC-AAL2:36:VPI-0:VCI-304:CID-23
     Term State: UPSibling Address: V52:Link-ZTL1:UserID-32:UserType -POTS_USER
   Sibling State: UP
      Call state: ACTIVE
    Term Address: PVC-AAL2:36:VPI-0:VCI-304:CID-16
      Term State: UP
Sibling Address: V52:Link-ZTL1:UserID-25:UserType -POTS_USER
   Sibling State: UP
      Call state: IDLE

   Term Address: PVC-AAL2:36:VPI-0:VCI-304:CID-17
      Term State: UP
Sibling Address: V52:Link-ZTL1:UserID-26:UserType -POTS_USER
   Sibling State: UP
      Call state: IDLE
<SPACE> for next page, <CR> for next line, A for all, Q to quit
```

Example 4   The following example shows AAL2 call information for a particular VPI and VCI (0/324) on a MALC Uplink interface (linegroup 36):

```
SH> ccshow AAL2 36/0/324 linegroup/VPI/VCI
AAL2:36/0/324/16 UP   V52:ZTL1/185/P UP   CallState:ACTV
AAL2:36/0/324/17 UP   V52:ZTL1/186/P UP   CallState:ACTV
AAL2:36/0/324/18 UP   V52:ZTL1/187/P UP   CallState:ACTV
AAL2:36/0/324/19 UP   V52:ZTL1/188/P UP   CallState:ACTV
AAL2:36/0/324/20 UP   V52:ZTL1/189/P UP   CallState:ACTV
AAL2:36/0/324/21 UP   V52:ZTL1/190/P UP   CallState:ACTV
AAL2:36/0/324/22 UP   V52:ZTL1/191/P UP   CallState:ACTV
AAL2:36/0/324/23 UP   V52:ZTL1/192/P UP   CallState:ACTV
        8 out of 384 records matched
```

Example 5   The following example shows detailed AAL2 call information for a particular VPI/VCI/CID (0/324/20) on a MALC Uplink interface (linegroup 36):

```
zSH> ccshow AAL2 36/0/324/16 linegroup/VPI/VCI/CID
AAL2:36/0/324/16 UP   V52:ZTL1/185/P UP   CallState:ACTV
 1 out of 384 records matched
zSH> ccshow -d AAL2 36/0/324/16
    Term Address: PVC-AAL2:36:VPI-0:VCI-324:CID-16
      Term State: UP
Sibling Address: V52:Link-ZTL1:UserID-185:UserType -POTS_USER
   Sibling State: UP
      Call state: ACTIVE
 1 out of 384 records matched
```

Example 6   The following example shows detailed V52 call information for the user number 192 in the interface group ZTL1. List the **v52-user-port** profiles to view the userID.

```
zSH> ccshow -d V52 ZTL1/192/POTS ifname/userid/call-type
    Term Address: V52:Link-ZTL1:UserID-192:UserType -POTS_USER
```

```
    Term State: UP
Sibling Address: PVC-AAL2:36:VPI-0:VCI-324:CID-23
  Sibling State: UP
    Call state: ACTIVE
 1 out of 384 records match
```

Products	MALC, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A
See Also	**crossconnect**

cd

Changes the current directory on the flash card file system.

Syntax `cd directory [ options ]`

Options **directory**

Name of directory to change. Prepend a / (forward slash) to the directory to specify an absolute path.

options

The CD command accepts the following options:

.. moves up one level in the directory structure

/ moves to the root level of the flash card

Example The following example changes to the second PC card:

```
zSH> cd /card1
zSH> pwd
/card1
```

Access Level admin

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **dir**, **pwd**

changepass

Changes password for the current user.

Syntax `changepass`

Example
```
zSH> changepass
Current Password:
New Password :
Confirm New Password :
Password change successful.
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **resetpass**, **adduser**

clkmgrshow

To view the clock information on the system, use the **clkmgrshow** command.

Syntax `clkmgrshow [current | eligible | list ]`

Options **current**

Displays the current primary and secondary clock sources.

eligible

Displays only the eligible clock sources. Eligible clock sources are interfaces that are configured as eligible and are active.

list

Lists the eligible and non-eligible clock sources. Non-eligible clock sources are interfaces that either not configured as eligible, or are not active.

Example 1 The following example displays the eligible and non-eligible clock sources:

```
zSH> clkmgrshow list
eligible list has 2 entries
   1 *     eligible  1/21/1/0 (10) : T1 : LOOP
   2       eligible  1/1/1/0 (1) : DS3 : LOOP
ineligible list has 3 entries
   1   not eligible  1/1/2/0 (5) : DS3 : LOOP
   2   not eligible  1/1/3/0 (5) : DS3 : LOOP
   3   not eligible  1/1/4/0 (5) : DS3 : LOOP
```

The asterisk (*) on a clock source indicates it the active clock source.

Example 2 The following example displays the current primary and secondary clock sources:

```
zSH> clkmgrshow current
Primary system clock is 1/21/1/0 (10) : T1
Secondary system clock is 1/1/1/0 (1) : DS3
```

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A

commit

This command is only used by the configuration restore process.

Syntax `N/A`

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

configsync

Manages the config sync process. Config sync is used to keep the configuration of a device and ZMS in sync.

In some situations a device may stop sending config sync files to ZMS and the config sync status becomes stuck in a "syncpending" state. A audit process monitors the config sync process.

The config sync audit runs every six minutes and checks whether the config sync process has been in a "syncpending" state for more than 5 minutes without performing an FTP transfer to ZMS (which indicates that the config sync process has stalled).

In this case, the config sync process is restarted, the config sync status is set to "syncerror," and a configSyncReset trap is sent.

> **Note:** Zhone recommends that you perform a config sync update from ZMS. For more information, refer to the documentation that came with the ZMS software.

Syntax `configsync stat reg | change | V5.2NameID | GR-303NameID`

reg
Displays detailed config sync statistics, including the registered information for the config sync process.

change
Displays state of change lists and status of FTP transfers.

V5.2NameID
Displays the V5.2 config sync cache list for the specified interface group.

GR-303NameID
Displays the GR-303 config sync cache list for the specified interface group.

Syntax `configsync initiate full | partial`

full
Initiates a manual update of the ZMS database with the device's configuration. In a full config sync, all profiles are sent to ZMS. This option could cause significant processing by ZMS.

Config sync updates are performed automatically whenever a change is made to the device via the CLI. During a restore, however, the updating process is suspended. After a restore, a full config sync update is required.

partial
Sends only the new or updated profiles to ZMS.

Syntax `configsync reset`

reset
Resets the config sync process.

> **Caution:** Do not use this command unless requested to do so by GSS. Resetting the config sync process may cause a system reboot.

Example To show the status of the config sync process:

```
zSH> configsync stat change
 Config Sync Status:
 ----------------
FTP Transfer Stats:
Last Time The Timer Popped (seconds) = 947898179
Current Time (seconds) = 947898485
Last Ftp Time (seconds) = 0
ConfigSync Status = SYNC_INITIALIZING
```

copy

Copies a file on the flash card file system to another location on the same flash card or to another flash card (BAN only).

Syntax `copy source destination`

Options **source**
Full path name of the target file to copy.

destination
Full path name of the destination file to copy.

Access Level admin

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **delete**

create

This command is used only by the configuration restore process.

Syntax `N/A`

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

crossconnect

Add, delete, or show cross connects on the system.

For the T1/E1 CES card, add, delete, or show cross connects for CES circuits.

Syntax `crossconnect add interface1/type1 vc vpi1/vci1 tc tc1`
`interface2/type2 vc vpi2/vci2 tc tc2 td_value | txtd`
`txtd_value rxtd rxtd_value`

> **Note:** The traffic descriptor and traffic container specified in the **crossconnect add** command must already exist.

The **crossconnect add** command auto-generates a handle ID based on the cc-index number. This ID can be changed to a text string of up to 16 characters by updating the atm-cc profile or through SNMP management.

add

Create and cross connect two ATM VCLs.

interface1/type1

Name and type of the first physical interface in the connection.

vc *vpi1/vci1*

ATM layer information for the first VC in the connection.

tc *tc1*

Traffic container information. This is a mandatory field if the first physical interface is PON.

interface2/type2

Name and type of the second physical interface.

vc *vpi2/vci2*

ATM layer information for the second VC in the connection.

tc *tc2*

Traffic container information. This is a mandatory field if the second physical interface is PON.

td_value

The traffic descriptor index to be used for the crossconnect. Enter this option if both sides of the crossconnect use the same traffic descriptor.

txtd *txtd_value* **rxtd** *rxtd_value*

Specify a traffic descriptor for the transmit and receive sides of the connection.

Syntax   `crossconnect add `*`interface1`*`/atm vc `*`vpi/vci interface2`*`/ds1`
`vc `*`vpi2/vci2`*` ds0 `*`start/length`*` unstr|str `*`signal_type`*
`line_type`` td `*`txtd_value`*

> **Note:** The traffic descriptor specified in the **crossconnect add** command must already exist.

add

Create and cross connect two ATM VCLs.

interface1/atm

Name and type of the uplink physical interface in the connection.

vc *vpi1/vci1*

ATM layer information for the uplink VC in the connection.

interface2/ds1

Name of the downlink DS1 physical interface.

vc *vpi2/vci2*

ATM layer information for the downlink VC in the connection.

start/length

The starting DS0 and the length of the DS0 bundle. For example, 1/6 indicates a DS0 bundle starting at DS0 1 and containing 6 DS0's

(1+2+3+4+5+6). These fields are required even for unstructured DS0
bunldes.

unstr
Indicates that the DS0 bundle is unstructured: 1-24 DS0's for T1, 0-32
DS0's for E1.

str
Indicates that the DS0 bundle is structured: 1-23 DS0's for T1, 0-32
DS0's for E1.

signal_type
The signal type used for the connection. Signal types are basic, e1cas,
ds1esfcas, and ds1sfcas. The default signal type basic is used if no signal
type is specified.

line_type
The line type used for the connection. line types are e1, e1unframed,
e1crc, e1mf, e1crcmf, esf, and ds1nframed. The line type specified in the
DS1-profile is used as the default type if no line type is specified.

txtd *txtd_value*
Specify a traffic descriptor for the transmit and receive sides of the
connection.

Syntax `cc vpi add interface1/type1 vp vpi1/0 interface2/type2 vp vpi2/0 maxvci`

Create atm-vpi profiles.

interface1/type1
Name and type of the first physical interface (for example, uplink1/atm)
in the connection.

vpi1
ATM layer information for the first atm-vpi profile.

interface2/type2
Name and type of the second physical interface (for example, 1-9-4-0/
cellrelayproxy/atm) in the connection.

vpi2
ATM layer information for the second atm-vpi profile.

maxvci
The maximum VCI value (256 for the MALC-DS3/E3-4 card)

Syntax `cc vpl add interface1/type1 vp vpi1/0 interface2/type2 vp vpi2/0 td val | txtd txtd-value rxtd rxtd-val`

Create atm-vpl profiles and crossconnections.

interface1/type1
Name and type of the first physical interface (for example, uplink1/atm)
in the connection.

vpi1

ATM layer information for the first VP in the connection (for example, 0/ 0).

interface2/type2
> Name and type of the second physical interface (for example, 1-9-4-0/ cellrelayproxy/atm) in the connection.

vpi2
> ATM layer information for the second VP in the connection (for example, 16/0).

td val
> The assigned traffic descriptor.

txtd-val
> Optional transmit traffic descriptor.

rxtd- val
> Optional receive traffic descriptor.

Syntax `crossconnect delete` *`interface/type`* `[vc]` *`vpi/vci`* `|`
`cc` *`index`*

To delete a cross connect, specify either one of the VCLs in the cross connect or the cross connect index.

delete
> Delete an ATM crossconnect and the VCLs it connects.

interface/type
> The name and type of one side of the crossconnect. For example, **1-1-1-0/ ds1**.

vc vpi/vci
> ATM layer information for bridge over ATM. For example, **vc 0/35**. If the interface is supplied it can be either end of the connect. If an interface is supplied the **cc index** is omitted

cc *index*
> The cross connect index. If the **cc index** is supplied, the **interface/type** and **vc** are omitted.

Syntax `cc vp delete` *`interface1/type1`* `vp` *`vpi1/vci1`* *`interface2/`*
`type2` `vc` *`vpi2/vci2`*

Delete atm-vpls, atm-vcls and all related cross connections for the VP-VC.

interface1/type1
> Name and type of the first physical interface (for example, uplink1/atm) in the connection.

vpi1/vci1
> ATM layer information for the first VP in the connection (for example, 20/35).

interface2/type2

Name and type of the second physical interface (for example, 1-9-4-0/ cellrelayproxy/atm) in the connection.

vpi2/vci2

ATM layer information for the second VP in the connection (for example, 21/36).

Syntax `cc vpi delete interface1/type1 vp vpi1/0 interface2/type2 vc vpi2/0`

Delete atm-vpi profiles.

interface1/type1

Name and type of the first physical interface (for example, uplink1/atm) in the connection.

vpi1/

ATM layer information for the first VP in the connection (for example, 20/0).

interface2/type2

Name and type of the second physical interface (for example, 1-9-4-0/ cellrelayproxy/atm) in the connection.

vpi2/

ATM layer information for the second VP in the connection (for example, 16/0).

Syntax `crossconnect show [cc index | interface/type vc vpi/vci ces]`

To show a cross connect, specify either one of the VCLs in the cross connect or the cross connect index.

(no arguments)

Displays all crossconnects in the system.

cc *index*

Displays the cross connect indicated by the index number.

interface/type

The name and type of one side of the crossconnect. For example, **1-1-1-0/ ds1**.

vc *vpi/vci*

List the connection that contains the indicated VCL.

ces

List the ces connection that contains the indicated VCL.

Example 1

zSH> **crossconnect add 1-1-1-0-adsl/atm vc 0/37 uplink1/atm vc 1/101 td 1**

Example 2

zSH> **crossconnect delete 1-1-1-0-adsl/atm vc 0/37**

Example 3

```
zSH> crossconnect show
ATM VCL                             CC     ATM VCL                              HANDLE ID
----------------------------------------------------------------------------
 1-1-1-0-propvirtual/atm 0/32   Up 1 Up     1-6-1-0-adsl/atm 0/32   Up handle_1
 1-1-1-0-propvirtual/atm 0/33   Up 2 Up     1-6-2-0-adsl/atm 0/32   Up handle_2
 1-1-1-0-propvirtual/atm 0/34   Up 3 Up     1-6-3-0-adsl/atm 0/32   Up handle_3
 1-1-1-0-propvirtual/atm 0/35   Up 4 Up     1-6-4-0-adsl/atm 0/32   Up handle_4
 1-1-1-0-propvirtual/atm 0/36   Up 5 Up     1-6-5-0-adsl/atm 0/32   Up handle_5
 1-1-1-0-propvirtual/atm 0/37   Up 6 Up     1-6-6-0-adsl/atm 0/32   Up handle_6
 1-1-1-0-propvirtual/atm 0/38   Up 7 Up     1-6-7-0-adsl/atm 0/32   Up handle_7
 1-1-1-0-propvirtual/atm 0/39   Up 8  Up    1-6-8-0-adsl/atm 0/32   Up handle_8
 1-1-1-0-propvirtual/atm 0/40   Up 9  Up    1-6-9-0-adsl/atm 0/32   Up handle_9
 1-1-1-0-propvirtual/atm 0/41   Up 10 Up    1-6-10-0-adsl/atm 0/32 Up handle_10
 1-1-1-0-propvirtual/atm 0/42   Up 11 Up    1-6-11-0-adsl/atm 0/32 Up handle_11
 1-1-1-0-propvirtual/atm 0/43   Up 12 Up    1-6-12-0-adsl/atm 0/32 Up handle_12
 1-1-1-0-propvirtual/atm 0/44   Up 13 Up    1-6-13-0-adsl/atm 0/32 Up handle_13
 1-1-1-0-propvirtual/atm 0/45   Up 14 Up    1-6-14-0-adsl/atm 0/32 Up handle_14
 1-1-1-0-propvirtual/atm 0/46   Up 15 Up    1-6-15-0-adsl/atm 0/32 Up handle_15
 1-1-1-0-propvirtual/atm 0/47   Up 16 Up    1-6-16-0-adsl/atm 0/32 Up handle_16
 1-1-1-0-propvirtual/atm 0/49   Up 18 Up    1-6-18-0-adsl/atm 0/32 Up handle_17
<SPACE> for next page, <CR> for next line, A for all, Q to quit
```

The output of this command displays the following information:

Field	Description
ATM VCL	The VCL for both sides of the crossconnect and their admin state. Possible values are Up and Dn. Dn applies to all states other than Up.
CC	The index of the cross connect and its admin state. Possible values are Up and Dn. Dn applies to all states other than Up.
Handle ID	The unique ID assigned to this cross connect based on the cc-index.

Example 4

```
zSH> cc add uplink2/atm 0/53 1/12/2/0/ds1 vc 1/33 ds0 1/24 unstr td 1
```

Example 5

```
zSH> cc delete uplink2/atm 0/53
```

Example 6

```
zSH> cc show
ATM VCL                             CC     ATM VCL                              HANDLE ID
----------------------------------------------------------------------------
          uplink2/atm 0/53 Up    1 Up     1-12-2-0-ds1/atm 1/33  Up  handle_1
```

Access Level admin

Products MALC, Raptor 319, Raptor 719, Raptor 723

D

datastorestats

The DataStore is a configuration database containing all the provisioning data of the system The **datastorestats** command provides information about the use of the DataStore configuration database.

Syntax `datastorestats`

Example

```
zSH> datastorestats
Data Store AVL Tree Stats
-----------------------Inserts                  :         509
Deletes                    :          0
Records in Data Store   :       509
Current DataStore Size is   348628 bytes used out of   458752 bytes available
 HashStats:
        finds: 4
        misses: 0
        addressSearchExcludes: 0
        indexSearchExcludes: 156
        slowSearch: 156
        slowFind: 156
        inserts: 293
        dups: 1362
```

Products Raptor 100, Sechtor 100A

del

Deletes a file from the flash card file system as well as directories and multiple files..

Syntax `del -rv filename|directoryname|*`

Options **-rv**

Recursively deletes files and subdirectories. The 'v' is optionally used for verbose mode so the names of the files being deleted are printed out. This option is not allowed from the root directory.

filename

Full path name of the file to delete.

directoryname

Full path name of the file to delete.

*

Specifies a wildcard so all files in the current or specified directory are deleted. This option is not allowed from the root directory.

Access Level admin

Products BAN, MALC, MALC 100, Raptor 319, Raptor 719, Raptor 723

See Also **copy**

delete

Deletes a record from the system. Note that for some types of records, such as card profiles, the **delete** command also deletes associated records. For example, if you delete a DSL **card-profile**, the system deletes all the ATM VCLs, VPLs, and cross connects configured on that card. It also deletes any VCLs/VPLs configured on the trunking card if they are part of a cross connect between the DSL card and the trunking card.

Syntax `delete profile-type [index | * ] [-orphan]`

Options **profile-type**
The type of profile to delete.

index
An index for the record. Some records, such as line profiles, use an index of the form *shelf-slot-port-subport/type*. Other records, such as ATM traffic descriptors, use an index of the form *n*, where n is an integer. Specify a complete address to delete a single record. Specify partial addresses, to delete a group of profiles. See the examples below for more information.

*
A wildcard.

orphan
Deletes orphan records that cannot otherwise be deleted. Note that wildcards cannot be used with the **orphan** option.

Example 1 The following example deletes a single ATM traffic descriptor:

```
zSH> delete atm-traf-descr 2
atm-traf-descr  232
1 entry found.
Delete atm-traf-descr 2? [y]es, [n]o, [q]uit : yes
atm-traf-descr  2 deleted.
```

Example 2 The following example uses a partial address to delete **atm-vcl** profiles configured on shelf 1, slot 13:

```
zSH> delete atm-vcl 1-13
atm-vcl  1-13-1-0-ds3/atm/0/1000
atm-vcl  1-13-2-0-ds3/atm/0/1001
atm-vcl  1-13-3-0-ds3/atm/0/1002
3 entries found.
Confirm prior to each record delete ? [y]es, [n]o, [q]uit :  y
Entry 1-13-1-0/ip does not exist.
Delete atm-vcl  1-13-1-0-ds3/atm/0/1000? [y]es, [n]o, [q]uit : y
atm-vcl  1-13-1-0-ds3/atm/0/1000 deleted.
```

```
Entry 1-13-2-0/ip does not exist.
Delete atm-vcl  1-13-2-0-ds3/atm/0/1001? [y]es, [n]o, [q]uit : y
atm-vcl  1-13-2-0-ds3/atm/0/1001 deleted.
Entry 1-13-3-0/ip does not exist.
Delete atm-vcl  1-13-3-0-ds3/atm/0/1002? [y]es, [n]o, [q]uit : y
atm-vcl  1-13-3-0-ds3/atm/0/1002 deleted.
```

Example 3   The following example deletes multiple atm traffic descriptors using the wildcard character (*):

```
zSH> delete atm-traf-descr *
atm-traf-descr  1
atm-traf-descr  2
2 entries found.
Confirm prior to each record delete ? [y]es, [n]o, [q]uit : y
Delete atm-traf-descr 1? [y]es, [n]o, [q]uit : y
atm-traf-descr  1 deleted.
Delete atm-traf-descr 2? [y]es, [n]o, [q]uit : y
atm-traf-descr  2 deleted.
zSH>
```

Example 4   On a BAN, MALC, or Raptor, the **delete** command can also be used to delete a **card-profile** and all profiles associated with the card. After the profiles have been deleted, the card reboots.

> ⚠ **Caution:** Before deleting card profiles, remove the card from the system as explained in the hardware documentation that came with your unit.

> ⚠ **Caution:** Back up the system configuration before deleting card profiles. Refer to the release notes that came with your unit for details.

The following example deletes a SHDSL card profile in shelf 1, slot 16:

```
zSH> delete card-profile 1/16/5006 shelf/slot/type
Delete card-profile  1/16/5006? [y]es, [n]o, [q]uit : y
card-profile 1/16/5006 deleted.
```

Access Level   admin

Notes   You can only delete one **card-profile** at a time. Wildcards are not supported when deleting card profiles.

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also   **get**, **list**, **new**, **update**, **show**

deleteuser

Deletes a user account from system.

Syntax   **deleteuser** *username*

Options **username**
> Name of user account to delete.

Example
```
zSH> deleteuser dmiller
OK to delete this account? (yes/no): yes
Account was deleted.
```

Access Level useradmin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **adduser**, **updateuser**

delt

The MALC supports the DELT commands for Dual-End Loop Tests:

Syntax **delt start <*interface*>**

delt abort <*interface*>

delt clear <*interface*>

delt show status <*interface*>

delt show noise <*interface*> [*start-index* [*num-vals*]]

interface
> The <interface> can be in the form of ifIndex (432), name/type (1-4-1-0/adsl) or shelf/slot/port/subport/type (1/4/1/0/adsl0.

start-index
> (0..511) is the tone index with which to start. 0 is 4.3125 kHz, 1 is 8.625 kHz, up to 511 which is 2208.0000 kHz.. The noise command displays the loop noise floor results of a delt test. There is one noise measurement per ADSL tone. Each noise value has units of dBm/Hz.

num-val
> The number of tones to display.

Notes Note that it may take some time (perhaps as much as a minute) for the DELT test to abort.

dhcp-relay

Add, delete, modify or show dhcp-server-subnet profiles configured with an enternal DHCP server address:

Syntax **dhcp-relay add [<subnetgroup>] <ip-address> [<interface>/<type>|NULL]**

subnetgroup

Add a dhcp-server-subnet profile with indicated subnetgroup and external-server ip-address. The index of the dhcp-server-subnet will be the subnetgroup.

ip-address

The subnet address/mask is derived from the system's floating IP address, if present, or may be specified NULL for use only with bridged interfaces. If multiple floating IP records are present, the desired <name>/<type> may be specified.

interface/type|`NULL`

The network address/mask is derived from the floating ip-interface-record for the system; if there is none and NULL is not specified, an error will be returned; if there are more than one, specify the desired one in <interface>/<type>. If NULL is specified, the network address/mask will each be 0, and only bridges may be provisioned to use the external server.

dhcp-relay delete

Delete the dhcp-server-subnet profile with indicated index.

dhcp-relay modify <subnetgroup> <ip-address>

Change the external-server address for the indicated index.

dhcp-relay show

Display the list of external-server addresses with subnetgroup and subnet address/mask.

dir

Displays the contents of the directory on the device file system.

Syntax `dir`

Example

```
zSH> dir
Listing Directory .:
-rwxrwxrwx  1 0        0              668932 Mar 28 17:05 malcoc3fraw.bin
-rwxrwxrwx  1 0        0             5776033 Apr  7 19:23 malcoc3f.bin
-rwxrwxrwx  1 0        0             4197357 Mar 24 00:15 malct1e132vg.bin
-rwxrwxrwx  1 0        0             4117051 Mar 24 00:15 malct1e132vgv52.bin
-rwxrwxrwx  1 0        0              392308 Mar 11 15:38 malct1e132vgrom.bin
-rwxrwxrwx  1 0        0             1563843 Mar 28 17:05 malct1e1atm32.bin
-rwxrwxrwx  1 0        0             1206836 Mar 28 17:05 malcpots.bin
drwxrwxrwx  1 0        0                2048 Apr 13 16:40 datastor/
drwxrwxrwx  1 0        0                2048 Dec 20  2004 bulkstats/
-rwxrwxrwx  1 0        0              668296 Feb 22 14:34 malcoc3raw.bin
-rwxrwxrwx  1 0        0             1855714 Mar 28 17:04 malcgshdsl.bin
-rwxrwxrwx  1 0        0             1030717 Mar 28 17:04 malcmtac.bin
-rwxrwxrwx  1 0        0             2368132 Apr 13 17:43 malcolt.bin
drwxrwxrwx  1 0        0                2048 Mar 30 15:13 onreboot/
                                   27384184 bytes available
```

Access Level admin

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **cd**, **pwd**

ds1relay

The **ds1relay** command controls the DS1 relay settings. The relays can be set to terminate individual or all of the DS1 circuits on the primary 64-pin connector or on the secondary, redundant 64-pin connector (on the Sechtor 100A) or on the T1/E1 Uplink interface (on the Raptor 100):

> **Note:** The **ds1relay** command does not persist across system reboots.

Syntax **ds1relay [all | *circuit-number*] [passthru | terminate]**

circuit-number
    A DS1 circuit number from 1 to 8 (Sechtor 100A) or 1-4 (Raptor 100).

all
    All of the DS1 circuits that terminate on the system.

passthru
    The DS1 circuit or circuits that terminate on the Sechtor 100A primary connector are electrically connected to the secondary (redundant) connector. Internal Sechtor 100A hardware that was connected to the DS1 circuit or circuits is connected to a loopback path.

terminate
    Terminate the specified DS1 circuit or circuits on the primary 64-pin connector (Sechtor 100A) or the 50-pin Uplink connector (Raptor 100).

Example 1 zSH> **ds1relay all terminate**

All of the DS1 circuits terminate on the primary 64-pin connector (Sechtor 100A) or the 50-pin Uplink connector (Raptor 100).

Example 2 zSH> **ds1relay all passthru**

All of the DS1 circuits are connected to the secondary 64-pin connector.

Example 3 zSH> **ds1relay 1 passthru**

The first DS1 circuit is connected to the secondary 64-pin connector, the other circuits remain unchanged.

Access Level admin

Products Raptor 100, Sechtor 100A

ds1rpshow

Displays information about the T1 interface resource providers on the system.

Syntax `ds1rpshow [`*`linenumbers`*`]`

Options

With no options, displays general information about T1 interfaces.

linenumber

Displays information about the specified line numbers.

Example 1

```
zSH> ds1rpshow
************     DS1 RP Debug Information    ************
        name:                           tDS1RP
        address:                        01:01:106
        lineRRLeaseId:                  0x022b0000_0000004e
        ds1XlatProfLeaseId:             0x022b0000_0000004f
        ds1LineProfLeaseId:             0x022b0000_0000004f
        ds1GroupProfLeaseId:            0x022b0000_0000004f
        ds1CfgProfLeaseId:              0x022b0000_0000004f
        systemProfLeaseId:              0x022b0000_0000004f
        numUnits:                       8
        clkStatus:                      0
        clkSrc:                         0
        Attached units:
                0 1 2 3 4 5 6 7
```

Example 2

```
zSH> ds1rpshow 1
************     DS1 RP Debug Information    ************
        name:                           tDS1RP
        address:                        01:01:106
        lineRRLeaseId:                  0x022b0000_0000004e
        ds1XlatProfLeaseId:             0x022b0000_0000004f
        ds1LineProfLeaseId:             0x022b0000_0000004f
        ds1GroupProfLeaseId:            0x022b0000_0000004f
        ds1CfgProfLeaseId:              0x022b0000_0000004f
        systemProfLeaseId:              0x022b0000_0000004f
        numUnits:                       8
        clkStatus:                      0
        clkSrc:                         0
        Attached units:
                0 1 2 3 4 5 6 7
************  Debug Information for Line 1  ************
        state:                          3
        ifIndex:                        3
        shelf:                          1
        slot:                           1
        port:                           2
        subPort:                        0
        xlatProf.ifIndex:               3
        xlatProf.ifType:                18
        xlatProf.adminStatus:           1
        groupProf.groupId:              3
        groupProf.groupName:            1/1/2
```

```
          groupProf.primaryName:              3
          groupProf.secondaryName:            0
          groupProf.primaryWeight:            0
          groupProf.secondaryWeight:          0
          groupProf.adminStatus:              2
          alarms                              1
                                               -> No Alarm
          loopback                            1
```

Products   Raptor 100, Raptor 319, Raptor 719, Raptor 723, MALC

ds3rpshow

Displays information about the T1 interface resource providers on the system.

Syntax   `ds3rpshow [linenumbers]`

Options

With no options, displays general information about T1 interfaces.

linenumber

Displays information about the specified line numbers.

Example 1

```
zSH> ds3rpshow
************      DS3ATM RP Debug Information      ************
          name:                             tDS3ATMRP
          address:                          01:01:1091
          lineRRLeaseId:                    0x022b0000_0000006a
          ds3AtmXlatProfLeaseId:            0x022b0000_0000006c
          ds3AtmCfgProfLeaseId:             0x022b0000_0000006c
          lineRRClientLeaseId:              0x022b0000_0000006b
          ds3AtmRpCardGroupId:              1
          iamActiveCard:                    TRUE
          Redundancy Mode                   CARD
          PeerCardAvailable                 FALSE
          PeerCardShelf                     0
          PeerCardSlot                      0
          requestLineRRNotification:        TRUE
          numUnits:                         4
          Attached units:
                  1 2 3 4
```

Example 2

```
zSH> ds3rpshow 1
************      DS3ATM RP Debug Information      ************
        name:                             tDS3ATMRP
        address:                          01:01:1091
        lineRRLeaseId:                    0x022b0000_0000006a
        ds3AtmXlatProfLeaseId:            0x022b0000_0000006c
        ds3AtmCfgProfLeaseId:             0x022b0000_0000006c
        lineRRClientLeaseId:              0x022b0000_0000006b
        ds3AtmRpCardGroupId:              1
```

```
        iamActiveCard:                        TRUE
        Redundancy Mode                       CARD
        PeerCardAvailable                     FALSE
        PeerCardShelf                         0
        PeerCardSlot                          0
        requestLineRRNotification:            TRUE
        numUnits:                             4
        Attached units:
                1 2 3 4
************  Debug Information for Line 1  ************
        iamActiveLine:                        TRUE
        state:                                4
        ifIndex:                              4
        primaryClock:                         FALSE
        shelf:                                1
        slot:                                 1
        port:                                 1
        subPort:                              0
        xlatProf.ifIndex:                     4
        xlatProf.ifType:                      30
        xlatProf.adminStatus:                 1
        cnfgProf.lineType:                    4
        cnfgProf.lineCoding:                  2
        cnfgProf.sendCode:                    1
        cnfgProf.circuitId:                   ''
        cnfgProf.loopbackConfig:              1
        cnfgProf.transmitClockSource:         1
        cnfgProf.lineLengthMeters:            0
        cnfgProf.lineStatusChangeTrapEnable:  1
        cnfgProf.channelization:              1
        cnfgProf.mediumScrambleConfig:        1
        Ds3_Stats_Profile.timeElapsed:        0
        Ds3_Stats_Profile.validIntervals:     0
        Ds3_Stats_Profile.lineStatus:         0x840
                                              -> LOS
                                              -> Net-Equip-OOS
        Ds3_Stats_Profile.plcpAlarmStatus:    1
                                              -> No Alarm
        Ds3_Stats_Profile.ifTCAlarmStatus:    2
                                              -> LCD Failure
        Ds3_Stats_Profile.invalidIntervals:   0
        Ds3_Stats_Profile.lineStatusLastChange: 951806042
        Ds3_Stats_Profile.loopbackStatus:     0x1
                                              -> None
```

Products   Raptor 100, Raptor 319, Raptor 719, Raptor 723, MALC

dslstat

Displays the DSL training rates for the DSL cards in a system.

Syntax   **dslstat [*ifIndex*] | [*name/type*] | [*shelf/slot/port/ subport/type*] [-v]**

Options *ifIndex*

> The interface number of the port or port/subport that uniquely identifies the interface across the system. (Use the **linegroup** command to find the ifIndex of an interface.)

name

> The name of the interface.

type

> IANA type for the interface. For example, adsl, ds1, ds3.

shelf

> The physical address or number of the shelf where the desired line is located. The first shelf in a system is shelf 1.

slot

> The physical slot on the system.

port

> The port number defines the physical port number at the shelf-slot location for the line profile. Port numbers begin with 1 and are numbered sequentially.

subport

> Used to identify multiple logical subports on a physical port.

-v

> Indicates the verbose option to display additional VDSL data.

Example 1
```
zSH> dslstat 1-15-1-0/adsl
General Stats:
-------------
AdminStatus..................................UP
Line uptime (DD:HH:MM:SS)....................0:02:27:52
DslUpLineRate (bitsPerSec)...................512000
DslDownLineRate (bitsPerSec).................8064000
DslMaxAttainableUpLineRate (bitsPerSec)......565333
DslMaxAttainableDownLineRate (bitsPerSec)....856000
Out Octets...................................286571
Out Discards.................................0
Out Errors...................................0
In Octets....................................286571
In Discards..................................0
In Errors....................................0
ATM OCD Count................................0
ATM NCD Count................................0
ATM HEC Count................................0
ATM far-end OCD Count........................0
ATM far-end NCD Count........................0
ATM far-end HEC Count........................0

ADSL Physical Stats:
------------------
Actual Transmission connection standard......G.dmt
AdslAtucCurrLineSnrMgn (tenths dB)...........310
AdslAtucCurrLineAtn (tenths dB)..............135
```

```
                    AdslAtucCurrOutputPwr (tenths dB)............70
                    AdslAturCurrLineSnrMgn (tenths dB)...........90
                    AdslAturCurrLineAtn (tenths dB)..............135
                    AdslAturCurrOutputPwr (tenths dB)............103
                    LOFS.........................................0
                    LOLS.........................................0
                    LOSS.........................................0
                    ESS..........................................0
                    Inits........................................1
                    Adsl connects................................1
                    Adsl disconnects.............................5407

                    near-end statistics:
                    -------------------
                    blocks received..............................147087
                    errored blocks received......................0
                    CRC errors on interleaved buffer.............0
                    CRC errors on fast buffer....................0
                    FEC corrected errors on interleaved buffer...0
                    FEC corrected errors on fast buffer..........0
                    background errored blocks received...........0
                    non-SES blocks received......................0
                    Severely Errored Seconds.....................0
                    Unavailable Seconds..........................59
                    Loss of Signal Seconds.......................0
                    Seconds with one/more FECs...................0
                    Seconds declared as high BER.................0

                    far-end statistics:
                    -------------------
                    blocks received..............................147205
                    errored blocks received......................1
                    CRC errors on interleaved buffer.............0
                    CRC errors on fast buffer....................1
                    FEC corrected errors on interleaved buffer...0
                    FEC corrected errors on fast buffer..........0
                    background errored blocks received...........0
                    non-SES blocks received......................0
                    Severely Errored Seconds.....................0
                    Unavailable Seconds..........................0
                    Loss of Signal Seconds.......................0
                    Seconds with one/more FECs...................0
                    Loss of Power (dying gasps)..................0
                    Seconds declared as high BER.................0
                    Fast retrains................................0

                    Fast retrain failures........................0
```

Example 2 zSH> **dslstat 1-20-1-0/shdsl**

```
                    General Stats:
                    -------------
                    AdminStatus..................................UP
                    Line uptime (DD:HH:MM:SS)....................0:04:27:52
                    DslUpLineRate (bitsPerSec)...................2320
```

```
                  DslDownLineRate (bitsPerSec).................2320
                  DslMaxAttainableUpLineRate (bitsPerSec)......2320
                  DslMaxAttainableDownLineRate (bitsPerSec)....2320
                  Out Octets...................................20442524
                  Out Discards.................................0
                  Out Errors...................................0
                  In Octets....................................20442471
                  In Discards..................................0
                  In Errors....................................0
                  ATM OCD Count................................1
                  ATM NCD Count................................0
                  ATM HEC Count................................0
                  ATM far-end OCD Count........................0
                  ATM far-end NCD Count........................0
                  ATM far-end HEC Count........................0

                  DSL Physical Stats:
                  ------------------
                  DslLineSnrMgn (tenths dB)....................380
                  DslLineAtn (tenths dB).......................232
                  DslCurrOutputPwr (tenths dB).................85
                  LOFS.........................................1
                  LOLS.........................................1
                  LOSS.........................................1
                  ESS..........................................9
                  CRC Errors...................................0
                  Inits........................................65
```

Example 3 zSH> **dslstat 1-6-3-0/vdsl -v**

```
                  General Stats:
                  -------------
                  AdminStatus..................................UP
                  DslUpLineRate (bitsPerSec)...................1115
                  DslDownLineRate (bitsPerSec).................1115
                  DslMaxAttainableUpLineRate (bitsPerSec)......26523
                  DslMaxAttainableDownLineRate (bitsPerSec)....41857
                  Out Octets...................................0
                  Out Pkts/Cells...............................0
                  Out Discards.................................0
                  Out Errors...................................0
                  In Octets....................................0
                  In Pkts/Cells................................0
                  In Discards..................................0
                  In Errors....................................0
                  DSL Physical Stats:
                  ------------------
                  DslLineSnrMgn (tenths dB)....................317
                  DslLineAtn (tenths dB).......................0

                  DslCurrOutputPwr (tenths dB).................39
                  LOFS.........................................0
                  LOLS.........................................0
                  LOSS.........................................0
                  ESS..........................................0
```

```
                    CRC Errors...................................0
                    Inits.......................................0
                    VDSL PHY VTUC Stats:
                    ------------------
                    serialNumber................................(co-0123456)
                    vendorId....................................GSPN
                    versionNumber...............................1.66.35
                    curSnrMargin................................317
                    currAtn.....................................0
                    currStatus..................................NO DEFECT
                    currOutputPwr...............................39
                    currAttainableRate..........................41861
                    currLineRate................................1115


                    VDSL CHAN VTUC Stats:
                    ------------------
                    interleaveDelay.............................66
                    crcBlockLength..............................40
                    currTxRate..................................992
                    currTxSlowBurstProt.........................9
                    currTxFastFec...............................0
                    VDSL PHY VTUR Stats:
                    ------------------
                    serialNumber................................ABCDEFGHIJKL
                    MNOP1234
                    vendorId....................................GSPN
                    versionNumber...............................1.66.35
                    curSnrMargin................................271
                    currAtn.....................................0
                    currStatus..................................NO DEFECT
                    currOutputPwr...............................45
                    currAttainableRate..........................26523
                    cprrLineRate................................1115
                    VDSL CHAN VTUC Stats:
                    ------------------
                    interleaveDelay.............................66
                    crcBlockLength..............................40
                    currTxRate..................................992
                    currTxSlowBurstProt.........................9
                    currTxFastFec...............................0
```

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

dump

Saves the Zhone system configuration.

Syntax `dump [console] | [file filename ] [network host filename]`

Options **console**

Sends the configuration to the console.

network *host filename*

Sends the configuration to the specified host using trivial file transfer protocol (TFTP) and writes it to the specified filename. The file must exist and be writable before the system can write the configuration to it.

file *filename*

Sends the configuration to the specified file on the flash card. You must specify the full path to the file.

Example 1 The following example dumps the configuration to the file named *zhone.cfg* on the IP host 192.168.9.55:

```
zSH>dump network 192.168.9.55 zhone.cfg
```

Example 2 The next example dumps the configuration to the file named *zhone.cfg* on the first flash card on the system:

```
zSH>dump file /card1/zhone.cfg
```

Access Level useradmin

Notes • Set the TFTP server time-out value to at least 5 seconds, and 5 retries to help prevent TFTP time-out or retry errors.

• The Z-Edge 64 and the Sechtor 100A do not support saving the configuration to a local file.

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **restore**

E

eeset

Sets values in the device EEPROM. This command is only used to configure Sechtor 100A redundancy.

Syntax `eeset slot [1 | 2] card [1 | 2]`

slot [1 | 2]

The slot number to set the device to. For the Sechtor 100A this is always 1 for the active unit and 2 for the standby unit.

card [1 | 2]

The card number to set the device to. For the Sechtor 100A this is always 1 for the active unit and 2 for the standby unit.

Syntax `eeset failover on card 1`

Configures failover mode on the primary device (always card 1).

Syntax `eeset peer mac_address card 1`

Sets the MAC address of the redundant peer on the primary device (always card 1).

Access Level user

Products Sechtor 100A

See Also **eeshow**

eeshow

Displays the contents of the specified electrically erasable programmable read-only memory (EEPROM). The information include the serial number of the device, the CLEI code (if any), the Zhone card type, and the type of I/O cards installed.

Syntax `eeshow eeprom-name slot`

Options *eeprom-name*

Name of the EEPROM contents you want to display. Possible values are:

- 1daughter | 2daughter | 3daughter: up to 3 daughter cards are supported on MALC or Raptor cards
- card
- iocard: slots 1 through 17 (BAN only)
- mezz
- shelfme: slot 0 only
- shelfmon: slot 0 only
- backplane: slot 0 only
- fantray: slot 0 only

For the Z-Edge 64 **card** is the only valid *eeprom-name*. For the Sechtor 100A and Raptor 100, **card** and **mezz** are the only valid *eeprom-name*s.

slot

Slot number containing the eeprom. If you do not specify a slot number, the eeprom on the current card or on slot 0 (the system EEPROM).

Example 1 To display the Zhone card type, use the **eeshow card** command:

```
zSH> eeshow card 1
EEPROM contents:
EEPROM_ID   : 00 -- CARD
Version     : 01
Size        : 054
CardType    : 05035 -- MALC_GIGE
CardVersion : 800-01322-02-A
SerialNum   : 04440120
ShelfNumber : 00001
CLEI Code   : No CLEI
Cksum       : 0x4D60
```

```
 MAC Address are enabled for 2 address(es) starting at:
00:01:47:43:C0:38
```

Example 2 (BAN only) To display the type of I/O card installed in a slot, use the **eeshow iocard** command:

```
zSH> eeshow iocard 1
EEPROM contents:
EEPROM_ID   : 03 -- MEZZ
Version     : 01
Size        : 018
CardType    : 00013 -- OC3ATM_SM  indicates an OC3-c/STM1 interface
CardVersion : 00001
SerialNum   : 02610001
ShelfNumber : 00001
CLEI Code   : No CLEI
Cksum       : 0x0531
Feature bits modification date: 0/0/2000 00:00:00
```

Example 3
```
zSH> eeshow 1d 5
EEPROM contents:
EEPROM_ID   : 01 -- 1DAUGHTER
Version     : 01
Size        : 022
CardType    : 05050 -- MALC_ULCS_ISDN_2B1Q
CardVersion : 00001
SerialNum   : 00210003
ShelfNumber : 00001
CLEI Code   : No CLEI
Cksum       : 0x92A6
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **eeset**

F

featurebitdisplay

Displays the features enabled on the system.

Syntax `featurebitdisplay featurenumber`

Options **(no option)**
Displays all available features.

featurenumber
Indicates whether the feature is enabled.

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **featurebitset**

featurebitset

Enables certain features on Zhone systems. You must obtain a hash code from Zhone GSS before using this command.

Syntax `featurebitset offset mask value hashcode`

Options *offset*
  Number of bits to offset.

mask
  Mask to apply to the EEPROM.

value
  New value to write to the serial EEPROM bits as specified by the offset and mask.

hashcode
  The hash code that enables the feature.

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **featurebitdisplay**

fhrameping

Pings a specified location within the device. You can only ping slot cards, you cannot ping I/O cards.

Syntax `fhrameping shelf slot [ port ]`

Options *shelf*
  Destination shelf number. Currently this is always 1 (one).

slot
  Destination slot number. Slots are numbered from 1 to 17, left to right.

port
  Destination port number.

Example 1 The first example shows the **fhrameping** response received from an inactive card.

```
zSH> fhrameping 1 14
Pinging Shelf 1, slot 14
FhramePing Timeout with Shelf 1, Slot 14
```

Example 2 The next example shows the **fhrameping** response received from an active card.

```
zSH> fhrameping 1 3 1
 Pinging Shelf 1, slot 3 port 1
Shelf 1, Slot 3, Port 1, is Alive!
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **ping**

file

Transfers files to or from a TFTP server without verifying the image header. This command can be used to download a dump file previously made to the network or upload one that was made to a local file.

> **Note:** The **file** command should be used only for general purpose file transfer, not for upgrading system software. To upgrade software, use the **image** command.

Syntax `file [download | upload] tftphost sourcefilepath targetfilepath`

Options *download*

Downloads the file to the flash card on the device. This option is typically used to restore a configuration created using the **dump** command.

upload

Uploads the specified file to the TFTP server. This option is typically used to save a copy of the software image files.

sourcefile

The full path name of the source file. On the BAN Infoservice card flash cards, the path is **/card1**/*file* or **/card2**/*file*, depending on the flash cards installed. On a MALC or Raptor, do not specify the card.

targetfile

The full path name of the target file. On the BAN Infoservice card flash cards, the path is **/card1**/*file* or **/card2**/*file*, depending on the flash cards installed. On a MALC or Raptor, do not specify the card.

If you are transferring a file to a TFTP server, the file must exist and be writable.

Example The following example downloads a file to the host 192.168.9.55 named *savedump* and writes it to the file named *localdump* on the first Infoservices flash card (*/card1*).

```
zSH> file download 192.168.9.55 saveddump localdump
```

Access Level admin

Notes Set the TFTP server time-out value to at least 5 seconds, and 5 retries to help prevent TFTP timeout or retry errors.

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also image

filter

IP filtering is typically performed to enhance network security by limiting access between two networks. IP filtering is based on the recognition and selective transmission or blocking of individual IP packets. Packets meeting some criterion are forwarded, and those that fail are dropped. On BAN, IP filtering is used to block inbound traffic to the management network.

Syntax The following command adds a rule to the currently loaded filter. If the rule argument (line and rule are interchangeably used to signify a user-defined value for the filtering rule) is omitted, the line number of the rule will be 100 greater than the highest numbered rule in the filter. That is, the rule will be appended to the end of the rule list with the default stride.

```
filter add rule [from | to] [IP address] [permit | deny]
```

rule
   A user-defined value for the filtering rule.

from | to
   Defines incoming or outgoing.

IP address
   The interface address.

permit | deny
   Permit or deny traffic flow.

Syntax The following command deletes the specified line (also known as rule) from the currently loaded filter.

```
filter delete line
```

line
   The filter identifier.

Syntax The following command sets the description field of the currently loaded filter.

```
filter description description_string
```

description_string
   A string of text and spaces describing the purpose of the filter.

Syntax The following command deletes the specified filter.

```
filter destroy specIndex
```

specIndex
   The user-defined value for the filter.

Syntax The following command discards the currently loaded filter along with any uncommitted changes.

```
filter discard
```

Syntax The following command displays help for the specified filter command.

```
filter help [command]
```

[command]
>   The specific argument to the filter command.

Syntax The following command lists all defined filters showing specIndex, name, version, and description.

```
filter list
```

Syntax The following command loads a filter into the CLI for modification.

```
filter load specIndex
```

specIndex
>   The index value for the filter.

Syntax The following command replaces rule in the currently loaded filter with newrule.

```
filter modify line newrule
```

line
>   The user-defined value for the filter.

newrule
>   A number value defining the new rule.

Syntax The following command sets the name field of the currently loaded filter.

```
filter name name
```

name
>   An arbitrary string, containing no spaces, that is considered a name for this filter. While it is desirable, it is not required that this name be unique.

Syntax The following command locates a new specIndex, and establishes a new filter in the CLI for modification.

```
filter new [name] [description_string]
```

[*name*]
>   An arbitrary string, containing no spaces, that is considered a name for this filter. While it is desirable, it is not required that this name be unique.

[*description_string*]
> A string of text and spaces describing the purpose of the filter.

Syntax The following command lists each interface that is configured to use the specified filter. If specIndex is omitted, it lists each interface that is configured to use any filter.

```
filter references [specIndex]
```

[*specIndex*]
> The index value for the filter.

Syntax The following command renumbers all rules in the currently loaded filter with the default stride of 100 or the stride given.

```
filter renumber [stride]
```

renumber [*stride*]
> The range between rule numbers.

Syntax The following command commits the currently loaded filter for modification.

```
filter save
```

Syntax The following command displays the filter currently committed to Infostore. If the specIndex is omitted, it displays the filter currently loaded for modification.

```
filter show [specIndex]
```

[*specIndex*]
> The user-defined value for the filter.

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

find

Searches through available commands.

Syntax `find [-s(ubSearch) | -d(etailed)] stringToSearch`

Options **-s**
> Search the previous search results for the specified string.

-d
> Search the online help for each command for the specified string.

-ds or -sd
> Search the online help of the commands in the previous search for the specified string.

substring
> The string to search for.

Example 1   For example, the following command finds all command s containing the string "show":

```
zSH> find show
eeshow                          show
showdatetime                    showhost
showinetstat                    showipstat
showlinestatus                  showmem
showresolver                    showuser
showzhonecpe
```

Example 2   You can also search within results. For example:

```
zSH> find -s ip
showipstat
```

Example 3   To search command online help for a particular string, use the **-d** option. For example, the following command searches all the online help for the commands for the word *profile*:

```
zSH> find -d profile
delete              get                 list
new                 show                update
```

Example 4   After you have performed a command search, the **lst** command lists only the results of the last search. For example:

```
zSH> lst
delete              get                 list
new                 show                update
```

Example 5   To reset the **lst** command so it displays all the available commands, use the -m option with the **lst** command:

```
zSH> lst -m
adduser                         ata
bootstate                       cd
changepass                      commit
copy                            create
del                             delete
deleteuser                      dir
dump                            eeshow
featurebitdisplay               featurebitset
fhrameping                      file
find                            get
help                            history
ifxlate                         image
interface                       list
load                            log
logout                          lst
mkdir                           msg
new                             ping
pollzhonecpe                    pwd
resetcliprov                    resetpass
restore                         rip
```

```
rmdir                                   route
set                                     setdatetime

Type A<CR> to print all, <CR> to continue, Q<CR> to stop:
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **get**, **show**

find-matching-data

The **find-matching-data** command displays the provisioned data path through the system which includes the specified ATM VCL.

Syntax **find-matching-data ATM *interface/type vpi vci***

ATM
Keyword

interface/type
Name and type of the physical interface.

vpi
Virtual path indicator.

vci
Virtual channel indicator

Example

```
zSH> find-matching-data ATM 1-3-1-0-adsl/atm 0 35
VCL 1-3-1-0-adsl/atm 0 35 is used in atm-cc 1
The far end of this cross connect is 1-1-1-0-aal5proxy/atm 0 32
```

Products MALC, Raptor 319, Raptor 719, Raptor 723

find-matching-subvoice

The **find-matching-subvoice** command displays the other endpoint of a **subscriber-voice** connection, given one endpoint. You can find endpoints for the following voice connections:

• AAL2

• CLASS5

• DS1

• ELCPAAL2

• GR-303

• ISDN

- POTS

- V52

- VOIP

The system displays information about each endpoint and the **subscriber-voice** profile that links them. If there are provisioning errors that prevent the matching profile from being displayed, the system reports an error.

Syntax `find-matching-subvoice AAL2 LGID/VPI/VCI/CID`

AAL2
    The type of voice endpoint.

LGID
    The line group identifier (also known as the ifIndex). Use the **linegroup** command to find the line group ID for an interface.

VPI
    Virtual Path Identifier of the AAL2 connection. You can find this in the **aal2-vcl profile**.

VCI
    Virtual Channel Identifier of the AAL2 connection. You can find this in the **aal2-vcl-profile**.

CID
    Channel Identifier. You can find this in the **aal2-cid-profile**.

Syntax `find-matching-subvoice CLASS5 ID/EndPointIndex`

CLASS5
    The type of voice endpoint.

ID
    ID for the Class5 switch.

EndPointIndex
    Index of the voice connection endpoint.

Syntax `find-matching-subvoice DS1 LGID/ChannelID`

DS1
    The type of voice endpoint.

LGID
    The line group identifier (also known as the ifIndex). Use the **linegroup** command to find the line group ID for an interface.

ChannelID
    Matching channel ID of the DS0 signal.

Syntax `find-matching-subvoice ELCPAAL2 LGID/VPI/VCI/PortID/`
       `PortType/ChannelID`

ELCPAAL2
> The type of voice endpoint.

LGID
> The line group identifier (also known as the ifIndex). Use the **linegroup** command to find the line group ID for an interface.

VPI
> Virtual Path Identifier of the ELCP AAL2 connection.

VCI
> Virtual Channel Identifier of the AAL2 connection.

PortID
> The port Identifier.

PortType
> Port type.

ChannelID
> Matching channel ID of the AAL2 signal.

Syntax `find-matching-subvoice GR303 `*`IG name/CRV`*

GR303
> The type of voice endpoint.

IG name
> Interface Group name.

CRV
> Call Reference Value.

Syntax `find-matching-subvoice ISDN `*`groupID/portType/channelID`*

ISDN
> The type of voice endpoint.

Group ID
> The line group identifier (also known as the ifIndex). Use the **linegroup** command to find the line group ID for an interface.

port type
> The ISDN D or B channel. Values are **isdndchannel** or **isdnbchannel**.

channel id
> The channel identifier. Values are 1 (D channel), 2 (B channel) or 3 (B channel).

Syntax `find-matching-subvoice POTS `*`LGID`*

POTS
> The type of voice endpoint.

LGID
> The line group identifier (also known as the ifIndex). Use the **linegroup** command to find the line group ID for an interface.

Syntax `find-matching-subvoice VOIP LGID/EndPointIndex`

CLASS5

> The type of voice endpoint.

LGID

> The line group identifier (also known as the ifIndex). Use the **linegroup** command to find the line group ID for an interface.

EndPointIndex

> Index of the voice connection en

Syntax `find-matching-subvoice V52 Interface name/portId/user type/channelId`

V52

> The type of voice endpoint.

Interface name

> Name of the V5.2 interface group.

portId

> The port ID of the V5.2 connection. This is the **local-interface-id** from the **v52-interface-group** profile.

user type

> The type of voice connection. Value can be POTS or ISDN.

channel id

> The channel identifier. For POTS this is 0.

Example 1 In this example, the AAL2 voice connection is associated with a V5.2 interface.

```
zSH> list subscriber-voice-aal2
subscriber-voice-aal2  5
subscriber-voice-aal2  7
subscriber-voice-aal2  9
...

zSH> get subscriber-voice-aal2 5
voice-aal2-line-group-id: ->  {134}
voice-aal2-vpi: ----------->  {2}
voice-aal2-vci: ----------->  {701}
voice-aal2-cid: ----------->  {16}

zSH> find-matching-subvoice AAL2 134/2/701/16
INPUT:
        profile type: subscriber-voice-aal2
        logical address: LGID: 134 VPI: 2 VCI: 701 CID: 16
        profile address: 5
subscriber-voice INFO:
        voice-connection-type      = AAL2TOV52
        voice-endpoint1-addr-index = 5
        voice-endpoint2-addr-index = 6
        voice-admin-status         = Enabled
```

```
                subscriber-voice addr: subId: 2 LGId: 134
subVoiceId: 1
MATCHING:
        profile type: subscriber-voice-v52
        logical address: IfName: rtl UserId: 1
IsdnBChannelId: 0
        profile address: 6
```

The endpoint on the other end of the **subscriber-voice** connection is described under the **MATCHING** heading. The system lists the endpoint profile types, their logical addresses, and each endpoint profile address (the profile number).

The **find-matching-subvoice** command also displays information about the **subscriber-voice** profile that links endpoints, including the voice connection type, the addresses of each endpoint, the administrative status of the profile, and its address.

Example 2 This example finds the endpoint associated with a GR-303 interface.

```
zSH> list subscriber-voice-gr303
subscriber-voice-gr303   10001
subscriber-voice-gr303   10002
subscriber-voice-gr303   10003
...

zSH> get subscriber-voice-gr303 10001
voice-GR303-ig-name: ->  {RTL}
voice-GR303-ig-crv: -->  {1}

zSH> find-matching-subvoice GR303 RTL/1
INPUT:
        profile type: subscriber-voice-gr303
        logical address: IgName: RTL Crv: 1
        profile address: 10001
subscriber-voice INFO:
        voice-connection-type       = AAL2TOGR303
        voice-endpoint1-addr-index  = 1
        voice-endpoint2-addr-index  = 10001
        voice-admin-status          = Enabled
        subscriber-voice addr: subId: 1 LGId: 36
subVoiceId: 1
MATCHING:
        profile type: subscriber-voice-aal2
        logical address: LGID: 36 VPI: 5 VCI: 202 CID: 17
        profile address: 1
```

Example 3 If there is no profile found for the address entered, the system returns **Address not found**. The following example asks for the other endpoint of an AAL2 **subscriber-voice-aal2** profile that has an undefined CID of 232:

```
zSH> find-matching-subvoice AAL2 1/1/1/232
INPUT:
 profile type: subscriber-voice-aal2
```

```
 logical address: LGID: 1 VPI: 1 VCI: 1 CID: 232
 profile address: Address not found
```

If there is more than one endpoint with the same address, the system returns a message that includes the duplicate end point address:

```
zSH> find-matching-subvoice AAL2 1/1/1/25
INPUT:
 profile type: subscriber-voice-aal2
 logical address: LGID: 1 VPI: 1 VCI: 1 CID: 25
 profile address: 11
subscriber-voice INFO:
 More than 1 subscriber-voice have the same end point
address: 11
```

Example 4 If the AAL2 address exists, but is not configured as part of a **subscriber-voice** profile, the system will display an error message as in the following example:

```
zSH> find-matching-subvoice AAL2 1/1/1/33
INPUT:
 profile type: subscriber-voice-aal2
 logical address: LGID: 1 VPI: 1 VCI: 1 CID: 33
 profile address: 33
subscriber-voice INFO:
 No subscriber-voice has end point address: 33
```

Example 5 If the **subscriber-voice-aal2** endpoint does not have a second endpoint configured, the system will return an error that the other endpoint can not be found:

```
zSH>  find-matching-subvoice AAL2 1/1/1/44
INPUT:
 profile type: subscriber-voice-aal2
l ogical address: LGID: 1 VPI: 1 VCI: 1 CID: 44
 profile address: 44
subscriber-voice INFO:
 voice-connection-type      = AAL2TOGR303
 voice-endpoint1-addr-index  = 44
 voice-endpoint2-addr-index  = 1111
 voice-admin-status        = Disabled
subscriber-voice addr: subId: 1 LGId: 1 subVoiceId: 44
MATCHING:
 profile address: Matching subscriber-voice endpoint with
address 1111 not found
```

Example 6 ISDN

This example finds the other end of an ISDN endpoint.

```
zSH> list subscriber-voice-isdn
subscriber-voice-isdn  6012
subscriber-voice-isdn  6013
subscriber-voice-isdn  6021
...
```

```
zSH> get subscriber-voice-isdn 6012
voice-isdn-line-group-id: ->  {89}
voice-isdn-port-type: ----->  {isdnbchannel}
voice-isdn-channel-id: ---->  {2}


zSH> find-matching-subvoice ISDN 89/isdnbchannel/2
INPUT:
        profile type: subscriber-voice-isdn
        logical address: LGId: 89 PortType: ISDNBCHANNEL
ChannelId: 2
        profile address: 6012
subscriber-voice INFO:
        voice-connection-type      = UNKNOWN
        voice-endpoint1-addr-index = 6012
        voice-endpoint2-addr-index = 16012
        voice-admin-status         = Enabled
        subscriber-voice addr: subId: 6 LGId: 29
subVoiceId: 16012
MATCHING:
        profile type: subscriber-voice-v52
        logical address: IfName: rtl UserId: 601
IsdnBChannelId: 1
        profile address: 16012
```

Example 7 POTS

This example finds the AAL2 endpoint that is associated with a POTS
interface.

```
zSH> list subscriber-voice-pots
subscriber-voice-pots  3001
subscriber-voice-pots  3002
subscriber-voice-pots  3003
...


zSH> get subscriber-voice-pots 3001
voice-pots-line-group-id: ->  {33}


zSH> find-matching-subvoice POTS 33
INPUT:
        profile type: subscriber-voice-pots
        logical address: LGId: 33 PotsNumber: 1
        profile address: 3001
subscriber-voice INFO:
        voice-connection-type      = POTSTOAAL2
        voice-endpoint1-addr-index = 3001
        voice-endpoint2-addr-index = 301
        voice-admin-status         = Enabled
        subscriber-voice addr: subId: 33 LGId: 5
subVoiceId: 1
MATCHING:
        profile type: subscriber-voice-aal2
        logical address: LGID: 5 VPI: 0 VCI: 301 CID: 17
        profile address: 301
```

Example 8 **V52**

This example finds the AAL2 endpoint that is associated with a V5.2 user port.

```
zSH> list subscriber-voice-v52
subscriber-voice-v52   6
subscriber-voice-v52   8
subscriber-voice-v52   10
subscriber-voice-v52   34
...

zSH> get subscriber-voice-v52 6
voice-V52-interface-name: -->   {rtl}
voice-V52-user-port-id: ---->   {1}
voice-V52-user-type: ------->   {pots}
voice-V52-isdn-channel-id: ->   {0}

zSH> find-matching-subvoice V52 rtl/1/pots/0
INPUT:
        profile type: subscriber-voice-v52
        logical address: IfName: rtl UserId: 1
IsdnBChannelId: 0
        profile address: 6
subscriber-voice INFO:
        voice-connection-type        = AAL2TOV52
        voice-endpoint1-addr-index   = 5
        voice-endpoint2-addr-index   = 6
        voice-admin-status           = Enabled
        subscriber-voice addr: subId: 2 LGId: 134
subVoiceId: 1
MATCHING:
        profile type: subscriber-voice-aal2
        logical address: LGID: 134 VPI: 2 VCI: 701 CID: 16
        profile address: 5
```

Products BAN, MALC, Sechtor 100A, Z-Edge 64

G

get

The **get** command displays the contents of record and its configured parameters.

Syntax `get profile-type index`

Options *profile-type*

Shows the parameters in the specified profile with the parameter value ranges.

index
> Record to display.

Example To view the configuration of a particular record, use the **get** command and specify the address of the record:

```
zSH> get ip-interface-record  ethernet1/ip
vpi: --------------->    {0}
vci: --------------->    {0}
rdindex: ----------->    {1}
dhcp: -------------->    {none}
addr: -------------->    {192.24.200.223}
netmask: ----------->    {255.255.255.0}
bcastaddr: --------->    {192.24.200.255}
destaddr: ---------->    {0.0.0.0}
farendaddr: -------->    {0.0.0.0}
mru: --------------->    {1500}
reasmmaxsize: ------>    {0}
ingressfiltername: ->    {}
egressfiltername: -->    {}
pointtopoint: ------>    {no}
mcastenabled: ------>    {yes}
ipfwdenabled: ------>    {yes}
mcastfwdenabled: --->    {yes}
natenabled: -------->    {no}
bcastenabled: ------>    {yes}
ingressfilterid: --->    {0}
egressfilterid: ---->    {0}
ipaddrdynamic: ----->    {static}
dhcpserverenable: -->    {false}
subnetgroup: ------->    {0}
unnumberedindex: --->    {0}
mcastcontrollist: -->    {}
vlanid: ------------>    {0}
maxVideoStreams: --->    {0}
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **list**, **show**

gpononu

For GPON configurations, sets and displays ONU and serial number associations. The default bandwidth is 1 Mbps.

Syntax **gpononu clear *slot/onu* | set [bw] *slot/onu* [*bandwidth*|
show *slot/onu* | showall [*slot/onu*] [enabled] [free]**

Example

```
zSH> gpononu show 8/1
Free ONUs for slot 8 olt 1:
```

```
    1    2    4    5    6    7    8    9   10   11   12   13
   14   15   16   17   18   19   20   21   22   23   24   25
   26   27   28   29   30   31   32   33   34   35   36   37
   38   39   40   41   42   43   44   45   46   47   48   49
   50   51   52   53   54   55   56   57   58   59   60   61
   62   63   64
Discovered serial numbers for slot 8 olt 1:
sernoID   Vendor  Serial Number      sernoID   Vendor   Serial Number
    1      ZNTS     220001
    2      ZNTS     220002
```

Assign the available ONU 2 with serial number ID (sernoID) 2. By not specifying a name, the default name is used. The default ONU bandwidth is 1 Mbps. The ONU number can also be used to specify a ONU. For exmaple, ONU2 instead of 8/1/2.

```
zSH> g18ononu set 8/1/2 2 bw 4.5
Onu 2 successfully enabled with serial number ZNTS 220002
Bandwidth has been successfully chaged from 1 to 4.5 Mb/sec
zSH> MAR 12 11:53:01: alert  : 1/8/1025: alarm_mgr: 01: 8:01:02 Critical ONU Up
Line 1/8/1/2/gponanu CAUSE: active
```

Check the ONU bandwidth setting.

```
zSH> gponanu bw 8/1/2
Current bandwidth allocation is 4.5 Mbits/sec
```

Show all ONU's on the MALC.

```
zSH> gponanu showall
Slot 8  olt 1
Onu  Name            Enabled  Serial Number BW(Mb) GponPorts
    1  1-8-1-1            Yes    ZNTS 220001    1       1-8-1-501/gponport
    2  1-8-1-2            Yes    ZNTS 220002    4.5     1-8-1-502/gponport
    3  1-8-1-3            No     ZNTS 0         0       1-8-1-503/gponport
    4  1-8-1-4            No     ZNTS 0         0       1-8-1-504/gponport
    5  1-8-1-5            No     ZNTS 0         0       1-8-1-505/gponport
<SPACE> for next page, <CR> for next line, A for all, Q to quit
```

Show only the ONU 2.

```
zSH> gponanu showall 8/1/2
Slot 8  olt 1
Onu  Name            Enabled  Serial Number BW(Mb)  GponPorts

    1  1-8-1-2            Yes      ZNTS 220002    4.5     1-8-1-502/gponport
```

Show only the enabled ONU's.

```
zSH> gponanu showall 8/1 enabled
Slot 8 olt 1
Onu  Name            Enabled  Serial Number  BW(Mb)  GponPorts
    1  1-8-1-1          Yes    ZNTS 220001     1        1-8-1-501/gponport
    2  1-8-1-2          Yes    ZNTS 22002      18.5     1-8-1-502/gponport
Total onus = 2 bandwidth =   19.5
```

Clear or deactivate ONU 2.

```
zSH> gpononu clear 8/1/2
Onu 2 (previously enabled with serial number ZNTS 220002) has been cleared
zSH> MAR 12 14:17:13: alert  : 1/8/1025: alarm_mgr: 01: 8:03:01 Critical ONU
Down
Line 1/8/1/2/gpononu CAUSE: inactive
```

gr303showcrv

The **gr303showcrv** command displays information about GR-303 call reference values (CRVs). This command is available when T1/E1 uplink and voicegateway cards are installed.

Syntax `gr303showcrv igName crvNumber`

Options **igName**
The GR-303 interface group (IG) name.

crvNumber
The GR-303 call reference value (CRV) number.

Example 1 To view information on all CRVs within an IG, use the **gr303showcrv** command with only the IG name specified:

```
zSH> gr303showcrv test
ig: 0 crv: 1 in-serivce this CRV is operational on the switch and the device
ig: 0 crv: 2 in-serivce
ig: 0 crv: 3 in-serivce
ig: 0 crv: 4 in-serivce
ig: 0 crv: 5 in-serivce
ig: 0 crv: 6 in-serivce
ig: 0 crv: 7 in-serivce
ig: 0 crv: 8 in-serivce
ig: 0 crv: 9 in-serivce
ig: 0 crv: 10 in-serivce
ig: 0 crv: 11 out-of-serivce - SWITCH NOT PROV this CRV is provisioned on the device but is not
provisioned on the switch
ig: 0 crv: 12 out-of-serivce - SWITCH NOT PROV
ig: 0 crv: 13 out-of-serivce - SWITCH NOT PROV
ig: 0 crv: 14 out-of-serivce - SWITCH NOT PROV
...
```

> **Note:** This is a truncated response to the **gr303showcrv** *igname* command.

Example 2 To view information on one CRV within the IG, use the **gr303showcrv** command with the IG name and CRV specified:

```
zSH> gr303showcrv test 1
ig: 0 crv: 1 in-serivce
```

Access Level user

Products MALC, Sechtor 100A

H

help

Displays help text for a command.

Syntax `help [ -p ][ command ]`

Options **(no option)**

Displays the available commands with a brief explanation.

command

Displays detailed help for the specified command.

-p

Displays the available commands, a brief explanation of the command, and the access level.

Example 1 Enter the **help** command without options to display the available commands:

```
zSH> help
  1  adduser
  2  ata - initialize/show ATA flash partitions.
  3  bootstate - <slot> display the boot state of a given
slot card
  4  cd - change current directory.
  5  changepass
  6  commit <profile-type> <profile-storage-key>
  7  copy - copy a file.
  8  create <profile-type> <profile-storage-key>
  9  del - Delete a file.
 10  delete <profile-type> <profile-storage-key>
 11  deleteuser <userName>
 12  dir - list directory contents.
 13  dump <[console] | [file filename] | [network host
filename]>
 14  eeshow eepromName <slot>
 15  featurebitdisplay  <featurenum>
 16  featurebitset offset mask value hashCode
 17  fhrameping shelf/slot</port>
 18  file - download/upload files.
 19  find [-s(ubSearch) | -d(etailed)] <stringToSearch>
 20  get <profile-type> <profile-storage-key>
 21  help [commands]

Type A<CR> to print all, <CR> to continue, Q<CR> to stop:
```

Example 2 To get help on a particular command, enter the **help** command followed by the name of the command. For example:

```
zSH> help slots
```

```
Use: slots [<slotNum>]
This command displays the card type present in each slot.
If <slotNum> is provided, it shows detailed information
about the card.
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

history

Displays the commands stored in the command buffer.

Syntax **history [*size*]**

Options

With no options, **history** displays the commands stored in the command buffer.

size
Specifies the number of commands to store in the history buffer.

Example zSH> **history**
```
 1  addroute
 2  addhost
 3  help
 4  showinetstat
 5  showversion
 6  list subscriber
 7  list
 8  showhost
 9  showroute
10  setprompt
11  help
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

host

The **host** command is used to add, delete, or show hosts in a point-to-multipoint network.

Syntax **zSH> host add *interface*/*type* vc *vpi*/*vci* [tc *tcvalue*] td**
tdvalue | txtd _tdvalue_ rxtd _tdvalue_ other | llc static
_x.x.x.x_ | dynamic _SubnetGroup_ _count_ [video
MulticastControlList/_NumberofVideoStreams_] vlan _vlanid_
slan _slanid_ [cos _cosValue_] [scos _scosValue_] [tosDisable |
tosOrig _tosValue_ | tosAll _tosValue_]

add

Add hosts to an IP multi-point subnet. Hosts may be given static IP addresses or dynamically assigned addresses using DHCP.

interface/type
 Name and type of the physical interface, such as **1-4-3-0/adsl**.

Note: In the host add command, <slot> and <port> may be replaced with brackets containing numbers in series and/or (dash-separated) ranges; <port> may be replaced with wildcard '*' for all ports on the card.
Examples:
1-[10-13]-[1,3-5,21]-0/ds3 for DS3 ports 1,3,4,5,21 on cards 10,11,12, and 13.
1-[6,7,9]-*-0/adsl for all ADSL ports on cards 6, 7, and 9.

---

vc *vpi/vci*
Used to specify the VPI and VCI values for ATM circuits. For example: **vc 0/23**.

tc *tcval*
Used to specify the traffic container index to be used. This is a mandatory field if the physical interface type is PON.

td *tdvalue* | **rxtd** *rxtdvalue* **txtd** *txtdvalue*
Used to specify the traffic descriptor index to be used. Optionally, separate **rxtd** *rxtdvalue* and **txtd** *txtdvalue* values may be specified for ADSL connections, where separate traffic descriptors are used for the upstream and downstream traffic due to the asymmetric nature.

other | llc
The type of AAL5 data encapsulation used: **other** sets RFC 1483 multiprotocol encapsulation over AAL5, which is commonly used with bridges; **llc** sets logical link control encapsulation over AAL5, which is commonly used with routers. If no value is given, the default **other** is the AAL5 encapsulation type.

static *x.x.x.x*
Add a host to the given subnet with the static IP addresses of *x.x.x.x*.

dynamic *subnetgroup count*
Add *count* number of hosts to the given subnet and have their IP addresses assigned dynamically using DHCP from IP addresses that are in the subnet group as specified by *subnetgroup*.

video *MulticastControlList/NumberofVideoStreams*
Adds a video client connection using the specified multicast control list entry and maximum number of video streams. By default, the multicast control list enables subscriptions up to the number of maximum video streams on the interface without control list checking. Video streams can be configured on 10/100 and GigE interfaces.

When the **video** argument is specified, the VCL cast type for the subscriber interface (**vcl_cast_type**) is set to **p2mpleaf**.

vlan
　　Specifies the VLAN ID to apply to this interface.

slan
　　Specifies the SLAN (second VLAN) ID to apply to this interface.

cos
　　For tagged packets, specifies the value loaded into the priority field of the
　　VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the
　　highest. The default value is 0.

scos
　　For SLAN packets, specifies the value loaded into the priority field of the
　　VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the
　　highest. The default value is 0.

`tosDisable/tosOrig//tosAll`
　　Specifies the TOS settings and values to apply to this interface.

Syntax **`host modify interface/type vc vpi/vci vlan vlanID`**

modify
　　Modify hosts to an IP multi-point subnet. Hosts may be given static IP
　　addresses or dynamically assigned addresses using DHCP.

interfacename/type
　　Name and type of the physical interface, such as 1-4-3-0/adsl.

Note: In the **host modify** command, <slot> and <port> may be
replaced with brackets containing numbers in series and/or
(dash-separated) ranges; <port> may be replaced with wildcard '*' for
all ports on the card.
Examples:
1-[10-13]-[1,3-5,21]-0/ds3 specifies DS3 ports 1,3,4,5,21 on cards
10,11,12, and 13.
1-[6,7,9]-*-0/adsl specifies all ADSL ports on cards 6, 7, and 9

---

vc *vpi/vci*
　　Used to specify the VPI and VCI values for ATM circuits. For example:
　　vc 0/23.

vlan *vlanID*
　　Specifies that VLAN ID that was assigned to the host. If a VLAN ID was
　　assigned to the host when it was configured, the VLAN ID must be
　　specified when deleting the host.

Syntax **`host delete interface/type vc vpi/vci ip x.x.x.x | unused count | all vlan vlanID`**

delete
　　Delete a host or hosts from an IP multi-point subnet.

interfacename/type
　　Name and type of the physical interface, such as **1-4-3-0/adsl**.

> Note: In the **host delete** command, <slot> and <port> may be
> replaced with brackets containing numbers in series and/or
> (dash-separated) ranges; <port> may be replaced with wildcard '*' for
> all ports on the card.
> Examples:
> 1-[10-13]-[1,3-5,21]-0/ds3 for DS3 ports 1,3,4,5,21 on cards
> 10,11,12, and 13.
> 1-[6,7,9]-*-0/adsl for all ADSL ports on cards 6, 7, and 9.

vc *vpi/vci*

Used to specify the VPI and VCI values for ATM circuits. For example:
vc 0/23.

ip *x.x.x.x*

Delete the host with the IP address of *x.x.x.x*. This host may have been
assigned its address either via DHCP or statically.

unused *count*

Delete up to *count* number of DHCP host entries that have not yet been
assigned an IP address.

all

Delete all hosts on this subnet and the subnet itself.

video *MulticastControlList/NumberofVideoStreams*

Deletes the video client connection using the specified multicast control
list entry and maximum number of video streams.

vlan

Specifies that VLAN ID that was assigned to the host. If a VLAN ID was
assigned to the host when it was configured, the VLAN ID must be
specified when deleting the host.

Syntax `host show interface` *`interface/type`* `vc` *`vpi/vci`* `| addr`
`x.x.x.x | host x.x.x.x`

show

Show hosts that are part of an IP multi-point subnet.

interface *interfacename/type*

Show only hosts on this physical interface.

vc *vpi/vci*

Must be used with interface keyword. Show only hosts on given interface
with this VCL value.

addr *x.x.x.x*

Show only hosts with on the interface with the address of *x.x.x.x*.

host *x.x.x.x*

Show only the host with the address of *x.x.x.x*.

Example 1

`zSH> host add 1-11-1-0/adsl vc 0/35 td 1 llc dynamic 1 3`

Example 2

```
zSH> host delete 1-11-1-0/adsl vc 0/35 all
```

Example 3

```
zSH> host show interface 1-11-1-0/adsl vc 0/35
```

Example 4

```
zSH> host add 1-11-1-0/adsl vc 0/35 td 1 llc dynamic 1 3 video 1/4
```

Example 5

```
host add 1-6-9-0/adsl vc 0/37 td 1 tpid 0x8200 vlan 100 slan 10 cos 2 scos 3
dynamic 1 3
```

Products MALC, Raptor 319, Raptor 719, Raptor 723

I

ifxlate

Translates between ifindex values and physical interfaces (of the form *shelf-slot-port-subport-type*).

Syntax `ifxlate ifindex`

Options *ifindex*

The interface index to translate into a physical interface.

Example The following example displays the associated *shelf-slot-port-subport-type* of the interface:

```
zSH> ifxlate 1
ifIndex: ----------> {1}
shelf: ------------> {1}
slot: -------------> {3}
port: -------------> {1}
subport: ----------> {0}
type: -------------> {ethernetcsmacd}
adminstatus: ------> {up}
physical-flag: ----> {true}
iftype-extension: -> {none}
ifName: -----------> {1-3-1-0}
redundancy-param1: ->  {0}
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

image

Downloads software to the system from a TFTP server, updates the boot partition, or verifies the flash card file system.

> ✓ **Note:** The **image** command should be used to download software image files, because it verifies the image header as part of the download process.

Syntax `image download` *`tftphost file_path`* `[`*`destination`*`]`

Downloads the software image and verifies the image header.

tftphost
> The name or IP address of the TFTP server.

file_path
> The full path name of the software image file on the TFTP server.

destination
> The full path name where the software image file should be downloaded to. If not specified, the file is downloaded to the current directory with the original file name.

> ✓ **Note:** BAN system software is loaded onto the flash cards on the Infoservices card. The path to the software image file is either */card1/ file* or */card2/file*, depending on which PC card contains the software.

Syntax `image flash` *`file port`* `[standby | all]`

Updates the boot partition on the PC card.

file
> Full path to the software image file. For example, */card1/infoservraw.bin* is the full path to the software image on the first PC card.

port
> The PC card port that contains the boot partition. For the MALC or Raptor this value is always 1.

standby
> Performs the image flash on the standby card.

all
> Performs the image flash on both the active and the standby card.

Syntax `image verify` *`file`*

Verifies the specified file.

file
> Full path to the software image file. For example, */card1/infoservraw.bin* is the full path to the software image on the first PC card.

Example   The following example verifies the image file on the first PC card:

```
zSH> image verify malcgige.bin
File: malcgige.bin
Size: 7749520 bytes
Header Version: 1
Card Type: MALC GIGE
Load Type: compressed binary
Load Address: 0x00010000
Checksum: 0xb5443578
Image verify successful
```

Access Level   admin

Products   BAN, Raptor 100, MALC, Raptor 319, Raptor 719, Raptor 723

See Also   **file**

imalink

The **imalink** command enables you to move, add, delete, or view IMA (inverse multiplexing over ATM) links.

Syntax   **imalink move *SourceIMAGroup DestinationIMAGroup ds1Interface***

Moves an IMA link from one group to another.

SourceIMAgroup
   The IMA group to move the link from, in the form
   shelf-slot-port-subport/**atmima**.

DestinationIMAgroup
   The IMA group to move the link to, in the form *shelf-slot-port-subport*/
   atmima.

ds1Interface
   The link group to move, in the form *shelf-slot-port-subport*/**ds1**.

Syntax   **imalink show [IMAgroup]**

Displays information about or IMA groups or only the specified IMA group.

IMAgroup
   The IMA group to view, in the form *shelf-slot-port-subport*/**atmima**.

Syntax   **imalink mkuni *ds1Interface***

Rectifies an orphan DS1 by making it a User to Network Interface (UNI).

ds1Interface
   The link to move in the form *shelf-slot-port-subport*/**ds1**.

Syntax   **imalink add IMAgroup ds1Interface**

Adds an IMA link. Do not use this command unless requested to by GSS.

IMAgroup
> The IMA group to remove, in the form *shelf-slot-port-subport*/**atmima**.

ds1Interface
> The link group to add, in the form *shelf-slot-port-subport*/**ds1**.

Syntax `imalink remove IMAgroup ds1Interface`

Removes an IMA link.

> **Note:** This option should not be used. If you do not want a link to belong to any IMA group, it is recommended that you admin down the interface in the **if-translate** profile.

IMAgroup
> The IMA group to remove, in the form *shelf-slot-port-subport*/**atmima**.

ds1Interface
> The link group to remove, in the form *shelf-slot-port-subport*/**ds1**.

Example 1 To move a link:

```
zSH> imalink move 1-1-1-0/atmima 1-1-4-0/atmima 1/1/8/0/
ds1
Stack unbind successful.
Link moved successfully.
```

Then view the group with the new link:

```
zSH> imalink show 1-1-4-0/atmima
DS1 Links for IMA Group 1-1-4-0/atmima:
If Index    If Name
---------   --------------
000011      1-1-8-0
```

Example 2 To view information about the links in an IMA group:

```
zSH> imalink show 1-3-1-0/atmima
DS1 Links for IMA Group 1-3-1-0/atmima:
If Index    If Name
---------   --------------
000736      1-3-1-0
000737      1-3-2-0
000738      1-3-3-0
000739      1-3-4-0

zSH> imalink show
DS1 Links for IMA Group 1-1-1-0/atmima:
If Index    If Name
---------   --------------
000004      1-1-1-0
000005      1-1-2-0
000006      1-1-3-0
000007      1-1-4-0
```

```
               000008     1-1-5-0
               000009     1-1-6-0
               000010     1-1-7-0
               DS1 Links for IMA Group 1-1-2-0/atmima:
               If Index    If Name
               ---------   --------------
               000011     1-1-8-0
               IMA Group 1-1-3-0/atmima has no assigned links.
               IMA Group 1-1-4-0/atmima has no assigned links.
               DS1 Links for IMA Group 1-6-1-0/atmima:
               If Index    If Name
               ---------   --------------
               000090     1-6-4-0
               DS1 Links for IMA Group 1-6-2-0/atmima:
               If Index    If Name
               ---------   --------------
               000091     1-6-5-0
               000092     1-6-6-0
               000093     1-6-7-0
               000094     1-6-8-0
               000089     1-6-3-0
               DS1 Links for IMA Group 1-6-3-0/atmima:
               If Index    If Name
               ---------   --------------
               000095     1-6-9-0
               000096     1-6-10-0
               000097     1-6-11-0
               000098     1-6-12-0
               DS1 Links for IMA Group 1-6-4-0/atmima:
               If Index    If Name
```

Access Level admin

Products MALC, Raptor, Raptor 100

See Also **showline**

imarpshow

The **imarpshow** command displays resource provider information about the
MALC IMA group. This command is available only when an uplink card with
IMA support is installed. The command uses the following syntax:

Syntax `imarpshow` [*index*]

Options **index**
   The IMA group number (currently, 1 (one) is the only supported value).

Example 1
```
zSH> imarpshow
RP Info:
          rp state ------------------> RP_INITIALIZED
          address -------------------> 01:01:113
          rp shelf ------------------> 1
          rp slot -------------------> 1
          rp ima core started -------> TRUE
```

```
                              imaGrpProfLeaseId ----------> 0x02070000_00000057
                              LineRRProvLeaseId ----------> 0x02070000_00000055
                              LineRRClientLeaseId --------> 0x02070000_00000056
                              numImaGroups ---------------> 1
                              ImaGroupIndecies:  1
```

Example 2   To display complete information about an IMA group, specify the group number:

```
zSH> imarpshow 1
RP Info:
        rp state ------------------> RP_INITIALIZED
        address -------------------> 01:01:113
        rp shelf ------------------> 1
        rp slot -------------------> 1
        rp ima core started -------> TRUE
        imaGrpProfLeaseId ---------> 0x02070000_00000057
        LineRRProvLeaseId ---------> 0x02070000_00000055
        LineRRClientLeaseId -------> 0x02070000_00000056
        numImaGroups --------------> 1
        ImaGroupIndecies:  1
 IMA Group Index =1
................................................
        group status ==========> OOS
        ........................           group ne state -------->
INSUFFICIENTLINKS
        group fe state --------> OPERATIONAL
        ........................
        group ctlr state ------> GRP_INITIALIZED
        group ifIndex ---------> 11
        group in service ------> TRUE
        driver attached -------> TRUE
        driver unit -----------> 0
        auto-created ----------> FALSE
        ifxLeaseId ------------> 0x02070000_00000057
        lineProfLeaseId -------> 0x02070000_00000057
        lineGrpLeaseId --------> 0x02070000_00000057
        ifStackLeaseId --------> 0x02070000_00000057
        ds1LeaseId ------------> 0x00000000_00000000
        ........................
        ifxlateProfValid ----------------> TRUE
        ifxlatProf.ifIndex --------------> 11
        ifxlatProf.shelf ----------------> 1
        ifxlatProf.slot -----------------> 1
        ifxlatProf.port -----------------> 2
        ifxlatProf.ifType ---------------> ATMIMA
        ifxlatProf.adminStatus ----------> UP
        ........................
        lineProfValid -------------------> TRUE
        lineProf.profileName ------------> Atm IMA Group default line profile
        lineProf.physicalAddress.shelf --> 1
        lineProf.physicalAddress.slot ---> 1
        lineProf.physicalAddress.port ---> 2
        lineProf.lineGroupName ----------> 11
```

```
          ........................
          lineGrpProfValid ----------------> TRUE
          lineGrpProf.groupName -----------> 1/1/1
          lineGrpProf.primaryName ---------> 11
          lineGrpProf.secondaryName -------> 0
          lineGrpProf.primaryWeight -------> 0
          lineGrpProf.secondaryWeight -----> 0
          lineGrpProf.adminState ----------> UP
          ........................
          imaGrpProfValid ----------------> TRUE
          imaGrpProf.groupSymmetry --------> SYMMETRICAL
          imaGrpProf.minNumTxLinks --------> 1
          imaGrpProf.minNumRxLinks --------> 1
          imaGrpProf.txClkMode ------------> CTC
          imaGrpProf.txImaId -------------> 1
          imaGrpProf.txFrameLength --------> M128
          imaGrpProf.diffDelayMax ---------> 75
          imaGrpProf.alphaValue -----------> 1
          imaGrpProf.betaValue ------------> 1
          imaGrpProf.gammaValue -----------> 1
          imaGrpProf.testLinkIfIndex ------> 0
          imaGrpProf.testPattern ----------> -1
          imaGrpProf.testProcStatus -------> DISABLED
          imaGrpProf.txTimingRefLink ------> 0
          imaGrpProf.rxTimingRefLink ------> 0
          ........................
          Link#1
          linkType -----------> DS1_PROFILE_LINETYPE_ESF
          ifIndex ------------> 2
          framerstatus -------> OOS
          netxlinkstatus -----> NOT-IN-GROUP
          nerxlinkstatus -----> NOT-IN-GROUP
          ........................
...
...
...
```

Products   MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

imatppshow

Displays the status of an IMA test pattern procedure.This command is
available only when an uplink card with IMA support is installed.

Syntax   `imatppshow [group]`

Options   **group**
            Number of the IMA group to display information about.

Example 1   If the test is successful, **imaGroupTestProcStatus** displays **OPERATING**:

```
zSH> imatppshow 1
TestLink .....................: 2
imaGroupTestPattern ..........: 23
```

```
imaGroupTestProcStatus .......: OPERATING
```

Example 2   If the test fails (if, for example, the remote link is down), **imaGroupTestProcStatus** displays **LINKFAIL**:

```
zSH> imatppshow 1
TestLink ....................: 2
imaGroupTestPattern ..........: 71
imaGroupTestProcStatus .......: LINKFAIL
```

Example 3   After the test is disabled, the **imaGroupTestProcStatus** displays **DISABLED**:

```
zSH> imatppshow 1
TestLink ....................: 2
imaGroupTestPattern ..........: 23
imaGroupTestProcStatus .......: DISABLED
```

Products   MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

initiateconfigsync

Initiates a manual update of the ZMS database with the device's configuration. Config sync updates are performed automatically whenever a change is made to the device via the CLI. During a restore, however, the updating process is suspended. After a restore, a full config sync update is required.

> **Note:** Zhone recommends that you perform a config sync update from ZMS. For more information, refer to the documentation that came with the ZMS software.

Syntax   `initiateconfigsync [full | partial]`

Options   **full**

Sends all profiles to ZMS. This option could cause significant processing by ZMS.

partial

Sends only the new or updated profiles to ZMS.

Access Level   admin

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

interface

The **interface** command can add, delete, or show numbered and unnumbered (floating) interfaces in different subnets.

Syntax   `interface add `*`interface`*`/`*`type`*` vc `*`vpi`*`/`*`vci`*` [tc `*`tcvalue`*`] td `*`tdvalue`*` | txtd `*`tdvalue`*` rxtd `*`tdvalue`*` llc | other vlan`

```
vlanid slan slanid [cos cosValue] [scos scosValue]
[tosDisable | tosOrig tosValue | tosAll tosValue] client
| IPaddr netmask server name [video MulticastControlList/
NumberofVideoStreams]
```

```
interface add float [interface name] IPaddr netmask
```

float

    Adds a floating or unnumbered IP interface with the specified IP address and network mask.

add

    Provides one-line configuration of IP interfaces, including the creation of the **ip-interface-record**, **if-translate**, and **atm-vcl** records.

interfacename/type

    Name and type of the physical interface.

vc vpi/vci

    Used to specify the VPI and VCI values for ATM circuits. For example: **0/23**.

td *tdvalue* | **rxtd** *rxtdvalue* **txtd** *txtdvalue*

    Used to specify the traffic descriptor index to be used. Optionally, separate **rxtd** *rxtdvalue* and **txtd** *txtdvalue* values may be specified for ADSL connections, where separate traffic descriptors are used for the upstream and downstream traffic due to the asymmetric nature.

tc *tcvalue*

    Used only for PON interfaces to specify the traffic container index to be used.

llc | other

    The type of AAL5 data encapsulation used: **llc** sets logical link control encapsulation over AAL5, which is commonly used with routers; **other** sets RFC 1483 multiprotocol encapsulation over AAL5, which is commonly used with bridges. If no value is given, the default **llc** is the AAL5 encapsulation type.

vlan

    Specifies the VLAN ID to apply to this interface.

slan

    Specifies the SLAN (second VLAN) ID to apply to this interface.

cos

    For tagged packets, specifies the value loaded into the priority field of the VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the highest. The default value is 0.

scos

    For SLAN packets, specifies the value loaded into the priority field of the VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the highest. The default value is 0.

tosDisable/tosOrig//tosAll

    Specifies the TOS settings and values to apply to this interface.

client/IPaddress
>   Client name and IP addresss.

IPaddr
>   Address will given as a static IP address. The IP address can have a subnet portion denoted by */x.*

netmask
>   Masks out certain parts of host address and all of the network portion of the IP address.

server
>   Server name.

name

video *MulticastControlList/NumberofVideoStreams*
>   Adds a video client connection using the specified multicast control list entry and maximum number of video streams. By default, the multicast control list entry enables subscriptions up to the number of maximum video streams on the interface without control list checking.

>   When the **video** argument is specified, the VCL cast type for the subscriber interface (**vcl_cast_type**) is set to **p2mpleaf**.

Syntax `interface delete physicalInterface vpi/vci`

delete
>   Removes all of the configuration done by the **interface add** command.

physicalInterface
>   Name and type of the physical interface, such as **1-4-3-0/hdsl2**.

vpi/vci
>   Used to specify the VPI and VCI values for ATM circuits. For example: **0/23**.

Syntax `interface delete physicalInterface vpi/vci`

a
>   Displays all provisioned interfaces, including floating (unnumbered) interfaces and internal interfaces such as the loopback interface.

l
>   Displays the interface IfIndex values and flag information.

i
>   Displays just the specified interface.

Syntax `interface delete float [interface name] IPaddr netmask`

float
>   Removes the floating interface associated with the specified interface name, IP address, and network mask.

Example 1

zSH> **interface add 1-11-1-0/adsl vc 0/35 td 1 10.0.0.1 netmask 255.255.255.0**

Example 2

zSH> **interface delete 1-11-1-0/adsl vc 0/35**

Example 3

```
zSH> interface show
579 interfaces
Interface     Status  Rd/Address            Media/Dest Address     IfName
-----------------------------------------------------------------------------
1/1/1/0/ip    UP      1 192.24.200.223/24   00:01:47:43:c0:38      ethernet1
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/772 multipoint       1-10-21-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/764 multipoint       1-10-13-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/756 multipoint       1-10-5-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/614 multipoint       1-9-4-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/530 multipoint       1-8-10-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/472 multipoint       1-7-29-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/446 multipoint       1-7-16-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/388 multipoint       1-6-35-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/304 multipoint       1-5-41-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/240 multipoint       1-5-9-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/220 multipoint       1-4-47-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/156 multipoint       1-4-15-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/72 multipoint        1-3-21-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/1092 multipoint      1-14-44-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/1044 multipoint      1-13-27-0-adsl-0-35
1/1/1/0/ip    DOWN    1 [10.223.8.1]        0/960 multipoint       1-12-33-0-adsl-0-35
<SPACE> for next page, <CR> for next line, A for all, Q to quit
```

Example 4   This example adds interface 1-8-13-0/adsl with a COS value of 7.

interface add 1-8-13-0/adsl vc 0/35 td 20000 other vlan 1 cos 7 23.23.23.23 255.255.255.0

Example 5   This example adds interface 1-8-13-0/adsl with a COS value of 1 and specifies to add this value to all packets originating from this interface.

interface add 1-8-13-0/adsl vc 0/35 td 20000 other vlan 1 cos 1 tosOrig 1 23.23.23.23 255.255.255.0

Example 6   This example adds interface 1-8-13-0/adsl with a COS value of 5 and specifies to add the value to all outgoing packets on this interface.

interface add 1-8-13-0/adsl vc 0/35 td 20000 other tos all cos 5 23.23.23.23 255.255.255.0

Example 7   This example adds interface 1-8-13-0/adsl and disables the TOS feature.

interface add 1-8-13-0/adsl vc 0/35 td 20000 other tosDisable 23.23.23.23 255.255.255.0

Example 8 This example adds a floating (unnumbered) interface using the name IP210 and the IP address 172.24.5.210 with a subnet mask of 255.255.255.0.

```
interface add float IP210 172.24.5.210 255.255.255.0
```

Products MALC, Raptor 319, Raptor 719, Raptor 723

ip igmpstat

Displays the IGMP statistics.

Syntax `ip igmpstat active | summary`

Options **active**
Displays IGMP statistics for only the active interfaces.

summary
Displays only IGMP statistics summary data.

Example The following example displays the current IGMP statistics:

```
zSH> ip igmpstat
ICMP:
        0 call to icmp_error
        0 error not generated because old message was icmp
        Output histogram:
                echo reply: 1
        0 message with bad code fields
        0 message < minimum length
        0 bad checksum
        0 message with bad length
        Input histogram:
                destination unreachable: 120
                echo: 1
        1 message response generated
zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip ifstat

Displays the interface statistics. The statistics are complete only for the interfaces that exist on the card. Virtual or non-local interfaces will not show received packets.

Syntax `ip ifstat [[ifname] | [ifindex [ifindex2]] | [shelf/slot/ port [s/s/p]]]`

Options *ifname*
The name of the physical interface.

ifindex
> The interface index to translate into a physical interface.

ifindex2
> The second interface index to translate into a physical interface.

shelf/slot/port
> The shelf/slot/port for which statistics are displayed.

Example The following example displays the current interface statistics:

```
zSH> ip ifstat
      ifName          rxpkt       txpkt   rxmc   txmc  ierr  oerr  sqsz  sqdp
        lo            14392       14392      0      0     0     0     0     0
      1-2-1-0         56187       13742  42460     22     0     0     0     0
2 interfaces
zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip ifsum

Displays a summarized list of interfaces known to the card.

Syntax `ip ifsum [ifname]`

Options *ifname*
> The name of the physical interface.

Example The following example displays the current interfaces:

```
zSH> ip ifsum
lo SOFTWARELOOPBACK ifindex 0 (ifp 0x23e3bd0, 6|3)
     Flags: UP LOOPBACK MCAST ARP RUNNING
     inet 127.0.0.1 netmask 255.0.0.0
1-1-1-0 ETHERNETCSMACD ifindex 69 (ifp 0x256b5e0, 10|7)
     Flags: UP BCAST MCAST IPFWD MCASTFWD ARP RUNNING CFGCURRENT
     inet 172.16.88.20 netmask 255.255.255.0  bcast 172.16.88.255
1-5-1-0-aal5proxy-0-32 RFC1483 vpi/vci 0/32 ifindex 582 (ifp 0x256b92c, 4|1)
     Flags: UP POINT-TO-POINT MCAST IPFWD MCASTFWD RUNNING CFGCURRENT
MEDIAP2PUNNUMBERED
     inet 10.10.20.1 netmask 255.255.255.255  destinet 0.0.0.0
3 interfaces
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip inetstat

Displays the active TCP/UDP/RAW endpoints terminating on this card.

Syntax `ip inetstat [-s]`

Options **-s**

Displays additional data.

Example The following example displays the active TCP/UDP/RAW endpoints terminating on this card:

```
zSH> ip inetstat
Active Internet connections (including servers)
PCB        Proto Recv-Q Send-Q  Local Address       Foreign Address     (state)
--------   ----- ------ ------  ------------------  ------------------  -------
32169c0    TCP        0    214  172.16.80.101.23    172.16.48.84.1762   ESTABLISHED
3215c58    TCP        0      0  172.16.80.101.23    172.16.41.218.4908  ESTABLISHED
3216078    TCP        0      0  172.16.80.101.23    172.16.41.176.4893  ESTABLISHED
3215a48    TCP        0      0  0.0.0.0.23          0.0.0.0.0           LISTEN
3216288    UDP        0      0  0.0.0.0.2427        0.0.0.0.0
3216180    UDP        0      0  0.0.0.0.5060        0.0.0.0.0
3215eec    UDP        0      0  0.0.0.0.67          0.0.0.0.0
3215bd4    UDP        0      0  0.0.0.0.520         0.0.0.0.0
3215b50    UDP        0      0  0.0.0.0.162         0.0.0.0.0
3215acc    UDP        0      0  0.0.0.0.161         0.0.0.0.0
32160fc    RAW        0      0  0.0.0.0.0           0.0.0.0.0

Active Internet connections (additional data)
PCB        Socket    ProtoPCB Domain   Route    MAMA Address       MAMADom
--------   --------  -------- -------- -------- -----------------  --------
32169c0    79cbf70   7db396c  1        793a610  255.255.255.255.0  0
3215c58    79cb2f0   7db3a70  1        793a610  255.255.255.255.0  0
3216078    7954910   7db355c  1        793a610  255.255.255.255.0  0
3215a48    7955270   7db3458  1        793a610  255.255.255.255.0  0
3216288    7958470   0        1        0        255.255.255.255.0  0
3216180    7954aa0   0        1        0        255.255.255.255.0  0
3215eec    795a540   0        1        0        255.255.255.255.0  0
3215bd4    7959410   0        1        0        255.255.255.255.0  0
3215b50    79571b0   0        1        0        255.255.255.255.0  0
3215acc    795bcb0   0        1        0        255.255.255.255.0  0
32160fc    7958dd0   0        1        0        255.255.255.255.0  0
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip ipstat

Displays the IP statistics.

Syntax `ip ipstat [clear]`

Options **clear**

Clears the current statistics.

Example The following example displays the current IP statistics:

```
zSH> ip ipstat
```

```
                 total 46595
                badsum     0
              tooshort     0
              toosmall     0
               badhlen     0
                badlen     0
            infragments    0
            fragdropped    0
            fragtimeout    0
                forward    0
            cantforward 14007
            redirectsent   0
        unknownprotocol    0
              nobuffers    0
            reassembled    0
            outfragments   0
                noroute    0
                fastfwd    0
         fastfwdnoroute    0
        ffwdnointerface    0
            nointerface    0
                c2ctotal   0
               c2cbadptr   0
                c2cnopkt   0
            c2cnoipktmem   0
           c2ccorruptpkt   0
                c2cttlexp  0
           c2clastchance   0
             flingnoipkt   0
              flingerror   0
                   flung   0
                rawflung   0
               rawnofling  0
              fwdloopdrop  0
           localfastpath 32203
       pendingarpoverflow   0
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip tcpstat

Displays the TCP statistics.

Syntax `ip tcpstat`

Example The following example displays the current TCP statistics:

```
zSH> ip tcpstat
TCP:
        20071 packets sent
                10457 data packets (4305315 bytes)
```

```
              1 data packet (7 bytes) retransmitted
              9531 ack-only packets (1 delayed)
              0 URG only packet
              0 window probe packet
              47 window update packets
              35 control packets
        20103 packets received
              10366 acks (for 4305330 bytes)
              43 duplicate acks
              0 ack for unsent data
              9817 packets (4150800 bytes) received in-sequence
              3 completely duplicate packets (6 bytes)
              0 packet with some dup. data (0 byte duped)
              5 out-of-order packets (0 byte)
              0 packet (0 byte) of data after window
              0 window probe
              49 window update packets
              0 packet received after close
              0 discarded for bad checksum
              0 discarded for bad header offset field
              0 discarded because packet too short
        4 connection requests
        32 connection accepts
        36 connections established (including accepts)
        37 connections closed (including 0 drop)
        0 embryonic connection dropped
        10367 segments updated rtt (of 10393 attempts)
        0 retransmit timeout
              0 connection dropped by rexmit timeout
        0 persist timeout
        10 keepalive timeouts
              10 keepalive probes sent
              0 connection dropped by keepalive
        0 pcb cache lookup failed
        0 mama cache lookup failed
        0 mama flings
        0 mama alloc drops
zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip udpstat

Displays the UDP statistics.

Syntax `ip udpstat`

Example The following example displays the current UPD statistics:

```
zSH> ip udpstat
UDP:
```

```
            20323 total packets
            12221 input packets
            8102 output packets
            0 incomplete header
            0 bad data length field
            0 bad checksum
            4116 broadcasts received with no ports
            0 full socket
            0 allocated but not bound drops
            8100 pcb cache lookups failed
            0 pcb hash lookup failed
            0 mama cache lookup failed
            0 packets flung to other card
zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip arpdelete

Deletes an entry from the ARP table.

Syntax `ip arpdelete ipaddress`

Options **ipaddress**
Specifies the IP address of the ARP table entry to be deleted.

Example The following example deletes ARP table entry for IP address :

```
zSH> ip arpdelete
QQQ

zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

ip arpflush

Flushes the ARP table of all entries.

Syntax `ip arpflush`

Example The following example flushes the ARP table of all entries:

```
zSH> ip arpflush
QQQ

zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor
100A, Z-Edge 64

ip arpshow

Displays the ARP table.

Syntax `ip arpshow`

Example The following example displays the ARP table:

```
zSH> ip arpshow
LINK LEVEL ARP TABLE
destination      gateway              flags  Refcnt  Use           Interface
--------------------------------------------------------------------------
172.16.80.201    08:00:20:b1:9a:ab     405    0       8102          1-2-1-00
172.16.80.252    08:00:20:b8:f8:20     405    0       2089          1-2-1-00
172.16.80.254    00:02:16:75:3b:e1     405    1       0             1-2-1-00
--------------------------------------------------------------------------
        7 routes, 3 arp routes
--------------------------------------------------------------------------
--------------------------------------------------------------------------
        SRC ROUTE: 0 routes, 0 arp routes
zSH>
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor
100A, Z-Edge 64

L

lineGroup

Displays the line group number of the interface.

Syntax `linegroup index`

Options *index*
The shelf-slot-port-subport/type or user-defined string of the interface.

Example 1 `zSH> linegroup 1-1-1-0/ds3`
`lineGroupId: 5`

Example 2 `zSH> linegroup uplink2/other`
`lineGroupId: 7`

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor
100A, Z-Edge 64

line-red

Sets the redundancy behavior of Ethernet lines so Ethernet uplink cards, such as GigE card, will switchover from an active to a standby card when the active link goes down. The standby card must be in a running state for the switchover to occur.

Syntax `line-red set | clear | show ifname/type [timeout seconds]`
`[revertive | nonrevertive] [timeout seconds]`

Options **set**

Sets the line redundancy behavior on the specified interface to the specified settings.

clear

Removes any line redundancy settings on the specified interface.

show

Displays the current line redundancy settings.

ifname/type

Specifies the physical interface name and type. For example, ethernet1/ip specifies the uplink Ethernet interface on the malcGigE card.

timeout *seconds*

Specifies the amount of time to wait after a failure occurs before performing the switchover. If no timeout value is specified, a value of 0 is used.

revertive

After a redundancy switchover occurs and the failure is resolved, this setting forces the currently active card to wait the specified timeout period and then reboot to return traffic back to the other card.

nonrevertive

After a redundancy switchover occurs and the failure is resolved, this setting allows the currently active card to remain active, until another redundancy switchover occurs.

timeout *seconds*

Specifies the amount of time to wait after a failure is resolved before the revertive switch is performed. If no timeout value is specified, a value of 0 is used.

Example 1 This example enables redundancy on the ethernet1 physical interface with options set to timeout of 30 seconds, revertive, and revertive timeout of 600 seconds.

```
zSH> line-red set ethernet1/ip timeout 30 revertive timeout 600
```

Example 2 This example shows the display of the current line redundancy settings for the physical interface ethernet1:

```
zSH> line-red show ethernet1/ip
redundancy status for ethernet1/ip:
        REBOOT timeout 30 REVERTIVE revert timeout 600
```

Example 3 This example enables redundancy on the ethernet1 physical interface with options set to nonrevertive, and revertive timeout of 200 seconds. Because no switchover timeout value is specified, a value of 0 is used.

```
zSH> line-red set ethernet1/ip nonrevertive timeout 200
```

Access Level user

Products MALC, Raptor

list

Displays system profiles or records.

Syntax `list [ profile-type ] [ * ]`

Options **(no options)**

Without options, displays available profiles.

profile-type

The type of profile to display. This option displays all the profiles of the specified type, along with their profile indexes.

*

A wildcard that can be added anywhere in the command line after the list command:

- If it is the only option, it lists all records in the system, along with their index values.
- When added after *profile-type*, it lists all the records of that type, along with their indexes.
- When added as part of the *profile-index*, it lists all the profiles matching the specified index elements.

Example 1 The following example displays the available profiles:

```
zSH> list
aal2-audio-profile: audioProfileIdentifier/apIndex
aal2-cid-profile: ifIndex/vpi/vci/cid
aal2-vcl-profile: ifIndex/vpi/vci
adsl-co-profile: shelf/slot/port
adsl-cpe-profile: shelf/slot/port
adsl-profile: shelf/slot/port
atm-cc: atmVcCrossConnectIndex
atm-if: ifIndex
atm-if-stats: ifIndex
atm-traf-descr: index
atm-traf-descr-idx-next: index
atm-traf-descr-stats: index
atm-vcl: ifIndex/vpi/vci
atm-vcl-param: index
atm-vcl-stats: ifIndex/vpi/vci
atm-vpi: ifIndex/vpi
atm-vpl: ifIndex/vpi
bulk-statistic: index
```

```
bulk-statistics-config: index
<SPACE> for next page, <CR> for next line, A for all, Q to
quit
```

Example 2   The following example displays the **atm-vcls** configured on the system:

```
zSH> list atm-vcl
atm-vcl  1-7-4-0-ds3/atm/0/101
atm-vcl  1-7-4-0-ds3/atm/0/102
atm-vcl  1-9-2-0-hdsl2/atm/0/35
atm-vcl  1-9-4-0-hdsl2/atm/0/35
atm-vcl  1-5-1-0-sonet/atm/0/301
atm-vcl  1-7-4-0-ds3/atm/0/301
atm-vcl  1-7-4-0-ds3/atm/0/103
atm-vcl  1-15-1-0-ds3/atm/0/103
atm-vcl  1-15-1-0-ds3/atm/0/104
atm-vcl  1-9-6-0-hdsl2/atm/0/36
atm-vcl  1-9-6-0-hdsl2/atm/0/35
atm-vcl  1-15-1-0-ds3/atm/1/104
atm-vcl  1-7-4-0-ds3/atm/0/104
atm-vcl  1-15-1-0-ds3/atm/1/105
atm-vcl  1-9-6-0-hdsl2/atm/0/37
atm-vcl  1-7-4-0-ds3/atm/1/201
atm-vcl  1-5-1-0-sonet/atm/1/201
atm-vcl  1-7-4-0-ds3/atm/1/202
atm-vcl  1-5-1-0-sonet/atm/1/202
<SPACE> for next page, <CR> for next line, A for all, Q to
quit
```

Example 3   The following example displays all the records configured on the system:

```
zSH> list *
aal2-audio-profile  7/1
aal2-audio-profile  7/2
aal2-audio-profile  7/3
aal2-audio-profile  8/1
aal2-audio-profile  8/2
aal2-audio-profile  9/1
aal2-audio-profile  10/1
aal2-audio-profile  10/2
aal2-audio-profile  11/1
aal2-audio-profile  11/2
aal2-audio-profile  12/1
aal2-audio-profile  12/2
aal2-audio-profile  12/3
atm-cc  14
atm-cc  5
atm-cc  6
atm-cc  7
atm-cc  8
atm-cc  1
<SPACE> for next page, <CR> for next line, A for all, Q to
quit
```

Example 4 The following example displays all the **if-translate** profiles associated with shelf 1, slot 1:

```
zSH> list if-translate 1/1/*
if-translate  1-1-1-0/ethernetcsmacd
if-translate  1-1-1-0/rs232
if-translate  1-1-1-0/ip
3 entries found.
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **get**, **show**

load

Loads new software onto the system.

> **Note:** The **image** command should be used to download software image files, because it verifies the image header as part of the download process.

Syntax `load *tftphost image-file destination*`

Options *tftphost*
   The name or IP address of the TFTP server.

image-file
   The full path name of the software image file on the TFTP server.

destination
   The full path name where the software image file should be downloaded to.

   System software is loaded onto the system flash memory. On a BAN, the path to the software image file is either:

   /card1/file or */card2/file*

   depending on which PC card contains the software.

   On a MALC or Raptor, it is not necessary to specify a card in the destination.

Access Level admin

Notes Set the TFTP server time-out value to at least 5 seconds, and 5 retries to help prevent TFTP time-out or retry errors.

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **image**

log

Configures logging levels for messages on the system. The system sends log messages to a management session (either on the console or over a telnet session), a log file on the device, and, optionally, a syslog server.

The **log** command configures the type of information sent in these messages. By default, the system sends the same type of information to all log message destinations, and logging is disabled on both the serial craft port and over telnet sessions.

If the messages sent to the syslog server are configured the same as the log messages sent to the console or the persistent storage (the default) the **log** command also configures the **syslog** message contents. If the syslog messages have been modified (using the **log-module** profile or the **syslog** command), use the **syslog** command to modify syslog levels.

Syntax `log help`

help
   Displays the help menu.

Syntax `log show`

show
   Displays the currently configured logging levels for each software module.

Syntax `log level module level`

module
   The system module to set the level for. Use the **log show** command to display all the system modules.

level
   Sets the logging level for the specified module. Logging levels are:
   • 1 emergency
   • 2 alert
   • 3 critical
   • 4 error
   • 5 warning
   • 6 notice
   • 7 information
   • 8 debug

   You can specify either the name of the level or the number.

Syntax `log option type [ on | off ]`

Specifies the information to include in logging messages.

type **on**
> Specifies that the type of information be included in log messages. For example, ticks on displays current tick counts in place of date and time. To view the type of information you can include in a logging message, enter the **log option** command without any arguments.

type **off**
> Specifies that the type of information not be included in log messages.

Syntax `log [ enable | disable ] module`

enable *module*
> Enables logging for the specified module. Use the **log show** command to display all the system modules and whether they are enabled or not.

disable *module*
> Disables logging for the specified module.

Syntax `log session [on | off]`

on
> Enables logging for the current session only.

off
> Disables logging for the current session.

Syntax `log serial [on | off]`

on
> Enables logging on the serial craft port. This setting persists across reboots.

off
> Disables logging on the serial craft port. This setting persists across reboots.

Syntax `log display`

> Displays entries in the persistent log.

Syntax `log cache [ max | grep pattern | size | clear | help ]`

> **Note:** The **cache** option is only supported on the BAN, MALC, and Raptor.

log cache
> Displays the log cache.

log cache max *length*
> Sets the maximum number of log messages to store. The maximum log cache size is 2147483647, depending in the amount of memory available.

log cache grep *pattern*

Searches through the log cache for the specified regular expression.

log cache clear
Clears the log cache.

log cache *size*
Sets the maximum amount of memory for the log cache. Without options, displays the current log size.

log cache help
Displays help on the **log cache** command.

Example 1 The following example displays the logging levels and enabled status for the system modules:

```
zSH> log show
MODULE                                          LEVEL           STATUS
message                                         error           enabled
taskclock                                       error           enabled
card                                            error           enabled
bds_client                                      error           enabled
alarm_mgr                                       error           enabled
tnsxmgt                                         error           enabled
leaseapi                                        error           enabled
vcs-client                                      error           enabled
dirserclient                                    error           enabled
rebootserver                                    error           enabled
pcmciadiag                                      error           enabled
...
...
...
```

Example 2 The following example sets the logging level for the card module to information:

```
zSH> log level card info
Module: card at level: information
```

Example 3
```
zSH> log option ticks on
time: date: level: address: log: port: category: system:
ticks:  (0xf07)
```

Example 4 The following example shows how to configure what information to include in log messages.

```
zSH> log option all on
time:date:level:address:log:taskname:taskid:file:function
:line:(0xff)
```

Example 5 To return the log messages to their default format, enter the following command:

```
zSH> log option default on
time: date: level: address: log: taskname:  (0xf)
```

Example 6 The following example configures the log cache size:

```
zSH> log cache max 200
Maximum number of log messages that can be saved: 200
```

Example 7   following example searches through the log cache for the word "IMA":

```
zSH> log cache grep IMA
Searching for: "IMA"
[1]: JAN 06 20:36:10: alert  : 1/2/50  : alarm_mgr:
tLineAlarm: 01:02:02 Critical IMA Down Line
[2]: JAN 06 20:36:46: alert  : 1/2/50  : alarm_mgr:
tLineAlarm: 01:02:02 Critical IMA Up Line
```

Access Level   user

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also   syslog

log filter

Restrict the display of log messages to only the log messages for a specified entity.

Syntax   **log filter show | set (ifindex|port *slotport*|vcl *ifindex vpi vci*|subscriber *endpoint*)| delete**

Example 1
```
zSH> log filter set ifindex 12
New filter saved.
```

Example 2
```
zSH> log filter set port 5 24
New filter saved.
```

Example 3
```
zSH> log filter set vcl 100 0 1
New filter saved.
```

Example 4
```
zSH> log filter set subscriber 22
New filter saved.
```

Example 5
```
zSH> log filter show
Index   Type            Filter Parameters
------  -----------     ----------------------------
 1      Port            slot=1, port=1
 2      Port            slot=1, port=4
 3      IfIndex         IfIndex=12
 4      Port            slot=5, port=24
 5      ATM VCL  IfIndex=100, vpi=0, vci=1
 6      IfIndex         IfIndex=100
 7      IfIndex         IfIndex=104
 8      IfIndex         IfIndex=109
 9      IfIndex         IfIndex=103
10      IfIndex         IfIndex=107
```

Example 6   `zSH> log filter delete 10`

```
Log filter 10 deleted
```

logout

Terminates the current session. If a previous user is still connected as an inactive user of the current session, the previous user becomes the active user of the session. If there is only one user connected in current session, the logout command terminates the connection. If the session is over the local serial port, the current user is logged out and the system prompts appears.

Syntax `logout`

Example The following example shows logging out from a local serial port session:

```
zSH> logout
Connecting...........
Tips:(`lst' 2 list)(`find' 2 search)(`s' 2 skip)
User Name:
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

lst

Lists available commands.

Syntax `lst [ -m ]`

Options

With no option, displays all the available commands for the current user. If a search has been performed using the **find** command, and the **-m** option has not been specified since the search was performed, the **lst** command displays only the results of the most recent search.

-m
Lists all commands, not just the results of the previous search.

Example The following example shows the **lst** command with no search results:

```
zSH> lst
?                                adduser
ata                              bootstate
cd                               changepass
commit                           copy
create                           del
delete                           deleteuser
dir                              dump
eeset                            eeshow
featurebitdisplay                featurebitset
fhrameping                       file
filter                           find
find-matching-subvoice           get
help                             history
```

```
ifxlate                            image
initiateconfigsync                 interface
list                               load
log                                logout
lst                                mkdir
msg                                new
ping                               pollzhonecpe
pwd                                resetcliprov
resetpass                          restore
Type A<CR> to print all, <CR> to continue, Q<CR> to stop:
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also find

M

mcast

Displays multicast control lists.

Syntax `mcast show mcl [ entry | precedence ]`

Options *entry*

Entry number to be displayed.

all

Sends the message to all users.

Example
```
zSH> mcast show mcl 1
MCAST CONTROL LIST : 1
        224.10.10.10    224.10.10.11    224.10.10.12
224.10.10.13


zSH> mcast show mcl 2/1
MCAST CONTROL LIST : 2
192.24.84.144

zSH> mcast show mcl
MCAST ID        IP Address
^^^^^^^^^^^^^^^^^^^^^^^^^^^
1       192.24.2.10
2       192.24.84.144
```

Access Level user

Notes Entering this command without any options displays all configured multicast control lists.

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

mkdir

Creates a directory on the system card flash card file system.

Syntax `mkdir directoryname`

Access Level admin

Products BAN, MALC

See Also **rmdir**

msg

Enables users to send text messages to a specific user, or to all users currently logged into the system.

Syntax `msg [ username | all ]  message`

Options *username*
> The recipient of the message.

all
> Sends the message to all users.

message
> The text of the message to send. The message must be in quotes.

Example The following command:

```
zSH> msg all "please log off."
```

Results in the following message being sent to every user logged into the system:

```
Msg: root: please log off.
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

mtac-linetest (MTAC-Ring card)

Enables connecting a third-party device to the MALC MTAC card to set any line card port to the MTAC card test port. The default baud rate is 9600 bps but can be changed in the **rs232-profile**.

> **Note:** This command is only available through the MTAC card control port.

Syntax `mtac-linetest shelf/slot/port mode [ force ]`

Options *shelf/slot/port*
> The port address in shelf/slot/port format. Valid shelf value is 1. Maximum slot value is 21. Maximum port value is 48.

mode lookout [*InterfaceType*] release | bridge | lookin
> Sets the relay mode. Only lookout and release modes are currently supported. The optional **InterfaceType** specifies the type of interface for a lookout test. Lookout testing is supported for ADSL, DS1, SHDSL, ISDNU, VDSL, and voice FXS interfaces. With no **InterfaceType** specified, the relay is set for a POTS interface.
>
> The release mode sets the relay back to idle mode.

> ✓ **Note:** There is a 5 minute maximum time limit for activating a relay. If this time limit is reached, the relay automatically goes back to idle mode.

force
> Forces an override and sets the relay on the port even if the line is in use. This option applies only to POTS cards.

Example The following command:

```
zSH> mtac-linetest 1/8/48 lookout
     Successful - In TestMode

zSH> mtac-linetest 1/8/48 release
     Successful - Return to operational state
```

Access Level user

Products MALC

mtac-linetest (MTAC-ENH card)

Enables the MALC MTAC-ENH card to set any line card port to the MTAC card test port without connecting to a third-party device.

Syntax `mtac-linetest shelf/slot/port mode testID | linetype | force`

Options *shelf/slot/port*
> The port address in shelf/slot/port format. Valid shelf value is 1. Maximum slot value is 21. Maximum port value is 48.

mode [interfaceType] lookout | release | bridge | lookin
> Sets the relay mode. Only lookout and release modes are currently supported. The optional **InterfaceType** specifies the type of interface for a lookout test. Lookout testing is supported for ADSL, DS1, SHDSL, ISDNU, VDSL, and voice FXS interfaces. With no **InterfaceType** specified, the relay is set for a POTS interface.
>
> The release mode sets the relay back to idle mode.

> ✓ **Note:** There is a 5 minute maximum time limit for activating a relay. If this time limit is reached, the relay automatically goes back to idle mode.

testID
>   Specifies the type of test to be performed.

linetype
>   Optionally, specifies the POTS line type. Valid line types are adsl, ds1,
>   shdsl, isdn, vdsl, and voicefxs. Default is voicefxs.

force
>   Forces an override and sets the relay on the port even if the line is in use.
>   This option applies only to POTS cards.

Example

```
zSH> mtac-linetest 1/4/1 lookout dcloopresistance force
Successful - In TestMode
Time Started: 000 days 02:50:56:03
Time Ended:   000 days 02:50:57:71

DC loop resistance Test Results
        RLOOP=3885.349121 Ohms
        ILG1=0.000034 A
        ILG2=0.000077 A
        Voltage Saturation=Yes
        CMC Degradation=No
-------------------------------------------------------
Successful - Returned to operational state
zSH>
```

Access Level user

Products MALC

N

new

Creates new records of the specified profile type.

Syntax `new profile-type index`

Options *profile-type*
>   The type of profile to create.

index
>   An index for the record. Some records, such as line profiles, use an index
>   of the form **shelf-slot-port-subport-interface/type**. Other records, such
>   as subscriber records, use an index of the form **n**, where **n** is an integer.

Example The following example creates a new **ip-interface-record**. Pressing Enter
accepts the default values:

```
zSH> new ip-interface-record 1-1-0-0/ip
Please provide the following: [q]uit.
vpi: --------------->  {0}:
```

```
vci: --------------->  {0}:
rdindex: ----------->  {1}:
dhcp: -------------->  {none}:  ** read-only **
addr: -------------->  {0.0.0.0}: 192.168.8.21
netmask: ----------->  {0.0.0.0}: 255.255.255.0
bcastaddr: --------->  {0.0.0.0}: 192.168.8.0
destaddr: ---------->  {0.0.0.0}:
farendaddr: -------->  {0.0.0.0}:
mru: --------------->  {1500}:
reasmmaxsize: ------>  {0}:
ingressfiltername: ->  {}:
egressfiltername: -->  {}:
pointtopoint: ------>  {no}:
mcastenabled: ------>  {yes}:
ipfwdenabled: ------>  {yes}:
mcastfwdenabled: --->  {yes}:
natenabled: -------->  {no}:
bcastenabled: ------>  {yes}:
ingressfilterid: --->  {0}:
egressfilterid: ---->  {0}:
ipaddrdynamic: ----->  {static}:
dhcpserverenable: -->  {false}:
subnetgroup: ------->  {0}:
unnumberedindex: --->  {0}:
mcastcontrollist: -->  {}:
vlanid: ------------>  {0}:
maxVideoStreams: --->  {0}:
...................
Save new record? [s]ave, [c]hange or [q]uit: s
Record created.
```

After entering the values, the system displays the values you have entered and
prompts you to save the record. If you want to save the changes, press **s**. If
you want to make changes, press **c** to re-enter values. Press **q** to quit without
saving changes.

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor
100A, Z-Edge 64

See Also **delete**, **update**

P

ping

The ping command uses an ICMP ECHO_REQUEST datagram to elicit an
ICMP ECHO_RESPONSE from the specified host or network gateway. The
ping command can be interrupted by pressing any key during its operation.

Syntax `ping [-c rxcount] [-i txwait ] [ -s packetsize ]`
`[-w timeout] [-t] [-h]  host [-l] ip address`

Options **-c** *rxcount*

Stop after receiving *rxcount* ECHO_RESPONSE packets. If this option is not specified, ping will operate until interrupted by the user.

-i *txwait*

Wait *txwait* seconds between sending ECHO_REQUEST packets. The value of *txwait* must be a positive integer. If not specified, a value of 1 is used.

-s *packet-size*

Specifies the packet size of the ICMP ECHO_REQUEST. The default is 56 (which results in a 64 byte ICMP datagram when combined with an 8 byte ICMP header).

-t *timeout*

Specifies the timeout for the ping. The default is 1 second.

-t

Continue the ping until it is interrupted by the user.

-h

Display the hostname of the source for any returned ICMP packet instead of the network address.

host

Host name or IP address of destination host.

-l

Use source based routing to determine the interface to send ping out on.

Example 1 The following example shows the **ping** command able to successfully reach the destination:

```
zSH> ping ietf.org
PING ietf.org (132.151.1.19): 64 data bytes
!!!!!
----ietf.org PING Statistics----
5 packets transmitted, 5 packets received
round-trip (ms)  min/avg/max = 80/99/160
```

Example 2 The following example shows the **ping** command unable to reach the destination:

```
zSH> ping 192.168.211.2
PING 192.168.211.2: 64 data bytes
UUUUU
----192.168.211.2 PING Statistics----
5 packets transmitted, 0 packets received, 100% packet
loss
```

Example 3 `zSH> ping -l 10.10.203.2 10.10.203.1`
```
PING 10.10.203.1: 64 data bytes
!!!!!
----10.10.203.1 PING Statistics----
```

```
5 packets transmitted, 5 packets received
round-trip (ms)  min/avg/max = 10/10/10
zSH>
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **Telnet**, **traceroute**

pollzhonecpe

The **pollzhonecpe** command polls attached Zhone customer premises equipment (CPE) devices to determine their status.

Syntax `pollzhonecpe`

Example
```
zSH> pollzhonecpe
Polling all connected Zhone CPE devices...
Zhone CPE at vrd:0 ip:192.16.199.205 status:UP
Total Zhone CPE devices: 1 (1 up) (0 down)
```

Access Level admin

Notes If the device detects that a CPE is down, it sends a trap to ZMS (if configured to do so). If a ZMS is not connected or its connection is inactive, the device does not send a trap.

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **showzhonecpe**

powermon

Displays the power monitoring status for the ZRG. Command output strings are:

- No battery
- No UPS
- Low Charge
- Bad Battery
- Normal Power

Output strings can appear individually or in combination.

Syntax `powermon`

Example

```
zSH> powermon
Power Status:   (Normal power)

zSH> powermon
```

```
                        Power Status:    (No Battery)

            zSH> powermon
            Power Status:    (On battery)

            zSH> powermon
            Power Status:    (On battery) (Low Charge)
```

Access Level   admin

Products   ZRG

See Also   **alarm show**, **pwd**

pwd

Displays the current directory on the system flash card file system.

Syntax   **pwd**

Example   ```
zSH> pwd
zSH> /card1
```

**Access Level**   admin

**Products**   BAN, MALC, Raptor

**See Also**   **cd**, **dir**

# R

## resetcliprov

Enables provisioning from a CLI session. Provisioning using the CLI is usually enabled, except when the device is being managed by ZMS.

**Syntax**   `resetcliprov [ index | all ]`

**Options**   *index*

Re-enables CLI provisioning for the specified CLI session. CLI session indexes are displayed in the output of the **who** command.

**all**

Re-enables CLI provisioning for all active CLI sessions.

**Access Level**   admin

**Notes**   CLI provisioning is automatically disabled after logging out of the session.

**Products**   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

**See Also**   **setcliprov**

## resethold

The **resethold** command puts a card into a persistent non-operational state. The physical card, card profiles and provisioning are retained.

**Syntax** `resethold shelf slot-list, [slot-range]`

**Options** **shelf**
Specifies the shelf containing the card(s).

**slot-list**
List the slots of the cards to be reset to hold status.

*slot-range*
Optionally, specifies a range of slots of the cards to be reset to hold status.

**Access Level** useradmin

**Products** MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

**See Also** **resetrelease**

## resetpass

Resets a user password.

**Syntax** `resetpass username`

**Options** *username*
User whose password is being reset.

**Example** In the following example, the user jjsmith is assigned a new password (newpassword):

```
zSH> resetpass jjsmith
Password: newpassword the password is not displayed on the screen
```

Access Level useradmin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **changepass**

resetrelease

Release a card from hold status, after the **resethold** command was used.

Syntax `resetrelease shelf slot`

Options **shelf**
Specifies the shelf containing the card to be released.

slot
Specifies the slots of the card to be resleased.

Access Level useradmin

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **resethold**

restore

Restores a previously saved Zhone system configuration.

Syntax `restore [console] | [ network host filename ] | [ file filename ] | [validate filename]`

Options **console**
Restores the configuration displayed on the local console terminal. Note that when restoring a file from the console, specify a line an character delay to allow the system to interpret the command. A delay of 40 milliseconds is usually sufficient.

network *host filename*
Restores the configuration from the specified host and filename using TFTP. This option is not supported on the BAN or the MALC.

file *filename*
Restores the configuration from specified file on the flash card. You must specify the full path to the file. This option is only available on the BAN and the MALC.

validate *filename*
Parses the specified restore file to check for syntax errors. When an error is encountered, it prints out error information including line number of the error. This command does not write any information to the database.

Example `restore validate /card1/onreboot/restore`

Access Level useradmin

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **dump**

rip

Administers how routing information protocol (RIP) operates on Zhone devices.

Syntax The following command enables or disables RIP for the entire system.

`rip [domain domain-spec] enable|disable`

domain *domain-spec*
Specifies the routing domain. Only domain 1 is supported.

enable
Enables RIP.

disable
Disables RIP (the default).

Syntax The following command displays the administrative and operational status of RIP.

```
rip domain domain-spec show
```

domain *domain-spec*
>   The domain spec identifies the IP address range of the subnet. One (1) is the only supported value.

show
>   Displays RIP information for the system.

Syntax The following command specifies the interval between RIP advertisements.

```
rip domain domain-spec timer seconds
```

domain *domain-spec*
>   Specifies the routing domain. Only domain 1 is supported.

timer *seconds*
>   The RIP advertisement in seconds. The default is 30 seconds.

Syntax The following command specifies the type of advertisements to transmit on an interface.

```
rip [domain domain-spec] interface interface-address talk
v1 | v1compat | v2 | disabled
```

domain *domain-spec*
>   Specifies the routing domain. Only domain 1 is supported.

interface *interface-address*
>   Interface address to transmit RIP advertisements on.

talk v1 | v2 | v1v2 | disabled
>   The type of RIP packets to transmit:
>   - v1: RIP version 1 advertisements
>   - v1v2: RIP version 2 advertisements using RFC 1058 subsumption rules
>   - v2: RIP version 2 advertisements
>   - disabled: RIP advertisements disabled (default)

Syntax The following command specifies the type of interface to receive on an interface.

```
rip [domain domain-spec] interface interface-address
listen  v1 | v1v2 | v2 | disable
```

domain *domain-spec*
>   Specifies the routing domain. Only domain 1 is supported.

interface *interface-address*
>   Interface address to receive RIP advertisements on.

listen v1 | v2 | v1v2 | disabled
>   The type of RIP packets to receive:
>   - v1: RIP version 1 advertisements

- v1v2: RIP version 1 and version 2 advertisements
- v2: RIP version 2 advertisements
- disabled: RIP advertisements disabled (the default)

Syntax The following command specifies whether poison-reverse updates are transmitted on an interface.

```
rip [domain domain-spec] interface interface-address
poison  on | off
```

domain *domain-spec*
Specifies the routing domain. Only domain 1 is supported.

interface *interface-address*
Interface address to transmit poison-reverse RIP advertisements on.

poison on | off
On enables poison reverse updates.

Off disables poison reverse updates. In this case, the system uses split-horizon updates. The default is off.

Syntax The following command specifies the default metric value to be advertised for an interface.

```
rip [domain domain-spec]  interface interface-address
metric metric-number
```

domain *domain-spec*
Specifies the routing domain. Only domain 1 is supported.

interface *interface-address*
Interface address to assign a metric to.

metric *metric-number*
Metric number for an interface.

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Z-Edge 64

See Also **route**

rmdir

Removes a directory.

Syntax **rmdir directory**

Options **directory**
Name of directory to remove.

Access Level admin

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723

See Also **cd**, **dir**, **mkdir**, **pwd**

romversion

Displays the read-only memory (ROM) version of a slot card.

Syntax `romversion 1-17`

Example 1 The following example displays the ROM version of an Ethernet card in slot 17:

Example 2
```
zSH> romversion 4
MALC CAN 1.10.0.6
Jun 21 2004, 13:11:49
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **swversion**

route

Administers the routing information base (RIB). The **route add** and **route delete** commands take a keyword called **source** which indicates that a source route is used and must to added or removed from the source routing table. The user must also specify the IP interfaces of the next hop.The **route show** command now accepts an optional keyword of either **source** or **destination** which specifies the type of routing table is to be displayed. If the keyword is not used, both source and destination routing tables are displayed.

Syntax The following command displays the forwarding information base.

```
route [domain domain-spec] [list] show
[source|destination]
```

domain *domain-spec*
   Specifies the routing domain. Only domain 1 is supported.

list
   Displays all provisioned static routes.

show
   Displays the routes in the route domain for source and destination routing.

Syntax The following command adds a high-preference static route for the destination IP address with the specified network mask (dotted decimal format) to the specified next hop with the specified routing cost. The word 'default' may be substituded for a 0.0.0.0 destination and mask. If a 'fallback' route is also specified, a second next hop, ping interval (in milliseconds), and ping maximum failure count must be specified.

Fallback routes have the same destination and mask as the original route, but use a different next hop. After a route and fallback route are configured, the current next hop is pinged once every ping interval. If the number of ping

maximum failures is exceeded, the fallback next hop becomes the current next hop. The next hop validation continues once every ping interval.

```
route [ domain domain-spec ] add [source]
destination-address netmask nexthop-address
nexthop-interface metric [fallback nexthop2 ping-interval
ping-fail-max]
```

domain *domain-spec*
> Specifies the routing domain. Only domain 1 is supported.

source
> Indicates that a source address based route is being added. The *interface* is the name of the outbound (egress) interface for this route (minus the /ip suffix).

destination-address netmask
> Adds a static route with the specified destination and network mask.

nexthop-address
> IP address of the next hop.

nexthop-interface
> Interface for the next hop. This is valid only when the next-hop address is 0.0.0.0. Otherwise, this should be 0 (zero). This option is currently unsupported.

metric
> A numeric value specifying the metric for the route. Lower metrics indicate more preferred routes.

nexthop2
> IP address of the fallback or redundantnext hop.

ping-interval
> The ping interval with a minimum of 500 milliseconds to a maximum of 60000 milliseconds (1 minute).

ping-fail-max
> The minimum retry count is 2 and maximum retry count is 10.

maxretry
> The max retry (fail) count for the pings. When this limit is reached, the fallback nexthop is used.

Syntax The following command deletes a static route from the system routing table. The word 'default' may be substituded for a 0.0.0.0 destination and mask. The fallback and nexthop2 options must be specified to delete routes configured with fallback routes.

```
route [ domain domain-spec ] delete [source]
destination-address netmask nexthop-address
nexthop-interface [fallback nexthop2 ping-interval
ping-fail-max]
```

domain *domain-spec*
> Specifies the routing domain. Only domain 1 is supported.

source
> Specifies that a source address based route is being removed. The interface is the name of the outbound (egress) interface for this route (without the /ip suffix).

destination-address netmask
> Deletes the destination address and netmask from the routing table.

nexthop-address
> IP address of the next hop address.

nexthop-interface
> Interface for the next hop. This is valid only when the next-hop address is 0.0.0.0. Otherwise, this should be 0 (zero). This option is currently unsupported.

nexthop2
> IP address of the fallback or redundantnext hop.

ping-interval
> The ping interval with a minimum of 500 milliseconds to a maximum of 60000 milliseconds (1 minute).

ping-fail-max
> The minimum retry count is 2 and maximum retry count is 10.

maxretry
> The max retry (fail) count for the pings. When this limit is reached, the fallback nexthop is used.

Example

```
zSH> route show
Source Routing Table
Dest                     Nexthop          Cost      Owner       Interface
-------------------------------------------------------------------------
10.10.201.2/32           10.10.201.1      1         STATIC      1/1/1/0/ip
10.10.204.2/32           10.10.204.1      1         STATIC      1/1/1/0/ip
Destination Routing Table
Dest                     Nexthop          Cost      Owner
-----------------------------------------------------------------
0.0.0.0/0                172.24.94.254    1         STATICLOW
10.10.201.2/32           1/1/1/0/ip       1         LOCAL
10.10.204.0/30           1/1/1/0/ip       1         LOCAL
172.24.94.0/24           1/1/1/0/ip       1         LOCAL
172.16.80.0/24           172.24.94.254    1         STATIC

zSH> route show source
Source Routing Table
Dest                     Nexthop          Cost      Owner       Interface
-------------------------------------------------------------------------
10.10.201.2/32           10.10.201.1      1         STATIC      1/1/1/0/ip
10.10.204.2/32           10.10.204.1      1         STATIC      1/1/1/0/ip

zSH> route show destination
Destination Routing Table
```

```
  Dest                      Nexthop         Cost    Owner
  ------------------------------------------------------------
  0.0.0.0/0                 172.24.94.254   1       STATICLOW
  10.10.201.2/32            1/1/1/0/ip      1       LOCAL
  10.10.204.0/30            1/1/1/0/ip      1       LOCAL
  172.24.94.0/24            1/1/1/0/ip      1       LOCAL
  172.16.80.0/24            172.24.94.254   1       STATIC
  zSH>

  zSH> route add source 198.168.1.1 255.255.255.255 198.168.1.101 1 uplink1-0-36

  zSH> route add default 192.168.34.254 1 fallback 192.168.34.201 2000 3

  zSH> route add 10.10.1.0 255.255.255.0 192.168.34.254 1 fallback
  192.168.34.201 3000 5

  zSH> show route ...
  Source Routing Table

  Dest                      Nexthop         Cost    Owner     Interface
  ----------------------------------------------------------------------

  Destination Routing Table

  Dest                      Nexthop         Cost    Owner     Fallback

  ----------------------------------------------------------------------
  0.0.0.0/0                 192.168.34.254  1       STATICLOW
  10.10.1.0/24              192.168.34.254  1       STATIC    192.168.34.201
  192.168.34.0/24           1/1/1/0/ip      1       LOCAL

  zSH> route delete source 198.168.1.1 255.255.255.255 198.168.1.101
  uplink1-0-36
  zSH>

  zSH> route delete 10.10.1.0 255.255.255.0 192.168.34.254 fallback \
  192.168.34.201
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **rip**

rpr

Displays information about the resilient packet ring (RPR) configuration. This command is available only when an GigE uplink card with RPR support is installed.

Syntax `rpr show topo | stats | config | status`

Options **topo**

Displays the RPR topology.

stats [clear | noclr]

Displays RPR statistics. The optional argument **clear** will clear the statistics. The **noclr** argument (the default) will not clear the statistics.

config

Displays the current RPR configuration.

status

Displays the status of the nodes in the RPR ring.

Example 1 This example shows a closed ring (no broken spans).

```
zSH> rpr show topo
total number of ring nodes= 4 (ringlet 0= 3, ringlet 1= 3)
ring protection= STEERING, ring topology= CLOSED ring
V=valid; R=reachable; E=ringlet edge states; PSW/PSE=protect state; prot/pref=raw
values
hop ----macAddr_0---- VR EE PSW PSE prot pref ----macAddr_1-- VR EE PSW PSE prot/pref
0 00:01:47:5c:34:59 tt ff IDL IDL 0x00 0x0d
1 00:01:47:59:1f:ea tt ff IDL IDL 0x00 0x04 00:01:47:59:1f:f3 tt ff IDL IDL 0x00 0x0c
2 00:01:47:5d:b0:f1 tt ff IDL IDL 0x00 0x0a 00:01:47:5d:b0:f1 tt ff IDL IDL 0x00 0x0a
3 00:01:47:59:1f:f3 tt ff IDL IDL 0x00 0x0c 00:01:47:59:1f:ea tt ff IDL IDL 0x00 0x04
4 00:01:47:5c:34:59 tt ff IDL IDL 0x00 0x0d 00:01:47:5c:34:59 tt ff IDL IDL 0x00 0x0d
```

The output of the **rpr show topo** command displays the information for each ringlet (*MacAddress_0* for ringlet 0; and *MacAddress_1* for ringlet 1). The fields are described in the table below.

Field	Description
total number of ring nodes	The total number of nodes on the ring. On an unbroken ring, the number of nodes on each ringlet will be equal.
ring protection	Type of ring protection. This is configured in the **wrap-config** parameter in the **rpr-config** profile. Values: **steering** **wrapped**
ring topology	Whether the ring is closed (no broken spans and traffic can be sent on either ring) or open (at least one broken span is detected).
hops	Number of hops upstream this node is. The current node is always displayed with a hop count of 0.
MacAddress_x	The MAC address of the node on ringlet *X*.
V	Valid. **t** indicates the entry is valid, **f** indicates not valid.
R	Reachable. **t** indicates the entry is valid, **f** indicates not valid. **f** indicates the span is broken between node and its immediate downstream neighbor.

Field	Description
E	Ringlet edge state on the west and east span. An edge indicates the span is broken. **t** indicates an edge exists, **f** indicates an edge does not exist.
PSW/PSE	The protection state on the west (PSW) and east (PSE) span.
	Values:
	IDL: Signal OK. Link is up with neighbor.
	WTR: Wait-to-restore. The span has recovered from a fault but it's been configured to wait a period of time before declaring it's OK to other nodes on the ring. The wait-to-restore time is configured in the **protection-wtr** parameter in the **rpr-config** profile.
	MS: User has requested the span to deactivate. Not supported.
	SD: Signal degraded. Not supported.
	SF: Signal failure. Link is down with neighbor.
	FS: User has forced span to deactivate. Not supported.
prot/pref	Raw values used by the system to display edge and protection information.

Example 2   This example shows that east span is broken on the current node:

```
zSH> rpr show topo
total number of ring nodes= 3 (ringlet 0= 2, ringlet 1= 0)
ring protection= STEERING, ring topology= OPEN ring
V=valid; R=reachable; E=ringlet edge states; PSW/PSE=protect state; prot/pref=raw
values
hop ----macAddr_0---- VR EE PSW PSE prot pref ----macAddr_1--- VR EE PSW PSE prot/pref
  0 00:01:47:5a:aa:1a tt ft IDL  SF 0x44 0x09
  1 00:01:47:5a:aa:22 tt ff IDL IDL 0x00 0x05
  2 00:01:47:5a:aa:2a tt tf  SF IDL 0xa0 0x06
```

Notice the PSE (protection span east) for the current node (hop 0) is SF (signal failure) and its neighbor across the broken span (hop 2) agrees since its PSW (protection state west) is also SF.

Example 3   This example shows that span is broken between the other 2 nodes in the ring:

```
zSH> rpr show topo
 total number of ring nodes= 3 (ringlet 0= 1, ringlet 1= 1)
ring protection= STEERING, ring topology= OPEN ring
V=valid;R=reachable;E=ringlet edge states;PSW/PSE=protect state; prot/pref=raw values
hop ----macAddr_0-- VR EE PSW PSE prot pref ----macAddr_1-----VR EE PSW PSE prot/ pref
0 00:01:47:5a:aa:1a tt ff IDL IDL 0x00 0x0d
1 00:01:47:5a:aa:22 tt tf  SF IDL 0xa0 0x06 00:01:47:5a:aa:2a tt ft IDL  SF 0x44 0x09
```

Notice the PSW (protection span west) and the PSE (protection span east) for the current node is IDL (link up), but that the PSW for the upstream node

(hop 1) is SF (signal failure) and its neighbor agrees since its PSE (protection state east) is also SF.

Access Level   user

Products   MALC, Raptor

S

sar8260

The **sar8260** command shows operational and status information about the Sechtor 100A ATM 8260 driver. This command can be used only after the ATM driver is added to the system log list.

For more information about system logging, see the **log show**, **log level** and **showtask** command descriptions.

> **Note:** The Sechtor 100A can only perform **sar8260 ping** when connected to IADs that support OAM F5 loopbacks.

Syntax   `sar8260`

startLog

This option entered after the **sar8260** command will enable log messages. Once enabled, the log level can be set with the **log level** command.

stopLog

This option used with the **sar8260** command will disable log messages.

Syntax   `log level sar8260 log level`

sar8260

Use **sar8260** as a modifier with the **log level** command to set the level of logging for the Sechtor 100A ATM driver. Log level NOTICE will log AAL2 control packets. Log level INFO will log AAL2 voice packet headers. Log level DEBUG will log AAL2 voice packet payloads.See the example, below.

Syntax   `sar8260`

stats

This level of ATM driver logging shows high-level information about the Sechtor 100A ATM driver.

stats *vpi vci*

Using the VPI and VCI address with the sar8260 command displays statistics only for the Virtual Circuit (VC) with this address.

stats *vpi vci cid*

Using the sar8260 command with the VPI VCI and CID numbers gives information about the ATM driver at the CID level.

Syntax `sar8260 ping vpi vci`

vpi
    VPI to ping.

vci
    VCI to ping.

Example 1 This is an example of a sar8260 ping:

```
zSH> sar8260 ping 0 501
Pinging vpi 0, vci 501 ..
zSH> Ping response received from vpi 0, vci 501
```

Example 2 This example shows the **sar8260** command with the **startLog** option.

```
zSH> sar8260 startLog
```

Example 3 This example shows the log level options.

```
zSH> log level
Usage: log level < module > < emergency    | 1 >
                            < alert        | 2 >
                            < critical     | 3 >
                            < error        | 4 >
                            < warning      | 5 >
                            < notice       | 6 >
                            < information  | 7 >
                            < debug        | 8 >
```

Example 4 The following example sets the **log level** for the 8260 ATM driver at the **notice** level

```
zSH> log level sar8260 notice
Module: sar8260 at level: notice
```

Example 5 This example shows the result of using the **stats** modifier with the **sar8260** command. The system displays the highest level of information available about the 8260 ATM driver.

```
zSH> sar8260 stats
MPC8260 mask 17, AAL2 microcode rev 26

ATM Driver Statistics

Open VCs...... 59
CPS Tx........ 0          CPS Rx........ 0
SAR Tx........ 0          SAR Rx........ 11313
OAM Tx........ 0          OAM Rx........ 0
Faults........ 0
Inv. Lookup... 0          Inv. Vc....... 0
rxInt......... 11626      txInt......... 46164
swErrCount.... 0          swWarnCount... 0
```

```
totSeqErr.... 0

ATM AAL2 Statistics

Open VCs........... 59          Open CIDs.......... 314
Active Calls....... 0           Cumulative Calls... 0
Voice Tx........... 0           Voice Rx........... 0
CAS Tx............. 33033       CAS Rx............. 0
Alarm Tx........... 0           Alarm Rx........... 0
I3661 Tx........... 13136       I3661 Rx........... 11130
3661 Chains........ 7825
Unsupported Rx..... 0          Errors............. 13
RP state errors.... 0          RP CFs............. 0
Critical Timeouts.. 0          TxVoiceDrop.........0
```

Example 6   This example shows the statistics displayed when a VPI of 0 (zero) and a VCI of 501 are used as arguments.

```
zSH> sar8260 stats 0 501
ATM Driver VC Statistics
VPI..... 0             VCI....... 501
CC...... 258           PCR....... 182
DelyPcr. 182           pcrTick... 0
Tx...... 9112780       Tx Err.... 0
CPS Rx.. 9103499       SAR Rx.... 1769          Rx Errs.. 0
CPS Errs 1
RxPAR... 0             RxSEQ..... 1             RxOSF.... 0
RxHEC... 0             RxLEN..... 0             RxBusy... 0
RxOVL... 0             RxSPL..... 0
SAR Errs 10
RxRTE... 0             RxSDU..... 0             RxOS..... 0
RxLast.. 1769          RxNotL.... 0
noBuf... 0             badLength. 0
OAM State: ENABLED
Tx OAM.. 10775         Rx OAM.... 299           Faults... 4
ATM AAL2 VC Statistics
Open CIDs.......... 13          Pending Events..... 0
Active Calls....... 0           Cumulative Calls... 5
Voice Tx........... 9111039     Voice Rx........... 9103499
Voice Tx Errors.... 0           Voice Rx Errors.... 0
CAS Tx Requests.... 0           CAS Rx Delivered... 0
CAS Tx Redundant... 0           CAS Rx Redundant... 0
CAS Tx Refresh..... 0           CAS Rx Refresh..... 0
CAS Tx Errors...... 0           CAS Rx Errors...... 0
Alarm Tx........... 0           Alarm Rx........... 0
Alarm Tx Errors.... 0           Alarm Rx Errors.... 0
I3661 Tx........... 1741        I3661 Rx........... 1769
I3661 Tx Errors.... 0           I3661 Rx Errors.... (n/a)
Type 3 CRC Errors.. 0           OOS Conditions..... 0
IllegalUUI......... 0           IllegalCID......... 0
```

The **OAM State** field in the response details the status of VCL fault detection. Possible values for the **OAM State** field include:

- **ENABLED:** VCL fault detection is enabled. CPE responded to the loopback. There is no fault on the VCL.

- **ENABLED DIAG LOOP FAULT**: VCL fault detection is enabled. No response to the loopback. There is a fault on the VCL.

- **ENABLED AIS FAULT**: VCL fault detection is enabled. BAN is receiving AIS cells indicating a fault on the VCL going toward the downstream endpoint.

- **ENABLED RDI FAULT**: VCL fault detection is enabled. BAN is receiving RDI cells indicating a fault on the VCL coming from the remote endpoint of the VCL.

- **DISABLED:** VCL fault detection is disabled.

Example 7   Using the **sar8260** command with the VPI, VCI, and CID numbers gives information about the ATM interface at the CID level.

```
zSH> sar8260 stats 0 201 16

ATM AAL2 CID Statistics [VPI 0 VCI 201 CID 16]

Channel Type....... POTS        Status............. OK
Active............. 0           Cumulative Calls... 0
Voice Tx........... 0           Voice Rx........... 0
Voice Tx Errors.... 0           Voice Rx Errors.... 0
CAS Tx Requests.... 1           CAS Rx Delivered... 0
CAS Tx Refresh..... 115         CAS Rx Refresh..... 0
CAS Tx Redundant... 3           CAS Rx Redundant... 0
CAS Tx Errors...... 0           CAS Rx Errors...... 0
Alarm Tx........... 0           Alarm Rx........... 0
Alarm Tx Errors.... 0           Alarm Rx Errors.... 0
Type 3 CRC Errors.. 0
```

Example 8   Issue the **sar8260** command with the **dchannelcids** option to view CIDs allocated for ISDN D channels by ELCP. The command syntax is **sar8260 dchannelcids** *vpi vci*.

```
zSH> sar8260 dchannelcids 0 40
128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147
148 149 150 151 152 153 154 155 156 157 158 159
```

Products   Sechtor 100A

selftest

Runs diagnostics on the device.

⚠️ **Caution:** Running a diagnostics test can interrupt traffic on the card.

Syntax `selftest get index repetition type`

> *index*
>> The user-defined index number of the test to run.

> *repetition*
>> Number of times to repeat the test.

> *type*
>> Type of test to run. The possible tests are:

Table 8: Supported diagnostics

Test	Devices supported
Back Plane Test verifies the card can access the back plane by verifying the back plane EEPROM checksum.	All cards except MTAC cards
Card EEPROM Test verifies the main card EEPROM checksum.	All
Daughter 1 card EEPROM Test verifies the daughter 1 card is present by verifying the daughter 1 card EEPROM checksum.	MALC ADSL-24 card MALC and Raptor ADSL-32 cards MALC and Raptor ADSL-32 + splitter cards MALC ADSL+POTS 24 card MALC and Raptor G.SHDSL card MALC POTS-24 card MALC and Raptor Uplink cards
Daughter 2 card EEPROM Test verifies the daughter 2 card is present by verifying the daughter 2 card EEPROM checksum.	MALC ADSL-24 card MALC and Raptor ADSL-32 cards MALC and Raptor ADSL-32 + splitter cards MALC ADSL+POTS 24 card
Fan Tray Test verifies the fan tray is operational by verifying the fan tray EEPROM checks	BAN Infoservices cards MALC and Raptor Uplink cards
Fhrame Bus Test verifies the card can access the fhrame bus by executing a loopback test.	All cards except MALC and Raptor G.SHDSL card
Flash Test verifies the card can access the PCMCIA flash card I/O by creating, writing, and reading a 4000-byte file.	BAN Infoservices cards MALC and Raptor Uplink cards
I/O Card Test verifies the I/O card is present by verifying the I/O card EEPROM checksum.	BAN ADSL 24 card MALC and Raptor ADSL-32 cards MALC and Raptor ADSL-32 + splitter cards BAN ATM AAL2/5 T3 card BAN ATM AAL5 OC3-c/STM1 card BAN ATM AAL5 T3 card BAN SDSL/G.SHDSL cards BAN T3/E3 cards

Table 8: Supported diagnostics (Continued)

Test	Devices supported
Mezzanine Card Test verifies the mezzanine card is operational by verifying the mezzanine card EEPROM checksum.	BAN SDSL/G.SHDSL cards BAN T3/E3 cards BAN ATM AAL5 OC3-c/STM1 card BAN ATM AAL5 T3 card BAN ADSL 24 card
Mid Plane Test verifies the mid plane card is present by verifying the mid plane EEPROM checksum.	BAN ATM AAL2/5 T3 card BAN Ethernet 10/100 card BAN Infoservices cards BAN SDSL/G.SHDSL cards
Real Time Clock Test verifies the real time clock increments.	BAN Infoservices cards MALC and Raptor Uplink cards
Self Test executes all individual tests.	All
Shelf Lamp Test illuminates the shelf alarm indicators for 1.5 seconds. Once the diagnostic completes, the indicators return to their original settings.	BAN Infoservices cards MALC and Raptor Uplink cards
Shelf Monitor Test verifies the shelf monitor board is operational by checking the POST status register and verifying the shelf monitor board EEPROM checksum.	BAN Infoservices cards MALC and Raptor Uplink cards
Supervisory Bus Test verifies the card can access the supervisory bus by executing a loopback test.	BAN Infoservices cards MALC and Raptor Uplink cards

Syntax `selftest start` *`index repetition type`*

start
>   Starts the specified test.

Syntax `selftest stop` *`index repetition type`*

stop
>   Stops the specified test.

Syntax `selftest del` *`index repetition type`*

del
>   Deletes the specified test.

Syntax `selftest list`

list
>   Lists test results.

Example 1   To display the tests on a MALC:

```
zSH> selftest list
```

```
    Name     Id  FuncPtr    Record   Time  Status       Details
-------------------------------------------------------------
    Flash-1   5 0x075760 0x2f8fae8    30       PASS Flash:1 shelf:1 slot:1
  Shelf Mon   9 0x180bdc 0x2a54070    15       PASS Shelf:1 slot:1.
  Supv Lpbk   2 0x1807e4 0x2b24000    15     PASS Wr:0x5aa5 rd:0x00a5 shelf:1 sl
  Fan Tray    8 0x1809dc 0x2b24090    15       PASS FANTRAY EEPROM checksum shelf:
  Lamp Test   6 0x1805e0 0x27f7700    10       PASS Shelf:1 slot:1.
Card EEprom   3 0x226cd4 0x27f7670     5     PASS CARD EEPROM checksum slot:1.
 Daughter-1  13 0x226cd4 0x2b42f20     5       PASS 1DAUGHTER EEPROM checksum slot
 Back Plane  12 0x226cd4 0x27f75e0     5       PASS BACKPLANE EEPROM checksum slot
   RT Clock   7 0x226cd4 0x27ef590     5      PASS RTC POST slot:1
      List memory allocated: 972 bytes.
```

Example 2   To display the tests on a BAN:

```
zSH> selftest list
     Name     Id  FuncPtr    Record   Time  Status        Details
-----------------------------------------------------------        Flash-1   5
0x212118 0x7dcfad0    30       PASS Flash:1 shelf:1 slot:3
    Flash-2   5 0x21229c 0x7dcfa40    30       FAIL Flash:2 card absent.
  Shelf Mon   9 0x22d8f8 0x7b92350    15       PASS Shelf:1 slot:3.
  Supv Lpbk   2 0x22d4cc 0x7babb80    15       PASS Wr:0x5aa5 rd:0x00a5 shelf:1 sl
  Fan Tray    8 0x22d6dc 0x7bac5f0    15       PASS FANTRAY EEPROM checksum shelf:
  Lamp Test   6 0x22d2b0 0x7bac090    10       PASS Shelf:1 slot:3.
    frbus-1   4 0x2a1a70 0x7b14d70    30       PASS Fhramelpbk> shelf:1 slot:3 frb
    frbus-2   4 0x2a1a70 0x7b1dba0    30       PASS Fhramelpbk> shelf:1 slot:3 frb
    frbus-3   4 0x2a1a70 0x7b14980    30       PASS Fhramelpbk> shelf:1 slot:3 frb
Card EEprom   3 0x358170 0x7b1dcc0     5      PASS CARD EEPROM checksum slot:3.
  Mid-Plane  13 0x358170 0x7b04030     5       FAIL MIDPLANE EEPROM checksum slot:
   RT Clock   7 0x358170 0x7b12b30     5       PASS RTC POST slot:3
 Back Plane  12 0x358170 0x7b040c0     5       PASS BACKPLANE EEPROM checksum slot
      List memory allocated: 1404 bytes.
```

Example 3   To start all the tests and run them one time (this example is from a MALC):

```
zSH> selftest start 1 1 1
```

Use the **list** option to view the results of the test:

```
zSH> selftest list
     Name     Id  FuncPtr    Record   Time  Status        Details
-------------------------------------------------------------
    Flash-1   5 0x075760 0x2f8fae8    30       PASS Flash:1 shelf:1 slot:1
  Shelf Mon   9 0x180bdc 0x2a54070    15       PASS Shelf:1 slot:1.
  Supv Lpbk   2 0x1807e4 0x2b24000    15       PASS Wr:0x5aa5 rd:0x00a5 shelf:1 sl
  Fan Tray    8 0x1809dc 0x2b24090    15       PASS FANTRAY EEPROM checksum shelf:
  Lamp Test   6 0x1805e0 0x27f7700    10       PASS Shelf:1 slot:1.
Card EEprom   3 0x226cd4 0x27f7670     5       PASS CARD EEPROM checksum slot:1.
 Daughter-1  13 0x226cd4 0x2b42f20     5       PASS 1DAUGHTER EEPROM checksum slot
 Back Plane  12 0x226cd4 0x27f75e0     5       PASS BACKPLANE EEPROM checksum slot
   RT Clock   7 0x226cd4 0x27ef590     5       PASS RTC POST slot:1
      List memory allocated: 972 bytes.
```

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

selt

The MALC supports the SELT commands for Single-End Loop Tests.

Syntax   **selt start *interface***

           selt abort *interface*

           selt clear *interface*

           selt set units awg | metric | japan

           selt set max-duration *interface num-seconds*

           selt show status *interface*

           selt show noise *interface* [*start-index* [*num-vals*]]

           selt set gauge *interface wire-gauge*

           selt set cable *interface cable-type*

interface
> The *interface* can be in the form of ifIndex (432), name/type (1-4-1-0/adsl) or shelf/slot/port/subport/type (1/4/1/0/adsl0).

num-seconds
> The maximum amount of time, in seconds, that a SELT test is allowed to run on an ADSL interface. If a selt test runs for more than <num-seconds> it will be aborted. Setting max-duration to zero disables SELT timeout on an interface. Note that, in order to get valid results, a SELT test must be allowed to run to completion, and this may take several minutes, depending on the speed of the processor used to do the computation.

start-index
> (0..511) is the tone index with which to start. 0 is 4.3125 kHz, 1 is 8.625 kHz, up to 511 which is 2208.0000 kHz. The noise command displays the loop noise floor results of a selt test. There is one noise measurement per ADSL tone. Each noise value has units of dBm/Hz.

num-val
> The number of tones to display.

wire-guage
> Sets the expected diameter of the wire connected to an interface. The diameter may be set using any units, regardless of the display units set with the **selt set units** command. The wire-gauge option must use one of these settings:
> - unknown - unknown wire gauge
> - awg19 - 19 gauge
> - awg22 - 22 gauge
> - awg24 - 24 gauge
> - awg26 - 26 gauge
> - 32mm - 0.32 millimeters

- 40mm - 0.40 millimeters
- 50mm - 0.50 millimeters
- 63mm - 0.63 millimeters
- 65mm - 0.65 millimeters
- 90mm - 0.90 millimeters

The chip used to implement the selt test may restrict which values can be configured. The Conexant-g24 chip accepts these settings:

- awg24
- awg26
- 40mm (as an alias for awg26)
- 50mm (as an alias for awg24)

cable-type

Sets the type of cable being tested, real or simulated. The *real* setting indicates that an actual physical cable is connected to the interface. In a lab or test environment , the cable may be simulated and use the *dsl90* or *dsl400* setting.

- real: indicates a physical cable is connected to the interface.
- dsl90: a Consultronics/Spirent DLS90 is simulating the cable.
- dsl400: a Consultronics/Spirent DLS400 is simulating the cable.

Notes Note that it may take some time (perhaps as much as a minute) for the SELT test to abort.

set

This command is used only by the configuration restore process.

Syntax `N/A`

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

set2default

Erases the system configuration and restores the factory default settings.

> ⚠️ **Caution:** This command erases your system configuration, reboots the system, and causes all connections and subscriber traffic to drop.

> ☑️ **Note:** This command is not available on standby uplink cards in a protection group

Syntax `set2default`

Example

```
175.5> set2default
Ok to reset to default (system will reboot) ? [yes] or [no]: yes
```

```
Do you want to exit from this request? (yes or no) [yes] no
Are you sure? (yes or no) [no] yes
```

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **systemreboot**

setcliprov

Enables or disables provisioning from a CLI session. If CLI provisioning cannot be re-enabled using this command, use the **resetcliprov** command.

Syntax **setcliprov [enable | disable] [index | all] [-d]**

Options **enable | disable**
Enables or disables provisioning from the CLI.

index
Enables or disables CLI provisioning from a single CLI session with the specified index. CLI session indexes are displayed in the output of the **who** command.

all
Enables or disables CLI provisioning for all active CLI sessions.

-d
Indicates which CLI sessions are enabled for provisioning.

Example The following example displays the CLI sessions that enabled for provisioning:

```
zSH> setcliprov -d
Note: Provisioning is only available when Flag Count = 0
CLI session = 0: Flag Count = 0.
CLI session = 1: Flag Count = 0.
CLI session = 2: Flag Count = 0.
CLI session = 3: Flag Count = 0.
CLI session = 4: Flag Count = 0.
CLI session = 5: Flag Count = 0.
CLI session = 6: Flag Count = 0.
CLI session = 7: Flag Count = 0.
CLI session = 8: Flag Count = 0.
CLI session = 9: Flag Count = 0.
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **resetcliprov**

setdatetime

Sets the date and time.

Syntax	`setdatetime [ month day yr hr min sec ]`
Options	*month*
	Month in the format *mm*.
	date
	Day in the format *dd*.
	yr
	Year in the format *yyyy*.
	hr
	Hour in the format *hh*.
	min
	Minutes in the format *mm*.
	sec
	Seconds in the format *ss*.
Access Level	admin
Notes	If Network Time Protocol (NTP) is enabled, the **setdatetime** command is disabled.
Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64
See Also	**showdatetime**

setline

Specifies the maximum number of lines to be displayed at once.

Syntax	`setline [ number-of-lines ]`
Options	
	Displays the current number of lines.
	number-of-lines
	Changes the number of lines displayed per page.
Example	zSH> **setline 52**
	cli lines per pager changed to: 52
Access Level	user
Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

setprompt

Sets the system prompt.

Syntax	`setprompt [session	user] prompt`
Options	**session**
	Changes the system prompt to the specified string for the current session.

user
> Changes the system prompt for the user to the specified string. This prompt appears every time the user logs in.

prompt
> A string of up to 20 characters for the prompt

Example The following example sets the system prompt to **Zhone>** for the current session:

```
zSH> setprompt session Zhone>
Prompt set to Zhone>
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

shelfctrl

Displays overall status of the system.

Syntax `sheflctrl [ monitor | show  | stats ]`

Options **monitor**
> Displays system status, including temperature, power supply status, and fan status.

show
> Displays state of the shelf monitor.

stats
> Displays device stats, including messaging errors, card updates, and clock messages.

Example 1 The following example displays the overall system status, including alarms on the slot cards:

```
zSH> shelfctrl monitor
Shelf uptime: 1 day, 23 hours, 26 minutes
Shelf Monitor CPLD version: 0.5
Shelf Monitor Firmware version: 0.6
Outlet temperature sensor: 77 degrees (normal)
Fan Power A: normal
Fan Power B: normal
Power Supply A: normal
Power Supply B: normal
Fan status: OK.
System: Minor alarm set.
Card  1: Minor alarm set.
```

Note that not all information is available for all products.

Example 2 The following example displays overall system status for a Raptor 100:

```
zSH> shelfctrl monitor
```

```
               Shelf uptime: 4 hours, 21 minutes
               Shelf start time: 49
               Control CPLD version: 2.1
               Outlet temperature sensor: 46 degrees Celsius (normal)
               Fan Power A: failure
               Fan Power B: failur
```

Example 3   The following example displays general system statistics:

```
               zSH> shelfctrl stats
               Shelf Controller Message Statistics
               ----------------------------------
               Card updates: 32
               Card ECHO: 0
               Directory services messages: 2
               Clock messages: 513905
               Lease messages: 1427
               Heartbeat messages: 2217639

               Card update errors: 0
               Card ECHO errors: 0
               Directory services errors: 0
               Clock errors: 0
               Lease errors: 0
               Heartbeat errors: 0
               Receive errors: 0
               No Peer heartbeat check errors: 0
```

Example 4   The following example (on a MALC) displays whether the shelf is active and
the state of each of the slot cards:

```
               zSH> shelfctrl show
               Shelf Controller Address: 01:01:12
               Shelf Registry Address: 01:01:1036
               Lease ID: 0x02070000_00000032
               State: active
               Slot 1:
                  prevState: CONFIGURING currentState: RUNNING
                  mode: FUNCTIONAL startTime: 1064226409
               Slot 2:
                  prevState: CONFIGURING currentState: RUNNING
                  mode: FUNCTIONAL startTime: 1064226942
               Slot 3:
                  prevState: CONFIGURING currentState: RUNNING
                  mode: FUNCTIONAL startTime: 1064236395
               Slot 4:
                  prevState: CONFIGURING currentState: RUNNING
                  mode: FUNCTIONAL startTime: 1064226590
               Slot 5:
                  prevState: CONFIGURING currentState: RUNNING
                  mode: FUNCTIONAL startTime: 1064226590
               Slot 6:
                  prevState: CONFIGURING currentState: RUNNING
                  mode: FUNCTIONAL startTime: 1064226558
```

```
                            Slot 7:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 8:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 9:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 10:
                               prevState: CONFIGURING currentState: RUNNING   mode:
                            FUNCTIONAL startTime: 1064226589
                            Slot 11:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 12:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 13:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 14:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 15:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 16:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 17:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 18:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226590
                            Slot 19:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064234610
                            Slot 20:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226592
                            Slot 21:
                               prevState: CONFIGURING currentState: RUNNING
                               mode: FUNCTIONAL startTime: 1064226493
```

Example 5 The following example is from a Raptor 100:

```
zSH> shelfctrl show
Shelf Controller Address: 01:01:12
Shelf Registry Address: 01:01:1032
Lease ID: 0x022b0000_00000033
State: active
Slot 1:
```

```
                        prevState: CONFIGURING currentState: RUNNING
                        mode: NONE startTime: 1061243734
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also slots

shelfreboot

Resets the shelf. When you reset a shelf, all connections are dropped.

> ⚠ **Caution:** This command reboots the system, and causes all connections and subscriber traffic to drop.

Syntax `shelfreboot shelf`

Options *shelf*
Shelf to reset. The only supported value is 1.

Access Level admin

Products BAN, MALC

See Also **systemreboot**

show

The **show** command displays the default contents of profile and its parameter value ranges. The command uses the following syntax:

Syntax `show profile-type`

Options *profile-type*
Shows the parameters in the specified profile with the parameter value ranges.

Example To view the options available for a profile, use the **show** command and specify the profile type:

```
zSH> show ip-interface-record
vpi:--------------->    {0 - 4095}
vci:--------------->    {0 - 65535}
rdindex:----------->    {0 - 2147483647}
dhcp:-------------->    none  client  server  both
addr:-------------->    {0 - -1}
netmask:----------->    {0 - -1}
bcastaddr:--------->    {0 - -1}
destaddr:---------->    {0 - -1}
farendaddr:-------->    {0 - -1}
mru:--------------->    {0 - 2147483647}
reasmmaxsize:------>    {0 - 65535}
ingressfiltername:->    {33}
```

```
                         egressfiltername:-->   {33}
                         pointtopoint:------>   no  yes
                         mcastenabled:------>   no  yes
                         ipfwdenabled:------>   no  yes
                         mcastfwdenabled:--->   no  yes
                         natenabled:-------->   no  yes
                         bcastenabled:------>   no  yes
                         ingressfilterid:--->   {0 - 2147483647}
                         egressfilterid:---->   {0 - 2147483647}
                         ipaddrdynamic:----->   static  ppp  dhcpclient
                         unnumbered
                         dhcpserverenable:-->   true  false
                         subnetgroup:------->   {0 - 2147483647}
                         unnumberedindex:--->   {0 - 2147483647}
                         mcastcontrollist:-->   {264}
                         vlanid:------------>   {0 - 4095}
                         maxVideoStreams:--->   {0 - 6}
                         NOTE: Supported VPI/VCI ranges vary based on card type.
                         See documentation for the exact range of supported VPI/
                         VCI values.
```

Access Level   admin

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also   **get**, **list**

showactivecards

Displays information about the active cards in a redundant card group.

Syntax   `showactivecards`

Example
```
zSH> showactivecards
  Shelf/Slot  Group Id   Card Type
  _____
  1:   1/21  2            MALC MTAC
  2:   1/1   1            MALC DS3
```

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also   **showredundancy**

showdatetime

Displays the date and time.

Syntax   `showdatetime`

Access Level   admin

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A

See Also   **setdatetime**

showhostname

Displays a list of remote hosts, along with their Internet addresses and aliases.

Syntax `showhostname`

Access Level user

Notes This command is persistent across reboots.

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

showinetstat

Displays information about the active IP sockets.

Syntax `showinetstat`

Example

```
zSH> showinetstat
Active Internet connections (including servers)
PCB       Proto Recv-Q Send-Q  Local Address      Foreign Address     (state)
--------- ----- ------ ------  ----------------- ----------------- -------
382806c   TCP        0    214  192.24.94.223.23   192.16.41.183.5169 ESTABLISHED
3827cd0   TCP        0      0  0.0.0.0.23         0.0.0.0.0          LISTEN
3827dd8   UDP        0      0  0.0.0.0.162        0.0.0.0.0
3827d54   UDP        0      0  0.0.0.0.161        0.0.0.0.0
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

showipstat

Displays IP statistics.

Syntax `showipstat [ -r ]`

Options

Displays IP protocol statistics.

-r

Resets counters to 0 (zero).

Example
```
zSH> showipstat
                    total 81601
                   badsum     0
                  tooshort     0
                  toosmall     0
                   badhlen     0
                    badlen     0
               infragments     0
               fragdropped     0
               fragtimeout     0
```

```
                    forward 11141
                 cantforward 4303
                 redirectsent    0
             unknownprotocol    2
                    nobuffers    0
                  reassembled    0
                 outfragments    0
                      noroute    0
                      fastfwd 6447695
               fastfwdnoroute    0
              ffwdnointerface    0
                  nointerface    0
                      c2ctotal 6447695
                    c2cbadptr    0
                     c2cnopkt    0
                 c2cnoipktmem    0
                    c2cttlexp    0
                c2clastchance    0
                  flingnoipkt    0
                   flingerror    0
                        flung    0
                     rawflung    0
                    rawnofling    0
                   fwdloopdrop    0
                localfastpath 55532
           pendingarpoverflow  835
```

Access Level admin

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

showline

Displays information on registered lines in line resource registry's database.

Syntax `showline [ shelf | slot| -c number of columns]`

Options **shelf**
Displays all registered lines on the specified shelf.

slot
Displays all registered lines on the specified shelf-slot.

-c number of columns
Specifies the number of columns (1 -12) to display for each line group.

Example
```
zSH>  showline 1 -c 5
Search in progress .........
--------------------------------------------------------
shelf = 1,  slot = 1, line type = DSPPROXY
line
 1-5    NONE ACT
--------------------------------------------------------
shelf = 1,  slot = 1, line type = AAL5PROXY
line
```

```
                  1-5    ACT
                  ------------------------------------------------------------
                  shelf = 1,  slot = 1, line type = SONET
                  line
                   1-5    OOS
                  ------------------------------------------------------------
                  shelf = 1,  slot = 1, line type = T1
                  line
                   1-5    OOS   OOS   OOS   OOS   OOS
                   6-10   OOS   OOS   OOS
                  ------------------------------------------------------------
                  shelf = 1,  slot = 1, line type = ETHERNET
                  line
                   1-5    ACT   OOS
                  ------------------------------------------------------------
                  shelf = 1,  slot = 8, line type = DSL
                  line
                   1-5    OOS   OOS   OOS   OOS   OOS
                   6-10   OOS   OOS   OOS   OOS   OOS
                  11-15   OOS   OOS   OOS   OOS   OOS
                  16-20   OOS   OOS   OOS   OOS   OOS
                  21-25   OOS   OOS   OOS OOS
                  -----------------------------------------------------------
                  shelf = 1,  slot = 15, line type = POTS
                  line
                   1-5    OOS   OOS   OOS   OOS   OOS
                   6-10   OOS   OOS   OOS   OOS   OOS
                  11-15   OOS   OOS   OOS   OOS   OOS
                  16-20   OOS   OOS   OOS   OOS   OOS
                  21-25   OOS   OOS   OOS   OOS
                  ------------------------------------------------------------
                  shelf = 1,  slot = 15, line type = DSL
                  line
                   1-5    OOS   OOS   OOS   OOS   OOS
                   6-10   OOS   OOS   OOS   OOS   OOS
                  11-15   OOS   OOS   OOS   OOS   OOS
                  16-20   OOS   OOS   OOS   OOS   OOS
                  21-25   OOS   OOS   OOS   OOS
```

Access Level user

Notes The time-out values persists across resets.

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

showlinestatus

Displays information about all the lines in the system.

Syntax **showlinestatus [*shelf slot port subport*]**

Options

With no options, displays status on all available lines.

shelf

> Displays status of all lines on the specified shelf. Currently, 1 (one) is the only supported value.

slot

> Displays status of all lines on the specified slot.

subport

> Displays status of all lines on the specified subport. Note that not all interfaces support subports.

Example 1   The following example displays the line status of the lines in shelf 1, slot 2 (in this example, an ATM trunking card):

```
zSH> showlinestatus 1 7
Search in progress .........
        ................
        Line Type-------> DS3 (1)
        GroupId --------> 260
        Status ---------> OOS (3)
        Redundancy -----> ACTIVE (3)
        TxClk ----------> LOOP (4)
        RefClkSrc ------> NO
        If_index -------> 259
        Shelf ----------> 1
        Slot -----------> 7
        Port -----------> 1
        SubPort --------> 0
        ................
        Line Type-------> DS3 (1)
        GroupId --------> 262
        Status ---------> OOS (3)
        Redundancy -----> ACTIVE (3)
        TxClk ----------> THROUGH (5)
        RefClkSrc ------> NO
<SPACE> for next page, <CR> for next line, A for all, Q to
quit
```

For each connection, the system lists the line type (such as an Ethernet, DS3, SONET, or T1/E1 line), the number of registered lines, their group ID, the line status, the ifindex (interface line number), the peer ifindex (the peer line number), and the shelf, slot, and port where the interface resides.

A value of **ACTIVE** in the **Status** field indicates that the physical circuit is detected. **OSS** (Out of Service) means that the physical interface is not active.

Example 2   The next example displays the line status of the line in shelf 1, slot 9, port 1 (in this example, an SDSL/G.SHDSL card):

```
zSH> showlinestatus 1 9 1
Search in progress .........
        ................
        Line Type-------> DSL (10)
        GroupId --------> 20
        Status ---------> OOS (3)
        Redundancy -----> NONE (0)
```

```
                 TxClk ----------> NONE (1)
                 RefClkSrc ------> NO
                 If_index -------> 19
                 Shelf ----------> 1
                 Slot -----------> 9
                 Port -----------> 1
                 SubPort --------> 0
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

showmem

Displays system memory partition blocks and statistics.

Syntax `showmem [ -a ]`

Options

Displays all memory partition blocks and pools.

-a
Displays all memory partition blocks and pools as well as the free memory blocks in the system partition.

Example The following example displays all the system memory blocks:

```
zSH> showmem -a
memory partition blocks and statistics...

FREE LIST:
  num     addr       size
  --- ---------- ----------
    1  0xfffa9f0      19968
    2  0x19b5400   97336376
    3  0x7d61858     179992


SUMMARY:
 status   bytes     blocks   avg block   max block
 ------ --------- -------- ---------- ----------
current
   free  97536336        3   32512112   97336376
--this represents free blocks not yet allocated to the
memory pools

 FIXED MEMORY POOLS:

Block          Total     Free
Size (Bytes)   Blocks    Blocks
    32          7540         59
    64          5780       2705
   128          5988         85
   256           664         33
   512           372        105
```

```
              1024            1532              3
              2048             184              4
              4096              65              1
              8192             107              2
             16384              34              1
             32768              88              2
             65536              13              0
            131072               2              0

              Pool Totals:
              Number of Total Blocks in all Pools: 22369
              Number of Free Blocks in all Pools: 3000
              Total Bytes in all Pools: 9739152
              Total Free Bytes in all Pools: 409760
              Total Allocated Bytes in all Pools: 9329392

              Statistics on Large Block Allocations:
              Number of Large Blocks Allocated: 18
              Total Bytes Allocated: 134201072
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

showredundancy

Displays system redundancy information.

Syntax `showredundancy`

Options

With no option specified, displays basic redundancy information.

-d

Displays detailed redundancy information such as active and standby times.

Example zSH> **showredundancy**
Redundancy status for card 01:01 - Not Safe, some
services are standalone
01:01 is active storage
No standby storage

```
zSH> showredundancy -d
Redundancy status for card 01:01 -
Taskname             Active Addr      Standby Addr    Stdby Ready?
========             ==========       ===========     ============
RdsServer            01:01:03         01:02:03        Yes
InfoServer           01:01:02         01:02:02        Yes
zCardRed             01:01:26         01:02:26        Yes
tMAXTask             01:01:1036       01:02:1036      Yes
trapSrv              01:01:25         01:02:25        Yes
tShelfRR             01:01:1035       01:02:1035      Yes
NpRedSrv             01:01:58         01:02:58        Yes
```

```
LogServer              01:01:08        01:02:08        Yes
tFTD                   01:01:67        01:02:67        Yes
tNumSrv                01:01:1030      01:02:1030      Yes
DhcpServerTask         01:01:1033      01:02:1033      Yes
filterupdate           01:01:1031      01:02:1031      Yes
ifcfgtask              01:01:1038      01:02:1038      Yes
Ccrr-1/1               01:01:64        01:02:64        Yes
MPRR-1/1               01:01:1044      01:02:1044      Yes
CTRR-1/1               01:01:1045      01:02:1045      Yes
VoiceCallSup           01:01:1046      01:02:1046      Yes
L-RR-1/1               01:01:1041      01:02:1041      Yes
TadSrvTask             01:01:1039      01:02:1039      Yes
tRprRP                 01:01:63        01:02:63        Yes
tDS1RP                 01:01:1061      01:02:1062      Yes
_RedSpawnSvrTask       01:01:1050      01:02:1050      Yes
connmgr                01:01:16        01:02:16        Yes
Safe, all services have redundant peers
01:01 is active storage
01:02 is standby storage
```

Products BAN, MALC

See Also **showactivecards** (MALC)

showresolver

Displays information about the Domain Name System (DNS) resolver on the device. The DNS resolver is configured in the **resolver** profile.

Syntax `showresolver [ -d domain-ID ]`

Options

With no option specified, displays all DNS resolver information.

-d *domain-ID*
Displays DNS resolver information for the specified domain ID.

Example
```
zSH> showresolver
Resolver Configuration:
   Routing Domain: 0
   Query Order: QUERY_LOCAL_FIRST
   Domain Name: zhone.com
   Nameserver[0]: 192.168.9.43
   Nameserver[1]: 201.12.4.68
   Nameserver[2]:
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

showsonetrp

Reports detailed status for an OC3-c/STM1 interface resource provider, including the following line conditions: This command is available only when a SONET interface is configured.

- Loss of signal (LOS)

- Loss of frame (LOF)

- Alarm indication signal (AIS)

Syntax `showsonetrp [`*`line`* `]`

Options **line**

The number of the interface to display status information for. With no options, the command displays overall information about the line.

Example The following example shows the **showsonetrp** command output for line 1:

```
zSH> showsonetrp 1
************      SONET RP Debug Information     ************
      name:                            tSONETRP
      address:                         01:01:1085
      lineRRLeaseId:                   0x02070000_0000004f
      sonetXlatProfLeaseId:            0x02070000_00000050
      sonetCfgProfLeaseId:             0x02070000_00000050
      sonetLineRRNotifyLeaseId:        0x00000000_00000000
      _sonetRpCardGroupId:             1
      iamRedundantCard:                TRUE
      iamActiveCard:                   TRUE
      Redundancy Mode                  CARD
      PeerCardInfoAvailable            TRUE
      PeerCardShelf                    1
      PeerCardSlot                     2
      PeerCardAlive                    TRUE
      numUnits:                        2
      Attached units:
              1 2

************  Debug Information for Line 1  ************
      iamRedundantLine:                TRUE
      iamActiveLine:                   TRUE
      state:                           4 ( OOS )
      ifIndex:                         4
      LineGroup ifIndex:               5
      primaryClock:                    FALSE
      shelf:                           1
      slot:                            1
      port:                            1
      subPort:                         0
      xlatProf.ifIndex:                4
      xlatProf.ifType:                 39
      xlatProf.adminStatus:            1
      sectionAlarms                    6 ( LOS LOF )
```

```
lineAlarms                              2 ( AIS )
pathAlarms                              1 ( NODEFECT )
mediumType                              sonet
mediumLineCoding                        sonetmediumnrz
mediumLineType                          sonetshortsinglemode
mediumCircuitIdentifier
mediumLoopbackConfig                    sonetnoloop
pathCurrentWidth                        sts3cstm1
clockExternalRecovery                   enabled
clockTransmitSource                     looptiming
mediumScrambleConfig                    TRUE
mediumLineScrmConfig                    TRUE
Send APS stats                          FALSE
```

Products BAN, MALC, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A

showuser

Displays information about all users on the system, or for a specific user.

Syntax `showuser [ username ]`

Options

If the current user has useradmin privileges, displays information about all users in the system. Otherwise, displays information only about the current user.

username
Displays information about the specified user.

Example The following example displays information a specific user:

```
zSH> showuser jjsmith
Full Name: jay_smith
User Name: jjsmith
Access Levels:(user)
....................
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **adduser**, **deleteuser**, **updateuser**

showzhonecpe

Displays the Zhone Customer Premises Equipment (CPE) connected to the system, including the virtual routing domain, IP address, and current connection status.

Syntax `showzhonecpe`

Example zSH> showzhonecpe
1: Zhone CPE at vrd:0 ip:192.168.199.205 status:UP
failures:0
Total Zhone CPE devices: 1 (1 up) (0 down)

Access Level admin

Products BAN

See Also **pollzhonecpe**

slotreboot

Resets the specified slot card. When you reset a system, all connections are
dropped.

Syntax `slotreboot slot`

Options *slot*

The individual slot(s) or range of slots to reboot. Confirmation messages
prompt to reboot all slots or select slots.

Example

```
zSH> slotreboot 2,3,[4-7],17,[8-10]
None interactive reboot all 10 slots? (yes or no) [no] yes
Do you want to exit from this request? (yes or no) [yes] no
Are you sure? (yes or no) [no] yes
JUL 24 19:29:18: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 2
JUL 24 19:29:19: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 3
JUL 24 19:29:20: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 4
JUL 24 19:29:21: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 5
JUL 24 19:29:22: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 6
JUL 24 19:29:23: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 7
JUL 24 19:29:24: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 17
JUL 24 19:29:25: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 8
JUL 24 19:29:26: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 9
```

```
JUL 24 19:29:27: critical: 1/1/1027: rebootserver: rebootShelfSlot.c:
RebootMessageSend(): l=1455: tCliInit0:
* * * * Slot Reboot : type = 2, shelf = 1, slot = 10
```

Access Level admin

Products BAN, MALC

See Also **shelfreboot**, **systemreboot**, **bootstate**

slots

Displays the type of cards installed in the chassis.

The **slots** command displays an asterisk (*) as a visual indicator for active cards in a redundant configuration.

The **slots** command also now displays the ROM and software versions.

The **slots** command can report any of the following states:

- NONE: Card inserted in shelf.

- BOOT: Card is running ROM code.

- LOAD: Card is loading code over the backplane.

- CONFIGURING: Card is loading code over the backplane.

- RUNNING: Card is fully functional.

Syntax `slots slot-number`

Options *slot-number*
   Displays information about the specified slot card.

Example 1 To view information about all the slot cards in the system, use the **slots** command without any arguments:

```
zSH> slots
 1: INFOSERVICES (RUNNING)
 3: ETHERNET (RUNNING)
 5: ATM TRNK CR/OC3 ATM SM (RUNNING)
 7: ATM TRNK/E3 ATM (RUNNING)
 9: HDSL2 (RUNNING)
10: ATM TRNK (LOADING)
12: ATM TRNK CR (LOADING)
15: ATM TRNK CR/T3 ATM (RUNNING)
```

Example 2 To view information about a particular slot card, use the **slots** command and specify a slot number. For example:

```
zSH> slots 3
Type            : INFOSERVICES
Card Version    : 1
EEPROM Version  : 1
Serial #        : 4010042
CLEI Code       : No CLEI
Card-Profile ID : 1/3/3
```

```
                       Shelf           : 1
                       Slot            : 3
                       State           : RUNNING
                       Mode            : FUNCTIONAL
                       Heartbeat check : enabled
                       Longest hbeat   : 180
                       Fault reset     : enabled
                       Uptime          : 2 hours, 45 minutes
```

Example 3
```
zSH> slots
 2: MALC UPLINK T1/E1 TDM (RUNNING)
 5: MALC ULCS/ISDN 2B1Q (RUNNING)
 6: MALC ULC (RUNNING)
 8: MALC ULC (RUNNING)
 9: MALC MTAC (RUNNING)
```

```
zSH> slots 5
Type            : MALC ULCS
Sub-Type        : ISDN 2B1Q
Card Version    : 1
EEPROM Version  : 1
Serial #        : 210003
CLEI Code       : No CLEI
Card-Profile ID : 1/5/5049
Shelf           : 1
Slot            : 5
State           : RUNNING
Mode            : FUNCTIONAL
Heartbeat check : enabled
Longest hbeat   : 4543
Fault reset     : enabled
Uptime          : 3 hours, 40 minutes
Start time      : 1124907219
```

Example 4 This example shows active cards with redundant configurations in slots 1 and 17.

```
zSH> slots
 1:*MALC RPR GIGE (RUNNING)
 2: MALC RPR GIGE (RUNNING)
 5: MALC XDSL 48 (RUNNING)
 8: MALC POTS 48/with Packet Voice (RUNNING)
17:*MALC MTAC (RUNNING)
17: MALC MTAC (RUNNING)
```

Example 5
```
zSH> slots 1
Type            :*MALC UPLINK T1/E1 TDMF
Card Version    : 12740102
EEPROM Version  : 1
Serial #        : 4340666
CLEI Code       : No CLEI
Card-Profile ID : 1/1/5114
Shelf           : 1
Slot            : 1
```

```
ROM Version     : MALC 1.9.0.1
Software Version: MALC 1.12.0.102
State           : RUNNING
Mode            : FUNCTIONAL
Heartbeat check : enabled
Longest hbeat   : 50
Fault reset     : enabled
Uptime          : 1 hour, 8 minutes
Start time      : 1131462988
zSH>
```

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **bootstate**

snmp

Provides access to standard SNMP commands.

Syntax **snmp [get|set|next|walk|xlate]** *ipAddr Community OID* **[***type***] [***value***]**

Options **get**
Gets the value of the specified OID.

set
Sets the specified OID. Currently unsupported.

next
SNMP next request. Currently unsupported.

walk
Starts a MIB walk on the specified device. Currently unsupported.

xlate
Translates between OIDs and object names.

ipAddr
The IP address of the device.

Community
The SNMP community name for the device.

OID
The OID for the request.

type
SNMP type. Used only in **set** requests.

value
The value for the OID. Used only in **set** requests.

Example 1 The following example translates the object name **sysDescr** to an OID value:

```
zSH> snmp xlate sysDescr
1.3.6.1.2.1.1.1
```

Example 2   The following example displays the upstream and downstream line rates for
an SDSL interface.

First, find the ifIndex for the interface you want to get the information for:

```
zSH> ifxlate 1-7-1-0/hdsl2
ifIndex: ---------->   {868} use this value in the SNMP get command
shelf: ------------>   {1}
slot: ------------->   {7}
port: ------------->   {1}
subport: ---------->   {0}
type: ------------->   {hdsl2}
adminstatus: ------>   {up}
physical-flag: ---->   {true}
iftype-extension: ->   {none}
ifName: ----------->   {1-7-1-0}
```

Then use the ifIndex in the SNMP get command:

```
zSH> snmp get 192.240.200.111 ZhonePrivate zhoneDslUpLineRate.868
zhoneDslLineEntry.zhoneDslUpLineRate.868 Value: 1552 (0x610)

zSH> snmp get 192.240.200.111 ZhonePrivate zhoneDslDownLineRate.868
zhoneDslLineEntry.zhoneDslDownLineRate.868 Value: 1552 (0x610)
```

Example 3   The following example displays the upstream and downstream line rates for
an ADSL interface.

First, find the ifIndex for the interface you want to get the information for:

```
zSH> ifxlate 1-3-1-0/adsl
ifIndex: ---------->   {58} use this value in the SNMP get command
shelf: ------------>   {1}
slot: ------------->   {3}
port: ------------->   {1}
subport: ---------->   {0}
type: ------------->   {adsl}
adminstatus: ------>   {up}
physical-flag: ---->   {true}
iftype-extension: ->   {none}
ifName: ----------->   {1-3-1-0}
```

Then use the ifIndex in the SNMP get command:

```
zSH> snmp get 192.240.200.114 ZhonePrivate zhoneDslUpLineRate.58
zhoneDslLineEntry.zhoneDslUpLineRate.58 Value: 1088000 (0x109a00)
zSH> snmp get 192.240.200.114 ZhonePrivate zhoneDslDownLineRate.58
zhoneDslLineEntry.zhoneDslDownLineRate.58 Value: 8128000 (0x7c0600)
```

Example 4   The following example displays the upstream and downstream line rates for a
SHDSL interface.

First, find the ifIndex for the interface you want to get the information for:

```
zSH> ifxlate 1-3-1-0/shdsl
ifIndex: ---------->   {364} use this value in the SNMP get command
```

```
                    shelf: ------------>  {1}
                    slot: ------------->  {3}
                    port: ------------->  {1}
                    subport: ---------->  {0}
                    type: ------------->  {shdsl}
                    adminstatus: ------>  {up}
                    physical-flag: ---->  {true}
                    iftype-extension: ->  {none}
                    ifName: ----------->  {1-3-1-0}
```

Then use the ifIndex in the SNMP get command:

```
zSH> snmp get 192.240.200.123 ZhonePrivate zhoneDslUpLineRate.364
zhoneDslLineEntry.zhoneDslUpLineRate.364 Value: 2320 (0x910)
zSH> snmp get 192.240.200.123 ZhonePrivate zhoneDslDownLineRate.364
zhoneDslLineEntry.zhoneDslDownLineRate.364 Value: 2320 (0x910)
```

Example 5   The following example displays information about an ATM T1/E1 interface.

First, find the ifIndex for the interface you want to get the information for:

```
zSH> ifxlate 1-16-1-0/ds1
ifIndex: ---------->  {8} use this value in the SNMP get command
shelf: ------------>  {1}
slot: ------------->  {16}
port: ------------->  {1}
subport: ---------->  {0}
type: ------------->  {ds1}
adminstatus: ------>  {up}
physical-flag: ---->  {true}
iftype-extension: ->  {none}
ifName: ----------->  {1-16-1-0}
```

Then use the ifIndex in the SNMP get command. The following two commands get the valid intervals for the DS1 interface and the current number of severely errored seconds:

```
zSH> snmp get 192.240.200.111 ZhonePrivate zhoneValidIntervals.8
zhoneDs1Entry.zhoneValidIntervals.8 Value: 26 (0x1a)

zSH> snmp get 192.240.200.111 ZhonePrivate zhoneCurrentSESs.8
zhoneDs1CurrentEntry.zhoneCurrentSESs.8 Value: 0 (0x0)
```

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

sonetStatsShow

Displays performance monitoring statistics for the current SONET connections. his command is available only when a SONET interface is configured.

Syntax   `sonetStatsShow ifIndex`

Options   ifIndex
> The ifIndex number or component name (for example, 1-1-1-0/sonet) of the SONET interface.

Example

```
zSH> sonetStatsShow 29


****************     Pmon Statistics of Line 29    ****************


_____Driver Raw Counts_____

 TxCell    RxCell    HECCor    HECUncor    FifoOv    Locd
    73815      73817       0           0          0      0


  LineBIP    SectBIP    PathBIP   LineFEBE   PathFEBE   OOF
       0          0          0        426      73387    0
_____Near-End Current Stats_____
...Section Stats............Line Stats..............Path Stats.....
ESs   SESs SEFs CVs        ESs   SESs CVs     UAS   ESs   SESs CVs      UAS
0     0    0    0          0     0    0       0     0     0    0        0
_____Far-End Current Stats_____
.......Line Stats............Path Stats.....
ESs   SESs CVs     UAS   ESs   SESs CVs      UAS
426   0    426     0     138   10   194      298
_____Near-End Interval Stats_____
   ......Section Stats...........Line Stats..............Path Stats.....
INT   ESs   SESs SEFs CVs       ESs   SESs CVs     UAS   ESs   SESs CVs      UAS
1     0     0    0    0         0     0    0       0     0     0    0        0
2     0     0    0    0         0     0    0       0     0     0    0        0
3     0     0    0    0         0     0    0       0     0     0    0        0
4     0     0    0    0         0     0    0       0     0     0    0        0
5     0     0    0    0         0     0    0       0     0     0    0        0
6     0     0    0    0         0     0    0       0     0     0    0        0
7     0     0    0    0         0     0    0       0     0     0    0        0
8     0     0    0    0         0     0    0       0     0     0    0        0
9     0     0    0    0         0     0    0       0     0     0    0        0
10    0     0    0    0         0     0    0       0     0     0    0        0
11    0     0    0    0         0     0    0       0     0     0    0        0
12    0     0    0    0         0     0    0       0     0     0    0        0
13    0     0    0    0         0     0    0       0     0     0    0        0
14    0     0    0    0         0     0    0       0     0     0    0        0
15    0     0    0    0         0     0    0       0     0     0    0        0
16    1     1    0    0         0     0    0       0     0     0    0        0
_____Far-End Interval Stats_____
   ....Line Stats...........Path Stats.....
INT   ESs   SESs CVs     UAS   ESs   SESs CVs      UAS
1     301   0    301     0     299   0    537      0
2     287   0    287     0     286   0    410      0
3     589   0    589     0     588   18   3423     0
4     248   0    248     0     247   1    989      0
5     474   0    474     0     474   0    2219     0
6     515   0    515     0     511   8    2121     0
7     233   0    233     0     228   0    391      0
```

```
8     227   0    227    0    227   0    302     0
9     269   0    269    0    268   0    452     0
10    274   0    274    0    272   0    359     0
11    461   0    461    0    456   0    1083    0
12    425   0    425    0    422   0    804     0
13    257   0    257    0    255   0    420     0
14    255   0    255    0    250   0    366     0
15    397   0    397    0    397   7    1492    0
16    899   1    898    0    899   80   7532    0
*********************          End        *********************
```

Access Level user

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

sonetstatusshow

Displays performance monitoring statistics for the current SONET connections. his command is available only when a SONET interface is configured.

Syntax `sonetstatusshow ifIndex`

Options **ifIndex**
The ifIndex number or component name (for example, 1-1-1-0/sonet) of the SONET interface.

Example

```
zSH> sonetStatusShow 29

Current Time: FRI SEP 24 16:28:21 2004
_____    Status of Line 29    _____
no section alarms
no line alarms
no path alarms
_____        End        _____
```

Access Level user

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

stack

Binds, unbinds, and shows the logical protocol stacks used in the system.

Syntax `stack bind  [ upperlayer lowerlayer ]`

The command can be used in two forms: If no arguments are provided to **stack bind**, it will prompt for the upper and lower interfaces. Alternately, the interfaces can be provided on the command line.

upper layer

The upper layer of the interfaces to be bound. Interfaces can be specified using either the *name*/*type* or the *shelf*/*slot*/*port*/*subport*/*type* notations.

lower layer

The lower layer of the interfaces to be bound. Interfaces can be specified using either the *name*/*type* or the *shelf*/*slot*/*port*/*subport*/*type* notations.

Syntax `stack unbind [ upperlayer lowerlayer ]`

Unbinds the specified interface.

upper layer

The upper layer of the interfaces to be unbound. Interfaces can be specified using either the *name*/*type* or the *shelf*/*slot*/*port*/*subport*/*type* notations.

lower layer

The lower layer of the interfaces to be unbound. Interfaces can be specified using either the *name*/*type* or the *shelf*/*slot*/*port*/*subport*/*type* notations.

Syntax `stack show interface`

Displays the protocol stack for the specified interface.

interface

The interface. Interfaces can be specified using either the *name*/*type* or the *shelf*/*slot*/*port*/*subport*/*type* notations.

Syntax `stack showall interface`

Displays all the associated layers of the specified interface.

Example 1
```
zSH> stack bind
Enter the upper layer: 1-1-2-0/ip
Enter the lower layer: 1-1-2-0-ethernetcsmacd/other
Stack bind successful.
```

Example 2
```
zSH> stack show 1-9-48-0-hdsl2/aal5
1483 layer: 1-9-48-0-hdsl2/rfc1483
AAL5 layer: 1-9-48-0-hdsl2/aal5
ATM layer:  1-9-48-0-hdsl2/atm
Line Group: 1-9-48-0-hdsl2/other
Physical:   1/9/48/0/hdsl2
```

Example 3
```
zSH> stack showall 1-5-1-0/sonet
ATM layer:  1-5-1-0-sonet/atm
Line Group: 1-5-1-0-sonet/other
Physical:   1/5/1/0/sonet
```

Example 4
```
zSH> stack showall 1-3-1-0/ip
IP Layer:   1-3-1-0                 197.170.1.254
Line Group: 1-3-1-0-ethernetcsmacd/other
Physical:   1/3/1/0/ethernetcsmacd
```

Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

su

Logs in the specified user.

Syntax	`su username`
Options	**username** The superuser name.
Access Level	user
Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64
See Also	logout

swact

Following the **swupgrade** command, this command switches the active device after software upgrade is complete.

Syntax	`swact [abort]`
Options	**abort** This optional parameter terminates the software upgrade and reboots the standy device.
Access Level	admin
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723
See Also	**swupgrade**

swupgrade

Initiates the software upgrade process. This command reboots the standby device, informing it of upgrade. This command must be followed by the **swact** command, unless the **autoswact** option is used.

Syntax	`swupgrade`
Options	**autoswact** This option allows a one-step software upgrade.
Access Level	admin
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723
See Also	**swact**

swversion

Displays the current system software version.

Syntax `swversion`

Example zSH> **swversion**
Zhone malcOc12 software version release 1.13

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **romversion**

syslog

Configures logging levels for messages on the system. The system sends log messages to a management session (either on the console or over a telnet session), a log file on the device, and, optionally, a syslog server.

The **log** command configures the type of information sent in these messages. By default, the system sends the same type of information to all log message destinations, and logging is disabled on both the serial craft port and over telnet sessions.

If the messages sent to the syslog server are configured the same as the log messages sent to the console or the persistent storage (the default) the **log** command also configures the **syslog** message contents. If the syslog messages have been modified (using the **log-module** profile or the **syslog** command), use the **syslog** command to modify syslog levels.

Syntax `syslog help`

help
Displays the help menu.

Syntax `syslog show`

show
Displays the currently configured logging levels for each software module.

Syntax `syslog level module level`

module
The system module to set the level for. Use the **syslog show** command to display all the system modules.

level
Sets the logging level for the specified module. Logging levels are:

- 1 emergency
- 2 alert
- 3 critical
- 4 error

- 5 warning
- 6 notice
- 7 information
- 8 debug

You can specify either the name of the level or the number.

Syntax `syslog option` *`type`* `[ on | off ]`

Specifies the information to include in logging messages.

type **on**
Specifies that the type of information be included in syslog messages. To view the type of information you can include in a logging message, enter the **syslog option** command without any arguments.

type **off**
Specifies that the type of information not be included in syslog messages.

Syntax `syslog [ enable | disable ]` *`module`*

enable *module*
Enables logging for the specified module. Use the **syslog show** command to display all the system modules and whether they are enabled or not.

disable *module*
Disables logging for the specified module.

Syntax `syslog session [on | off]`

on
Enables logging for the current session only.

off
Disables logging for the current session.

Syntax `syslog serial [on | off]`

on
Enables logging on the serial craft port. This setting persists across reboots.

off
Disables logging on the serial craft port. This setting persists across reboots.

Syntax `syslog display`

Displays entries in the persistent log.

Syntax `syslog cache [` *`max`* `| grep` *`pattern`* `|` *`size`* `| clear | help ]`

✅ **Note:** The **cache** option is only supported on the BAN and MALC.

syslog cache
Displays the syslog cache.

syslog cache max *length*
Sets the maximum number of syslog messages to store. The maximum syslog cache size is 2147483647, depending in the amount of memory available.

syslog cache grep *pattern*
Searches through the syslog cache for the specified regular expression.

syslog cache clear
Clears the syslog cache.

syslog cache *size*
Sets the maximum amount of memory for the syslog cache. Without options, displays the current log size.

syslog cache help
Displays help on the **syslog cache** command.

Example 1 The following example displays the logging levels and enabled status for the system modules:

```
zSH> syslog show
MODULE                                              LEVEL        STATUS
message                                             error        enabled
taskclock                                           error        enabled
card                                                error        enabled
bds_client                                          error        enabled
alarm_mgr                                           error        enabled
tnsxmgt                                             error        enabled
leaseapi                                            error        enabled
vcs-client                                          error        enabled
dirserclient                                        error        enabled
rebootserver                                        error        enabled
pcmciadiag                                          error        enabled
...
...
...
```

Example 2 The following example sets the logging level for the card module to information:

```
zSH> syslog level card info
Module: card at level: information
```

Example 3 The following example shows how to configure what information to include in syslog messages.

```
zSH> syslog option all on
```

```
time:date:level:address:log:taskname:taskid:file:function
:line:(0xff)
```

Example 4   To return the log messages to their default format, enter the following command:

```
zSH> syslog option default on
time: date: level: address: log: taskname:  (0xf)
```

Example 5   The following example configures the log cache size:

```
zSH> syslog cache max 200
Maximum number of log messages that can be saved: 200
```

Example 6   following example searches through the log cache for the word "IMA":

```
zSH> syslog cache grep IMA
Searching for: "IMA"
[1]: JAN 06 20:36:10: alert  : 1/2/50  : alarm_mgr:
tLineAlarm: 01:02:02 Critical IMA Down Line
[2]: JAN 06 20:36:46: alert  : 1/2/50  : alarm_mgr:
tLineAlarm: 01:02:02 Critical IMA Up Line
```

Access Level   user

Products   BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also   log

systemreboot

Resets the system.

> ⚠ **Caution:** When you reset a system, all connections are dropped.

Syntax   `systemreboot`

A warning appears when a restore file exists in the system Flash to prevent unintentional deletions of the restore file with a new restore file.

Example

```
zSH> systemreboot
>> A restore file (/card1/onreboot/restore) is present.
>> A system reboot will result in a database restore.
>> Continue? (yes or no) [no]: yes
>>
>> Do you want to reboot the system? (yes or no) [no] yes
>>
>> Do you want to exit from this request? (yes or no) [yes] no
>>
>> Are you sure? (yes or no) [no] yes
```

Access Level	admin
Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64
See Also	**shelfreboot**, **slotreboot**

systemrpshow

Displays general information about the system resource provider, including memory and flash usage.

Syntax `systemrpshow`

Example

```
zSH> systemrpshow
System RP Info:
    RP Address.........................01:02:98
    % Memory used......................87.16
    % Flash used.......................10.04
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

T

telnet

Initiates an outbound telnet session.

Syntax `telnet host`

Options **host**
The hostname or IP address to telnet to.

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **ping**

thermoshow

The **thermoshow** command returns temperature information about the system. The system has two thermometers. From the front of the unit, thermometer 1 is located to the right of the MPC750 microprocessor, and thermometer 2 is located on the right side of the system circuit board.

Syntax `thermoshow`

Example The example below shows the system response to the command.

```
zSH> thermoshow
THERMO1:
```

```
Temperature     : 24 C
High Threshold  : 65
Low Threshold   : -5
THERMO2:
Temperature     : 29 C
High Threshold  : 60
Low Threshold   : -5
```

Products Sechtor 100A

timeout

Specifies a the period of inactivity after which administrative telnet sessions will be automatically disconnected. The default time out is set to 10 minutes.

Syntax `timeout [ -d | off | minutes ]`

Options **off**
Disables the timer.

-d
Resets the timer to the default value of 10 minutes.

minutes
Specifies the timeout period in minutes.

Access Level useradmin

Notes The time-out values persists across resets.

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **logout**

traceroute

The **traceroute** command uses Internet Control Message Protocol (ICMP) echo and User Datagram Protocol (UDP) to determine the path between two network hosts.

The value of the Time To Live (TTL) field in the IP header is set when the IP packet is sent. Each router that processes the datagram reduces the TTL value by one. When a router receives a TTL with a 0 (zero) or one (1) value, it discards the datagram and sends a time exceeded message to the originating host.

The **traceroute** command sends an IP datagram with a TTL value of one (1) to the destination host. The first router discards the datagram and sends the time exceeded message back to the originator. This identifies the first router along the route. This process is repeated using incrementally higher TTL values until all of the routers are identified. When the datagram reaches the destination host, the host recognizes that the packet is for an unused port, and generates a port unreachable error.

Syntax `traceroute [-I] [-f first_ttl] [-m max_ttl] [-p port] [-q nqueries] [-s src_addr] [-w waittime] [ -z pausemsecs] host [packetlen] [-l ip address]`

Options **-I**

Use ICMP ECHO instead of UDP datagrams.

-f *first_ttl*

Sets the initial TTL used in the first outgoing probe packet. The default is one (1).

-m *max_ttl*

Sets the maximum time-to-live (number of hops) to be used in outgoing probe packets. The default is 30 hops.

-p *port*

Sets the base UDP port number used in probes. The default is 33434.

-q *nqueries*

The number of probes sent to each ttl setting.

-s *src_addr*

Tells the system to use the following IP address (which usually is given as an IP number, not a hostname) as the source address in outgoing probe packets. This option is used with hosts that have more than one IP address to force the source address to be other than the IP address of the interface that the probe packet is sent on.

-w *waittime*

Sets the time, in seconds, to wait for a response to a probe. The default is 5 seconds.

-z *pausemsecs*

Sets the time, in milliseconds, to pause between probes. The default is 0 (zero).

host

The destination host name or IP address in dotted quad format.

packetlen

The packet length, in bytes, of the probe datagram. The default is 40 bytes.

-l

Specifies the use of source based routing to determine the interface on which to probe packets.

Example The following example traces a route to a host with an IP address of 192.16.41.218, which is four routers away from the originating host.

The next example traces a source route to a host with an IP address of 10.10.203.1, which is one router away from the originating host.

```
zSH> traceroute 192.16.41.218
traceroute to 192.16.41.218 (192.16.41.218), 30 hops max,
40 byte packets
1  192.16.92.254  0 ms  0 ms  0 ms
2  192.16.252.121  64 ms  64 ms  64 ms
```

```
                     3  192.16.3.254  64 ms  64 ms  64 ms
                     4 192.16.41.218  64 ms * *

                     zSH> traceroute -l 10.10.203.2 10.10.203.1
                     traceroute to 10.10.203.1 (10.10.203.1), 30 hops max, 40
                     byte packets
                      1   10.10.203.1        10 ms
                     traceroute Complete
```

Access Level admin

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor
100A, Z-Edge 64

See Also **ping**, **telnet**

U

update

The update command changes an existing record.

Syntax `update profile-type index`

Options *profile-type*
The type of profile to update.

index
An index for the record. Some records, such as line profiles, use an index
of the form *shelf-slot-port-subport-interface/type*. Other records, such as
subscriber records, use an index of the form *n*, where *n* is an integer.

Example The following example updates the system profile:

```
zSH> update system 0
Please provide the following: [q]uit.
syscontact: ----------> {Zhone Global Services and Support 7001 Oakport Road
Oakland Ca. (877) Zhone20 (946-6320) Fax (510)777-7113 support@zhone.com}:
sysname: ------------->  {BAN-2000}:
syslocation: --------->  {Oakland}:
enableauthtraps: ----->  {disabled}: enabled
setserialno: --------->  {0}:
zmsexists: ----------->  {false}:
zmsconnectionstatus: ->  {inactive}:
zmsipaddress: -------->  {0.0.0.0}:
configsyncexists: ---->  {false}:
configsyncoverflow: -->  {false}:
configsyncpriority: -->  {high}:
configsyncaction: ---->  {noaction}:
configsyncfilename: -->  {}:
configsyncstatus: ---->  {syncinitializing}:
configsyncuser: ------>  {}:
configsyncpasswd: ---->  {}:
```

```
numshelves: ----------->  {1}:
shelvesarray: -------->   {}:
numcards: ------------>    {3}:
ipaddress: ----------->    {0.0.0.0}: 192.168.8.21
alternateipaddress: -->   {0.0.0.0}:
countryregion: ------->   {unknown}:
primaryclocksource: -->   {0/0/0/0/0}:
ringsource: ----------->   {internalringsourcelabel}:
revertiveclocksource: ->  {true}:
voicebandwidthcheck: -->  {false}:
....................
Save changes? [s]ave, [c]hange or [q]uit: s
Record updated.
```

Access Level	admin
Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64
See Also	**del**, **get**, **list**, **new**, **show**

updateuser

Updates access levels for a user.

Syntax	`updateuser username`
| **Example** | ```
zSH> updateuser jjsmith
Updating access levels for user (jjsmith)
Please provide the following: [q]uit.
admin: ------->  {yes}: no
zhonedebug: -->  {no}:
voice: ------->  {no}:
data: -------->  {no}:
manuf: ------->  {no}:
database: ---->  {no}:
systems: ----->  {no}:
tool: -------->  {no}:
useradmin: --->  {yes}:
Save changes? [s]ave, [c]hange or [q]uit: s
User record updated.
``` |

Access Level	useradmin
Products	BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64
See Also	**showuser**

upgrade

Displays upgrade status and enables control of the upgrade process.

Syntax	`upgrade[show] [set slot boot|noboot] [stop] [continue] [log]`

Options **show**
  Displays the status of the running or terminate upgrade process.

  set slot boot|noboot
  Specifies whether to reboot or skip a card in the specified slot.

  stop
  Terminates the upgrade task.

  continue
  Restarts the upgrade task after termination.

  log
  Displays contents of the upgrade log file.

Example 1 `zSH> upgrade show`
```
Upgrade task is running
Status is waiting for peer
```

Example 2 `zSH> upgrade show`
```
Upgrade task is running
Status is rebooting slot cards
Status of slot 3 is reboot not required
Status of slot 4 is reboot not required
Status of slot 5 is reboot not required
Status of slot 6 is reboot complete
Status of slot 7 is reboot not required
Status of slot 8 is reboot not required
Status of slot 9 is reboot not required
Status of slot 10 is reboot not required
Status of slot 11 is reboot not required
Status of slot 12 is reboot not required
Status of slot 13 is reboot not required
Status of slot 14 is reboot not required
Status of slot 15 is reboot not required
Status of slot 16 is reboot not required
Status of slot 17 is reboot not required
Status of slot 18 is reboot not required
Status of slot 19 is rebooting
Status of slot 20 is reboot not required
Status of slot 21 is reboot not required
```

Example 3 zSH> **upgrade show**
```
Upgrade task is not running
Status is completed successfully
Message is:
Software upgrade completed successfully!
Status of slot 3 is reboot not required
Status of slot 4 is reboot not required
Status of slot 5 is reboot not required
Status of slot 6 is reboot complete
Status of slot 7 is reboot not required
Status of slot 8 is reboot not required
Status of slot 9 is reboot not required
Status of slot 10 is reboot not required
```

```
                        Status of slot 11 is reboot not required
                        Status of slot 12 is reboot not required
                        Status of slot 13 is reboot not required
                        Status of slot 14 is reboot not required
                        Status of slot 15 is reboot not required
                        Status of slot 16 is reboot not required
                        Status of slot 17 is reboot not required
                        Status of slot 18 is reboot not required
                        Status of slot 19 is reboot complete
                        Status of slot 20 is reboot not required
                        Status of slot 21 is reboot not required
```

Example 4

```
zSH> upgrade stop
zSH> No rfc1483 layer on aal5Proxy 24
JUL 06 17:08:41: alert  : 1/1/1030: infosrv: _UpgradeTask(): l=2524:
UpgradeTask: DBUpgrade failed.
Database unchanged.
Software upgrade failed!, 0x21b001c errno = 0x21b001c
```

Access Level admin

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

See Also **swact, swupgrade**

V

verbose-restore-off

This command is only used by the configuration restore process.

Syntax `N/A`

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

verbose-restore-on

This command is only used by the configuration restore process.

Syntax `N/A`

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

videosource

The **videosource** command is used to add, show, and delete interfaces for video signals.

Syntax `videosource add [domain `*`routing-domain`*`] `*`multicast-address`*
`*`interface`* `[`*`vpi/vci`*`]`

> **routing-domain**
> Optional domain used for routing.

> **multicast-address**
> Address of the multicast interface.

> **interface**
> Interface used as the video source.

Syntax `videosource show [`*`multicast-address]`* `[`*`interface`*`]`

> **multicast-address**
> Address of the multicast interface.

> **interface**
> Interface used as the video source.

Syntax `videosource delete [domain` *`routing-domain`*`]`
`` *`multicast-address interface`* `[`*`vpi/vci`*`]`

> **routing-domain**
> Optional domain used for routing.

> **multicast-address**
> Address of the multicast interface.

> **interface**
> Interface used as the video source.

Example
```
zSH> videosource add 224.1.1.2 1-1-1-0/ip
Added video-source profile

zSH> videosource show
Domain: 0 multicastAddr: 224.1.1.1 IfName: 1-1-1-0/ip
Domain: 0 multicastAddr: 224.1.1.2 IfName: 1-1-1-0/ip
Domain: 0 multicastAddr: 224.1.1.3 IfName: 1-1-1-0/ip
Domain: 0 multicastAddr: 224.1.1.4 IfName: 1-1-1-0/ip

zSH> videosource delete 224.1.1.2 1-1-1-0/ip
Deleted video-source profile
```

Access Level Admin

voice

The **voice** command can add, delete, or show voice connections. The following types of voice connections are supported:

- POTS to AAL2, DS1, GR303,V5.2, or VOIP

- ISDN to AAL2 or V5.2

Syntax `voice add` *`subscriber-endpoint remote-endpoint`* `[sub` *`descr`*`]`
`[enable] framesperpkt` *`number-frames`*

add

    Add a voice connection between *subscriber-endpoint* and *remote-endpoint*.

subscriber-endpoint

    Name and type of the physical interface on the subscriber's side of the voice connection. Values:

    pots *interface* [**alaw** | **mulaw**]

    isdn *interface*

    aal2 *interface* **vp|vc** *VPI/VCI* [**td** *Tx/Rx*] **cid** *CID* [**alaw** | **mulaw**] [**aud** *audio-prf-id*] [**ap** *preferred-ap-id*]

    elcp *interface* **vp|vc** *VPI/VCI* [**td** *Tx/Rx*] **port** *port* [alaw|mulaw] [**aud** *audio-prf-id*] [**ap** *preferred-ap-id*]

    voip *IPinterface* **dn** *directory-number* [**name** *username*] [**pw** *password*] [**plar** *dest-ipaddr*] [*codec*] [t38fax *t38-fax*]

    interface is the physical interface in format *name/type*.

    IPinterface is the IP interface name with the type **ip**.

    For GR-303, the interface group must already exist.

    For V5.2, the V5.2 interface group must already exist.

    For ATM interfaces, the VPI/VCI, the CID, and the traffic descriptor must exist. The **voice add** command will automatically create the VCL if it does not exist.

    For VOIP, the IP interface must already exist. The optional *codec* argument sets the preferred-codec when creating a voice connection.

remote-endpoint

    Name and type of the physical interface on the remote side of the voice connection. Values:

    gr303 *IG*/*CRV*

    v52 *IG*/*userport* **type** *type* [**cpath** *cpath*]

    aal2 *physicalIF* **vc** *vpi/vci* **cid** *cid* [**aud** *aud-prf-id*] [**ap** *pref-ap-id*]

    voip *IPinterface* **dn** *directory-number* [**name** *username*] [**pw** *password*] [**plar** *dest-ipaddr*] [t38fax *t38-fax*]

    isdnsig *ID*

    ds1 *interface* **ds0** *channelnum*

    IG is the interface name. This must already exist.

    CRV is the GR-303 call reference value.

    userport is the V5.2 user port number.

    type is isdn or pots.

    cpath is the V5.2 cpath.

physicalIF is the address of the physical interface, in the form shelf-slot-port-subport/type. For example, **1-1-1-0/adsl**.

vpi/vci is the VPI/vci pair for the AAL2 interface.

cid is the channel identifier.

aud-prf-id is the audio profile ID.

pref-ap-id is the preferred audio encoding format. 1 is for G.711, 2 is for G.726.

IPinterface is the IP interface for the VOIP connection. This interface must already exist.

directory-number is the VOIP directory number.

username is the VOIP username.

password is the VOIP password.

ID is the ISDN ID.

interface is the address of the physical iDS1 interface, in the form shelf-slot-port-subport/type. For example, **1-1-1-0/adsl**.

channelnum is the number of the DSO for the call.

For ATM interfaces, the VPI/VCI, the traffic descriptor, and the VCL must exist; the **voice add** command will not create them.

esa-ep
Specifies Emergency Standalone support.

 IpIfname dn *dir-num* [name *username*] [pw *password*] [plar *dest-ipaddr*] [reg *serverId*] [codec *pref-codec*] [t38fax *t38-fax*]

alaw | mulaw
Indicates whether the voice connection uses Alaw or Mulaw companding. This option sets the following parameters:

For POTS, the **analog-if-cfg-profile** profile **pcmEncoding** parameter. For AAL2 (non-ISDN), the **aal2-vcl-profile** and **aal2-cid-profile** profile **pcmEncoding** parameter.

sub
Adds a text description to the subscriber-voice profile.

enable
Sets the administrative status of the if-translate of the interface to 'up'. For ISDN voice connections, this parameter automatically sets the following parameters for the voice connection:

- atm-vcl: vcc aal5 cpcs transmit and receive sdu size
- aal2-vcl-profile: timer-cu, frame-mode-data, cas, trunk-type, pcm-encoding, and ras-timer
- aal2-cid-profile: frame-mode-data, cas, and pcm-encoding

framesperpkt

Specifies the number of frames per packet in a voice connection. The available range is 1 to 7 packets. This parameter updates the setting in the subscriber-voice-voip profile.

Syntax `voice delete subscriber-endpoint`

delete
   Delete the voice connection from **subscriber** *subscr-info*.

subscriber-endpoint
   Name and type of the physical voice connection.

Syntax `voice show [-l POTSPhysicalIf] | [endpoint] [-v]`

-l POTSPhysicalIf
   Displays the voice connections for the specified POTS physical interface.

endpoint
   Displays the voice connections on the system. For V5.2 voice connections, also displays POTS or ISDN connection type. For AAL2 voice connections, also displays VP for VP-switched or VC for VC-switched.

   This command can also be used to display voice connection data for a specific endpoint.

-v
   Displays verboise out for voice connections.

Example 1   This example adds a voice connection from subscriber's POTS line to a GR-303 interface with IG 1 and CRV 45.

```
zSH> voice add pots 1-4-5-0/voicefxs gr303 1/45
```

Example 2   This example displays the voice connections currently configured on the system and displays the voice connections for a specified POTS interface.

```
zSH> voice show
Subscriber end-point           Remote end-point              STA
------------------------------ ------------------------------ ---
1-1-1-0/voicefxs               1-1-1-0/fast VC 0/38 CID 16    ENA
1-1-2-0/voicefxs               1-1-1-0/fast VC 0/38 CID 17    ENA
Total number of voice connections : 2

zSH> voice show -l 1-9-9-0/voicefxs
Subscriber end-point           Remote end-point              STA
------------------------------ ------------------------------ ---
1-9-9-0/voicefxs               uplink4-0-32/ip  9824008       DIS
```

Example 3   This example adds a POTS to AAL2 connection over an ATM VCL with a VPI/VCI of 0/38 and a CID of 16:

```
zSH> voice add pots 1-1-1-0/voicefxs aal2 1-1-1-0/adsl vc 0/38 cid 16
Created subscriber 1/12
Created subscriber-voice 1/12/1
Created subscriber-voice-pots 7
```

```
Created aal2-cid-profile 13/0/38/16
Created subscriber-voice-aal2 8
```

Example 4   This example deletes a POTS subscriber profile:

```
zSH> voice delete pots 1-1-1-0/voicefxs
Deleted aal2-cid-profile 13/0/38/16

Deleted subscriber-voice 1/12/1 and its
subscriber-voice-xxx profiles
```

Example 5   This example creates a POTS to VOIP subscriber profile:

```
zSH> voice add pots 1-1-3-0/voicefxs voip 1-1-1-0/ip DN 5105220428
Created subscriber-voice 1/66/2
Created subscriber-voice-pots 1004
Created subscriber-voice-voip 1005
```

Example 6   This example creates a VOIP to ISDN subscriber profile:

```
zSH> voice add voip 1-1-1-0/ip DN 1055558724 isdnsig 1
Created subscriber 1/4
Created subscriber-voice 1/4/1
Created subscriber-voice-voip 1024
Created subscriber-voice-isdnsig 1025
```

Example 7   This example creates a POTS to GR303 subscriber profile with IG 1 and CRV 2:

```
zSH> voice add pots 1-8-1-0/voicefxs gr303 1/2
Created subscriber 1/13
Created subscriber-voice 1/13/1
Created subscriber-voice-pots 20
Created gr303-ig-crv 1/2
Created subscriber-voice-gr303 21
```

Example 8   This example creates an AAL2 to GR303 VP-switched connection between the uplink interface uplink1 and the voice gateway card:

```
zSH> voice add atm uplink1/atm vp 0/101 td 1/1 cid 1 alaw
gr303 1/1 type pots
Created subscriber-voice 1/51/2
Created aal2-cid 109/16/101/1/1
Created subscriber-voice-aal2 15
Created gr303-cid 1/1/2
Created subscriber-voice-gr303 16
```

Example 9   This example creates an ELCP to V5.2 VP-switched connection between the uplink interface uplink2 nd the voice gateway card:

```
zSH> voice  add elcp uplink2/atm vc 7/111 td 1/1 port 1
alaw v52 1/0
type isdn cpath 5
Created subscriber-voice 1/35/16
Created atm-vcl uplink2/atm/7/111
```

```
                         Created atm-vcl 1-3-3-0-aal2proxy/atm/0/32
                         Created atm-cc 8
                         Created aal2-vcl-profile 1-3-3-0-aal2proxy/atm/0/32
                         Created aal2-elcp-port 109/0/32/1/2
                         Created subscriber-voice-elcp-aal2 39
                         Created v52-user-port 1/0/3
                         Created subscriber-voice-v52 40
                         Created subscriber-voice 1/35/17
                         Created subscriber-voice-elcp-aal2 41
                         Created subscriber-voice-v52 42
                         Created subscriber-voice 1/35/18
                         Created subscriber-voice-elcp-aal2 43
                         Created subscriber-voice-v52 44
```

Example 10

```
zSH> voice show pots 1-7-9-0/voicefxs
INPUT:
        profile type: subscriber-voice-pots
        logical address: LGId: 330 PotsNumber: 1
        profile address: 39
subscriber-voice INFO:
        voice-connection-type       = VOIPTOPOTS
        voice-endpoint1-addr-index  = 40
        voice-endpoint2-addr-index  = 39
        voice-admin-status          = Enabled
        subscriber-voice addr: subId: 1 LGId: 3
subVoiceId: 5
MATCHING:
        profile type: subscriber-voice-voip
        logical address: LGId: 72 EndPtIdx: 40
        profile address: 40

zSH> voice show elcp 1-1-1-0/sonet VP 0/331 port 1 type pots
INPUT:
        profile type: subscriber-voice-elcp-aal2
        logical address: LGID: 93 VPI: 16 VCI: 331 PortId:1 PortType:1
isdnChannelId:0
        profile address: 1
subscriber-voice INFO:
        voice-connection-type       = ELCPAAL2TOV52
        voice-endpoint1-addr-index  = 1
        voice-endpoint2-addr-index  = 2
        voice-admin-status          = Enabled
        subscriber-voice addr: subId: 1 LGId: 25 subVoiceId: 1
MATCHING:
        profile type: subscriber-voice-v52
        logical address: IfName: IG-107 UserId: 20 IsdnBChannelId: 0
        profile address: 2

zSH> voice show v52 1/20 type pots
INPUT:
        profile type: subscriber-voice-v52
        logical address: IfName: IG-107 UserId: 20 IsdnBChannelId: 0
```

```
       profile address: 2
subscriber-voice INFO:
       voice-connection-type      = ELCPAAL2TOV52
       voice-endpoint1-addr-index  = 1
       voice-endpoint2-addr-index  = 2
       voice-admin-status          = Enabled
       subscriber-voice addr: subId: 1 LGId: 25
subVoiceId: 1
MATCHING:
       profile type: subscriber-voice-elcp-aal2
       logical address: LGID: 93 VPI: 16 VCI: 331 PortId:1
PortType:1 isdnChannelId:0
       profile address: 1

zSH> voice show elcp 1-1-1-0/sonet VP 1/2020 port 1 type isdn
INPUT:
       profile type: subscriber-voice-elcp-aal2
       logical address: LGID: 250 VPI: 17 VCI: 2020 PortId:1 PortType:2
isdnChannelId:0
       profile address: 11133
subscriber-voice INFO:
       voice-connection-type      = ELCPAAL2TOV52
       voice-endpoint1-addr-index  = 11133
       voice-endpoint2-addr-index  = 11134
       voice-admin-status          = Enabled
       subscriber-voice addr: subId: 1 LGId: 182 subVoiceId: 1862
MATCHING:
       profile type: subscriber-voice-v52
       logical address: IfName: IG-117 UserId: 20 IsdnBChannelId: 0
       profile address: 11134
INPUT:
       profile type: subscriber-voice-elcp-aal2
       logical address: LGID: 250 VPI: 17 VCI: 2020 PortId:1 PortType:3
isdnChannelId:1
       profile address: 11135
subscriber-voice INFO:
       voice-connection-type      = ELCPAAL2TOV52
       voice-endpoint1-addr-index  = 11135
       voice-endpoint2-addr-index  = 11136
       voice-admin-status          = Enabled
       subscriber-voice addr: subId: 1 LGId: 182 subVoiceId: 1863
MATCHING:
       profile type: subscriber-voice-v52
       logical address: IfName: IG-117 UserId: 20 IsdnBChannelId: 1
       profile address: 11136
INPUT:
       profile type: subscriber-voice-elcp-aal2
       logical address: LGID: 250 VPI: 17 VCI: 2020 PortId:1 PortType:3
isdnChannelId:2
       profile address: 11137
subscriber-voice INFO:
       voice-connection-type      = ELCPAAL2TOV52
       voice-endpoint1-addr-index  = 11137
       voice-endpoint2-addr-index  = 11138
```

```
              voice-admin-status         = Enabled
              subscriber-voice addr: subId: 1 LGId: 182 subVoiceId: 1864
      MATCHING:
              profile type: subscriber-voice-v52
              logical address: IfName: IG-117 UserId: 20 IsdnBChannelId: 2
              profile address: 11138

      zSH> voice show v52 2/20 type isdn
      INPUT:
              profile type: subscriber-voice-v52
              logical address: IfName: IG-117 UserId: 20 IsdnBChannelId: 0
              profile address: 11134
      subscriber-voice INFO:
              voice-connection-type       = ELCPAAL2TOV52
              voice-endpoint1-addr-index  = 11133
              voice-endpoint2-addr-index  = 11134
              voice-admin-status          = Enabled
              subscriber-voice addr: subId: 1 LGId: 182 subVoiceId: 1862
      MATCHING:
              profile type: subscriber-voice-elcp-aal2
              logical address: LGID: 250 VPI: 17 VCI: 2020 PortId:1 PortType:2
      isdnChannelId:0
              profile address: 11133
      INPUT:
              profile type: subscriber-voice-v52
              logical address: IfName: IG-117 UserId: 20 IsdnBChannelId: 1
              profile address: 11136
      subscriber-voice INFO:
              voice-connection-type       = ELCPAAL2TOV52
              voice-endpoint1-addr-index  = 11135
              voice-endpoint2-addr-index  = 11136
              voice-admin-status          = Enabled
              subscriber-voice addr: subId: 1 LGId: 182 subVoiceId: 1863
      MATCHING:
              profile type: subscriber-voice-elcp-aal2
              logical address: LGID: 250 VPI: 17 VCI: 2020 PortId:1 PortType:3
      isdnChannelId:1
              profile address: 11135
      INPUT:
              profile type: subscriber-voice-v52
              logical address: IfName: IG-117 UserId: 20 IsdnBChannelId: 2
              profile address: 11138
      subscriber-voice INFO:
              voice-connection-type       = ELCPAAL2TOV52
              voice-endpoint1-addr-index  = 11137
              voice-endpoint2-addr-index  = 11138
              voice-admin-status          = Enabled
              subscriber-voice addr: subId: 1 LGId: 182 subVoiceId: 1864
      MATCHING:
              profile type: subscriber-voice-elcp-aal2
              logical address: LGID: 250 VPI: 17 VCI: 2020 PortId:1 PortType:3
      isdnChannelId:2
              profile address: 11137
```

```
zSH> voice show voip voip-1-1/ip DN 7292004
INPUT:
        profile type: subscriber-voice-voip
        logical address: LGId: 126 EndPtIdx: 63
        profile address: 63
subscriber-voice INFO:
        voice-connection-type       = VOIPTOGR303
        voice-endpoint1-addr-index  = 63
        voice-endpoint2-addr-index  = 64
        voice-admin-status          = Enabled
        subscriber-voice addr: subId: 1 LGId: 112
subVoiceId: 32
MATCHING:
        profile type: subscriber-voice-gr303
        logical address: IgName: 1 Crv: 2004
        profile address: 64



zSH> voice show gr303 1/2004
INPUT:
        profile type: subscriber-voice-gr303
        logical address: IgName: 1 Crv: 2004
        profile address: 64
subscriber-voice INFO:
        voice-connection-type       = VOIPTOGR303
        voice-endpoint1-addr-index  = 63
        voice-endpoint2-addr-index  = 64
        voice-admin-status          = Enabled
        subscriber-voice addr: subId: 1 LGId: 112
subVoiceId: 32
MATCHING:
        profile type: subscriber-voice-voip
        logical address: LGId: 126 EndPtIdx: 63
        profile address: 63
```

Access Level admin

voice ring

Verify voice connection without placing a call. The **voice status** command can be used to verify the phone's ring status if the ringing cannot be heard.

Syntax `voice ring pots-intfc [ring-cadence] [time]`

- pots-intfc is the physical interface, for example 1-14-1-0/voicefxs.

- ring-cadence is r0 to r7, rc or rs. The default setting is rc.

- time is the number of seconds to ring the phone. This number must be greater than 0. The default time is 15 seconds.

Options **pots-intfc**
Specifies the physical interface, for example 1-14-1-0/voicefxs.

ring-cadence
  Optional ring-cadence of r0 to r7, rc or rs. The default setting is rc.

time
  Optionally, specifies the number of seconds to ring the phone. This number must be greater than 0. The default time is 15 seconds.

Example `voice ring 1-14-1-0/voicefxs`

See Also **voice status**

voice status

Display runtime status of voice ports. Only status for POTS connections is currently supported.

Syntax `voice status [-t] [type] [shelf [slot [port]]] [endpoint]`

Options **t**
  Displays only voice status totals.

type
  Displays voice status for the specified call type.

shelf
  Displays voice status for the specified shelf.

slot
  Displays voice status for the specified slot.

port
  Displays voice status for the specified port.

endpoint
  Displays voice status for the specified endpoint.

Example

```
zSH> voice status -t
Totals:  ports: 576, admin-state up: 4, active calls: 0


zSH> voice status
     port         term state   destination                      call state  hook  ring
     ----         ----------   -----------                      ----------  ----  ----
1-10-48-0/voicefxs   Inact Not provisioned                                  ON    Ring
1-10-47-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-46-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-45-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-44-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-43-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-42-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-41-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-40-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-39-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-38-0/voicefxs   Inact Not provisioned                                  ON   NoRing
1-10-37-0/voicefxs   Inact Not provisioned                                  ON   NoRing
```

```
1-10-36-0/voicefxs  Inact Not provisioned                          ON   NoRing
1-10-35-0/voicefxs  Inact Not provisioned                          ON   NoRing
1-10-34-0/voicefxs  Inact Not provisioned                          ON   NoRing
1-10-33-0/voicefxs  Inact Not provisioned                          ON   NoRing
1-10-32-0/voicefxs  Inact Not provisioned                          ON   NoRing
Type A<CR> to print all, <CR> to continue, Q<CR> to stop:


zSH> voice status 1 10 48

     port        term state  destination          call state hook  ring
     ----        ----------  -----------          ---------- ----  ----
1-10-48-0/voicefxs  Inact Not provisioned                       ON   RING
Totals:  ports: 1, admin-state up: 0, active calls: 0

zSH> voice status pots 1-6-1-0/voicefxs
     port        term state  destination          call state hook  ring
     ----        ----------  -----------          ---------- ----  ----
1-6-1-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-2-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-3-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-4-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-5-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-6-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-7-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-8-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-9-0/voicefxs     Inact Not provisioned                      ON  NoRing
1-6-10-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-11-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-12-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-13-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-14-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-15-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-16-0/voicefxs    Inact Not provisioned                      ON  NoRing
1-6-17-0/voicefxs    Inact Not provisioned                      ON  NoRing
Type A<CR> to print all, <CR> to continue, Q<CR> to stop: q
Totals:  ports: 576, admin-state up: 4, active calls: 0
```

voice status ig

Display real-time status of voice ports.

Syntax `voice ig gr303|v52 igName`

Options **ig**

Displays voice status for the specified GR303 or V5.2 interface group.

Example
```
zSH> voice status ig gr303 test
Status for gr303 interface group test:
Admin status = in service
Oper status = inoperable
Active calls = 0
Switch type = norteldms100
TMC primary state = out of service
```

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```
                        TMC secondary state = out of service
                        EOC primary state = out of service
                        EOC secondary state = out of service

                        zSH> voice status ig v52 one
                        Status for v52 interface group one:
                        Admin status = in service
                        Oper status = inoperable
                        Oper status cause = local disable
                        Active calls = 0
                        Switch vendor = ericsson
                         LinkId 0  TS 15  Channel status failed
                         LinkId 0  TS 16  Channel status failed
                         LinkId 1  TS 15  Channel status failed
                         LinkId 1  TS 16  Channel status failed
                         CPath 1    Oper status down
                         CPath 2    Oper status down
                         CPath 3    Oper status down
                         CPath 4    Oper status down
                         CPath 5    Oper status down
                        zSH>
```

voice vpdelete

The **voice vpdelete** command deletes the specified VP tunnel between the uplink interface and the voice gateway card.

Syntax `voice vpdelete interface vpi`

interface
    Specifies the uplink card interface.

vpi
    Specifies the VPI to be deleted.

Example This command deletes the VP tunnel for VP 0 between the uplink interface and the voice gateway card.

```
zSH>voice uplink/atm 0
```

Access Level admin

voice vpiadd

The **voice vpiadd** command builds the ATM VPI between the uplink card and the voice gateway card aal2proxy on the specified VP. This command is used for VP-switched connections

Syntax `voice vpiadd interface vpi gr303|v52 ig MaximumVcis`

interface
    Specifies the uplink card interface.

> **vpi**
> The VPI to be used for this connection.

> **gr303 | v52**
> Indicates whether the voice connection connects to a GR-303 or V5.2 protocol switch.

> **ig**
> Specifies the interface group (IG) to be used for this connection.
>
> For V5.2 and GR-303, the IG must already exist.

> *MaximumVcis*
> Specifies the maximum number of VCIs to be used for this VP-switched connection.

Example This example uses the uplink interface *uplink/atm* with VP *0*. The voice call type is V5.2 with IG 1. The maximum number of VCs allocated to the specified VP-switched VPI is 2004.

```
zSH>voice vpiadd uplink/atm 0 v52 1 2004
Created atm-vpi 1-3-3-0-aal2proxy/atm/20
Created atm-vpi uplink1/atm/7
```

Access Level admin

voice vpladd

The **voice vpladd** command builds the VPLs and cross connects for VP-switched connections. This command applies to the voice gateway card only.

Syntax **voice vpladd** *interface* **vpi** **td** *rx/rx* **gr303|v52** *ig*

> *interface*
> Specifies the uplink card interface.

> *vpi*
> The VPI to be used for this connection.

> **td** *rx/tx*
> The receive and transmit traffic descriptors to be used for this connection.

> **gr303 | v52**
> Indicates whether the voice connection connects to a GR-303 or V5.2 protocol switch:

> *ig*
> Specifies the interface group (IG) to be used for this connection.
>
> The IG must already exist.

Example This command builds atm-vpl uplink1/atm/0 on the uplink card using traffic descriptor 1/1 and atm-vpl 1-3-3-0-aal2proxy/atm/16 on the voice gateway card. VP 16 is the first available VP in the allowed VP range on the voice gateway card. The ATM cross connect number is 6.

```
zSH>voice vpladd uplink/atm 0 td 1/1 v52 1
Created atm-vpl 1-3-3-0-aal2proxy/atm/20
Created atm-vpl uplink1/atm/7
Created atm-cc 6
```

Access Level admin

voicegateway

The **voicegateway** command can add, show or delete voicegateway connections. The following types of voice connections are supported:

- VoATM: BLES to GR303 or V5.2

- VoATM: ELCP to V5.2

- VoIP: SIP-PLAR to GR303 or V5.2

Syntax `voicegateway add [-v] interface td traffic-descriptor ip-address`

add
   Add a voicegateway connection for the specified AAL5 proxy physical interface or slot number of the voicegateway card, traffic descriptor, and IP address. This command also automatically creates the voip-server-entry 255/255 for multiple SIP server support if it does not already exist.

interface
   A valid AAL5 proxy physical interface or slot number of the voicegateway card.

traffic-descriptor
   The desired traffic descriptor.

ip-address
   The IP address that is part of the configured ip-unnumbered-record.

Syntax `voicegateway delete interface`

interface
   A valid AAL5 proxy physical interface or slot number of the voicegateway card.

Syntax `voicegateway show interface`

interface
   A valid AAL5 proxy physical interface or slot number of the voicegateway card.

Example 1 These examples add a host on the voicegateway line card in slot 8 and assign the IP address 10.10.10.2.

```
zSH> voicegateway add 1-8-1-0/aal5proxy td 1 10.10.10.2
```

```
zSH> voicegateway add 8 td 1 10.10.10.2
```

Example 2 These examples display the voicegateway connection for the specified interface and AAL5 proxy or slot number of the voicegateway card.

```
zSH> voicegateway show 1-8-1-0/aal5proxy
Rd/Address          Interface                      Group  T Host Address
----------------------------------------------------
1 10.10.10.1        1-8-1-0-aal5proxy-0-32   0/32   0      S 10.10.10.2

zSH> voicegateway show 1-8-1-0/aal5proxy
Rd/Address          Interface                      Group  T Host Address
----------------------------------------------------
1 10.10.10.1        1-8-1-0-aal5proxy-0-32   0/32   0      S 10.10.10.2
```

Example 3 This example adds an ATM voice interface on the uplink card in slot 1, port 1 and assigns the virtual connection vpi 0, vci 139 and cid 48. The TDM connection uses GR303 protocol and interface group 1 with crv 131.

```
zSH> voice add aal2 1-1-1-0/ds1 vc 0/139 cid 48 gr303 1/131
Created subscriber-voice 1/266/6
Created aal2-cid-profile 340/0/32/48
Created subscriber-voice-aal2 171
Created gr303-ig-crv 1/131
Created subscriber-voice-gr303 172
```

Example 4 This example displays the voicegateway connection for the configured ATM interface:

```
zSH> voicegateway show aal2 1-1-1-0/ds1
Subscriber end-point      Remote end-point     Voice Prof Id    STA
----------------------    --------------------  -----------    ---
.......................
1-1-1-0/ds1 VC 0/139 CID 48  GR303 one/131           1/266/6        ENA
```

Example 5 These examples delete the voicegateway connection for the configured interface 1-8-1-0/aal5proxy. To remove the configured voice gateway connection, use the **voicegateway delete** command with the configured interface and aal5proxy or slot number of the voicegateway card. Do not attempt to manually remove or edit the related subscriber-voice profiles.

```
zSH>voicegateway delete 1-8-1-0/aal5proxy

zSH>voicegateway delete 8
```

Access Level admin

voice stat

The **voice stat** command displays the following statistics for voice connections.:

• POTS port

- Incoming Calls Completed

- Incoming Calls Blocked

- Outgoing Calls Completed

- Outgoing Calls Blocked

- Active Calls

- SIP UA/MGCP

    - Incoming Calls Completed

    - Incoming Calls Blocked

    - Outgoing Calls Completed

    - Outgoing Calls Blocked

    - Active Calls

- Card and System Call Statistics

    - Incoming Calls Completed

    - Incoming Calls Blocked

    - Outgoing Calls Completed

    - Outgoing Calls Blocked

    - Active Calls

Syntax `voicestat type [`*`shelf slot`*`] | [`*`subscriber endpoint index`*`] | [endpt-info]`

Type
Specifies voice statistics to be displayed for system, card, or subscriber.

Shelf
For card type, enter the shelf number of the card.

Slot
For card type, enter the slot number of the card.

Subscriber endpoint index
End point index for a subscriber. The subscriber endpoint index can be displayed using the **list subscriber-voice** command.

Endpt-info
Endpoint of a voice connection. For example, gr303 1/92 for a GR-303 voice endpoint or pots 1-7-3-0/voicefxs for a POTS voice endpoint.

Example 1 This example displays voice statistics for the current system.

```
zSH> voicestat system
zSH>  ******* Voice stats ********
Incoming blocked              0
Incoming completed            0
Outgoing blocked              0
Outgoing completed            0
```

```
                           Active calls                    5
```

Example 2 This example displays voice statistics for the card in shelf 1 and slot 8.

```
zSH> voicestat card 1 8
zSH>  ******* Voice stats ********
Incoming blocked                0
Incoming completed              0
Outgoing blocked                0
Outgoing completed              0
Active calls                    5
```

Example 3 This example displays voice statistics for specified POTS subscriber with index 3. Use the **list subscriber-voice** commands to list the current POTS voice subscribers and the subscriber index numbers.

```
zSH> list subscriber-voice-pots
subscriber-voice-pots  1
subscriber-voice-pots  3
subscriber-voice-pots  5
subscriber-voice-pots  7
4 entries found.

zSH> voicestat subscriber 3
 ******* Subscriber Voice Stats ********
 Incoming blocked                0
 Incoming completed              2
 Outgoing blocked                0
 Outgoing completed              0
 Active calls                    0
```

Access Level admin

W

who

Displays the names of all users currently logged into the system.

Syntax `who`

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **logout**

whoami

Displays the username of the current session.

Syntax `whoami`

Access Level user

Products BAN, MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723, Sechtor 100A, Z-Edge 64

See Also **logout**, **su**

Z

zrgconfig

For the ZRG 800 series devices, you must assign the VPI to be used for the ATM connections. If you are connecting to a MALC PON OLT card, each ZRG connected must have a unique VPI/VCI pair. (ZRG devices connected to different PON OLT cards can use the same VPI/VCI.) You can assign a VPI from 1 to 32.

Optionally, you can use this command to provision the ZRG to support VOIP calls.

Syntax `zrgcfg pon vpi [voatm | voip]`

Options **voatm**
Configures the **card-line-type** in the **card-profile** as **pots-pv** for packet voice.

voip
Configures the **card-line-type** in the **card-profile** as **pots** for non-packet voice.

Example To have the ZRG autocreate the necessary voice, data, and video profiles using VPI 1, enter the following command:

```
zSH> zrgcfg pon 1
```

Notes If there are pre-existing voice connections, you must delete them before changing to VOIP mode. For example:

```
zSH> voice delete pots 1-1-1-0/voicefxs
Deleted aal2-cid-profile 13/0/39/16
Deleted subscriber-voice 1/6/1 and its
subscriber-voice-xxx profiles
```

Products ZRG

ALPHABETIC LIST OF PARAMETERS

3 P**ARAMETERS**

This chapter provides a reference to the Zhone CLI parameters.

ADSL

adslAlarmConfProfile

This parameter is used internally by the system.

Access This parameter is read-only.

Location **adsl-profile**

adslChannelMode

Specifies the channelization of the ADSL modem.

Values **fastonly**
No channelization, fast transmission mode.

interleavedonly
No channelization, interleaved transmission mode.

fastAndInterleaved
Unsupported.

fastOrInterleaved
Unsupported.

Default **fastonly**

Access This parameter is read-write.

Location **adsl-profile**

Notes G.lite supports only interleaved mode.

adslLineDTMConfMode

Discrete Multi-Tone parameter that selects whether there is overlap
(echoCancel) or no overlap (freqDivMux) of bins.

Access This parameter is read-write.

Location **adsl-profile**

adslMaxDownstreamToneIndex

Specifies the maximum downstream active tone.

Values **32 (128KHz) to 511 (2044KHz)**
Each value represents 4KHz.

Default **511**

Location **adsl-profile**

Notes • Changing this value causes the DSL modems to retrain.

• The parameter is only supported on single-slot ADSL (AC5) card

adslMaxUpstreamToneIndex

Specifies the maximum upstream active tone.

Values **6 (24KHz) to 30 (120KHz)**
Each value represents 4KHz.

Default **30**

Location **adsl-profile**

Notes • Changing this value causes the DSL modems to retrain.

• The parameter is only supported on single-slot ADSL (AC5) card

adslMinDownstreamToneIndex

Specifies the minimum downstream active tone.

Values **32 (128KHz) to 255 (1020KHz)**
Each value represents 4KHz.

Default **32**

Location **adsl-profile**

Notes • Changing this value causes the DSL modems to retrain.

• The parameter is only supported on single-slot ADSL (AC5) card

adslMinUpstreamToneIndex

Specifies the minimum upstream active tone.

Values **6 (24KHz) to 30 (120KHz)**
Each value represents 4KHz.

Default **6**

Location **adsl-profile**

Notes • Changing this value causes the DSL modems to retrain.

• The parameter is only supported on single-slot ADSL (AC5) card

adslNTRModeEnabled

Enables or disables network timing recovery (NTR) mode.

Values **true**
NTR mode enabled.

false
NTR mode disabled.

Default **true**

Access This parameter is read-write.

Location **adsl-profile**

adslPotsBypassRelayMaxDuration

The maximum duration in seconds that an ADSL POTS low-pass filter bypass relay will remain active (closed). The relay will automatically return a line back to normal (open) mode when this timer has expired.

Values **1 to 300**

Default **60**

Access This parameter is read-write.

Location **adsl-profile**

Notes This object is only valid for MALC ADSL-SPLTR-32 cards.

This parameter can only be set from ZMS.

Products MALC

AdslTrellisModeEnabled

Enables or disables trellis mode on the ADSL interface.

Values **true**

false

Default **true**

Access This parameter is read-write.

Location **adsl-profile**

AdslTransmissionMode

Specifies the line transmission mode for each ADSL line.

Values	**autonegotiatemode**
	Automatically negotiates all supported transmission modes. The modem uses the G.hs protocol to negotiate a transmission mode in this order: T1.413, then G.dmt, then G.lite.
	fullratemode
	Automatically negotiates full-rate modes (G.dmt and T1 mode). G.dmt has priority over T1 mode.
	glitemode
	The modem negotiates only G.lite mode.
	t1mode
	The modem negotiates only full-rate T1 mode. Use this value if the Zhone device is connecting to full rate T1.413 issue 2 modems.
	gdmtmode
	The modem negotiates only G.dmt mode.
	ghsmode
	The modem negotiates only G.dmt and G.lite modes. G.dmt has priority over G.lite.
	adsl2Mode
	the modem negotiates ADSL2 only. (Supported on ADSl 48 port cards only).
	adsl2PlusMode
	the modem negotiates ADSL2+ only. (Supported on ADSl 48 port cards only).
Default	**autonegotiate**
Access	This parameter is read-write.
Location	**adsl-profile**

downshiftSnrMgn

The configured signal-to-noise margin for rate downshift. If the noise margin falls below this level, the modem attempts to decrease its transmit rate.

Values	**0 to 310 (in tenths dBs)**
Default	**0**
Access	This parameter is read-write.
Location	**adsl-co-profile**, **adsl-cpe-profile**
Notes	If rate adaption is not enabled on the interface, this parameter is 0 (zero).

fastMaxTxRate

Configured maximum transmit rate (bps) for ADSL Fast channels.

Values	**8160Kbps (1536Kbps for G.Lite) downstream 896Kbps (512Kbps for G.Lite) upstream, 12Mbps for S=1/2**
Default	**8160kbps**
Access	This parameter is read-write.
Location	**adsl-co-profile**, **adsl-cpe-profile**
Notes	**fastMaxTxRate** must be greater than **fastMinTxRate**.

fastMinTxRate

Minimum transmit rate (bps) for channels configured for fast transmission mode.

Values	**32Kbps to 8160Kbps (1536Kbps for G.Lite) downstream 32Kbps to 896Kbps (512Kbps for G.Lite) upstream**
Default	**0**
Access	This parameter is read-write.
Location	**adsl-co-profile**, **adsl-cpe-profile**
Notes	**fastMinTxRate** must be less than **fastMaxTxRate**.
	See **rateChanRatio** for information regarding RADSL mode and ATUC transmit rate for ATUR receive rates.

initFailureTrapEnable

Enables and disables the InitFailureTrap.This trap controls whether line up or line down traps are sent while the system is booting up.

Values	**enable**
	disable
Default	**disable**
Access	This parameter is read-write.
Location	**adsl-co-profile**

interleaveMaxTxRate

Maximum transmit rate (bps) for channels configured for interleaved transmission mode.

Values	**32Kbps to 8160Kbps (1536Kbps for G.Lite) downstream 32Kbps to 896Kbps (512Kbps for G.Lite) upstream, 12Mbps for S=1/2**
Default	**8160kbps**
Access	This parameter is read-write.
Location	**adsl-co-profile**, **adsl-cpe-profile**

Notes	**interleaveMaxTxRate** must be greater than interleaveMinTxRate.
	See **rateChanRatio** for information regarding RADSL mode and ATUC transmit rate for ATUR receive rates.

interleaveMinTxRate

Minimum transmit rate (bps) for channels configured for interleaved transmission mode.

Values	**32Kbps to 8160Kbps (1536Kbps for G.Lite) downstream 32Kbps to 896Kbps (512Kbps for G.Lite) upstream**
Default	**0**
Access	This parameter is read-write.
Location	**adsl-co-profile**, **adsl-cpe-profile**
Notes	**interleaveMinTxRate** must be less than **interleaveMaxTxRate**.
	See **rateChanRatio** for information regarding RADSL mode and ATUC transmit rate for ATUR receive rates.

maxInterleaveDelay

Maximum interleave delay for this channel. Interleave delay applies only to the interleave channel and defines the mapping (relative spacing) between subsequent input bytes at the interleaver input and their placement in the bit stream at the interleaver output. Larger numbers provide greater separation between consecutive input bytes in the output bit stream allowing for improved impulse noise immunity, but at the expense of payload latency.

Values	**0**
	0.5 ms
	1
	1 ms
	2
	2 ms
	4
	4 ms
	8
	8 ms
	16
	16 ms
	32
	32 ms
	63
	63 ms

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

maxSnrMgn

Maximum acceptable signal to noise margin. If the noise margin rises above this level, the modem reduces its power output to optimize its operation.

Values **0 to 310 (in tenths dBs)**

Default **310**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

minDownshiftSnrMgn

Minimum time that the current signal to noise margin is below **DownshiftSnrMgn** before a rate downshift occurs.

Values **0 to 16383 seconds**

Default **0**

Access This parameter is read-write.

Location   **adsl-cpe-profile**

Notes If rate adaption is not enabled on the interface, this parameter is 0 (zero).

Unsupported.

minDownshiftTime

Minimum time that the current margin is below **DownshiftSnrMgn** before a downshift occurs.

Values **0 to 16383 seconds**

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

Notes If rate adaption is not enabled on the interface, this parameter is 0 (zero).

This parameter is not supported.

minSnrMgn

Minimum acceptable signal-to-noise margin. If the noise margin falls below this level, the modem attempts to increase its power output. If that is not possible, the modem will attempt to reinitialize or shut down.

Values **0 to 310 tenths of dBs**

Default **0**

Access This parameter is read-write.

Location **adsl-cpe-profile**

minUpshiftSnrMgn

Minimum time that the current margin is above **UpshiftSnrMgn** before an upshift occurs.

Values **0 to 16383 seconds**

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

Notes If rate adaption is not enabled on the interface, this parameter is 0 (zero).

rateChanRatio

The percentage of excess bit rate that the ADSL modem will distribute to the fast channel. The ratio is defined by the following formula:

[**fastMinTxRate** / (**fastMinTxRate** + **interleaveMinTxRate**)] x 100.

For example, a ratio of 50 percent means that 50 percent of the additional bit rate (in excess of the fast minimum plus the interleaved minimum bit rate) will be assigned to the fast channel, and 50 percent to the interleaved channel.

Values **50**

Default **50**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

Notes See ADSL Forum TR-005 [3] for more information.

rateMode

The transmit rate adaptation configured on this modem.

Values **fixed**
> The rate is determined by the **fastMaxTxRate** or the **interleaveMaxTxRate**. If the line is unable to support the specified line rate, it fails to connect.

adaptatstartup
> The rate is negotiated at startup and remains fixed. The modem speed is determined by the **fastMaxTxRate** or **interleaveMaxTxRate** parameters. If the line is able to support a higher rate, the rate above the minimum is distributed between the fast and interleaved paths in the ratio specified in the **rateChanRatio** parameter.

adaptatruntime
> The rate is negotiated dynamically and can vary between the maximum and minimum configured rates.

Default **adaptatruntime**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

Notes See ADSL Forum TR-005 [3] for more information.

reachExtendedAdsl2

Enables and disables extended reach for ADSL2 long loops.

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

targetSnrMgn

Target signal to noise margin. This is the noise margin the modem must achieve with a Bit Error Rate (BER) of 10^{-7} or better to successfully complete initialization.

Values **0 to 310 tenths of dBs**

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

threshFastRateDown

Applies to Fast channels only. The change in the configured rate that causes the system to send an adslAturRateChangeTrap.

The system sends a trap whenever:

ChanCurrTxRate <= ChanPrevTxRate minus the value of this parameter.

Default **0**

0 disables the trap.

Access This parameter is read-write.

Location **adsl-co-profile**

thresh15MinESs

The number of Errored seconds encountered by an ADSL interface within any given 15 minutes performance data collection period that will cause the SNMP agent to send an adslAtucPerfESsThreshTrap (CO) or adslAturPerfESsThreshTrap (CPE) trap. One trap is sent per interval per interface.

Values **0 to 900 seconds**
0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

thresh15MinLofs

The number of Loss of Frame Seconds encountered by an ADSL interface within any given 15 minutes performance data collection period that will cause the SNMP agent to send an adslAtucPerfLofsThreshTrap (CO) or adslAturPerfLofsThreshTrap (CPE) trap. One trap is sent per interval per interface.

Values **0 to 900 seconds**
0 disables the trap.

Default **0**

Location **adsl-co-profile**, **adsl-cpe-profile**

thresh15MinLols

The number of Loss of Link seconds encountered by an ADSL interface within any given 15 minutes performance data collection period that will cause the SNMP agent to send an adslAtucPerfLolsThreshTrap (CO) or adslAturPerfLolsThreshTrap (CPE) trap. One trap is sent per interval per interface.

Values **0 to 900 seconds**
0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

thresh15MinLoss

The number of Loss of Signal seconds encountered by an ADSL interface within any given 15 minutes performance data collection period that will cause the SNMP agent to send an adslAtucPerfLossThreshTrap (CO) or adslAturPerfLossThreshTrap (CPE) trap. One trap is sent per interval per interface.

Values **0 to 900 seconds**
> 0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

thresh15MinLprs

The number of Loss of Power seconds encountered by an ADSL interface within any given 15 minutes performance data collection period that will cause the SNMP agent to send an adslAtucPerfLprsThreshTrap (CO) or adslAturPerfLprsThreshTrap (CPE) trap. One trap is sent per interval per interface.

Values **0 to 900 seconds**
> 0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

threshFastRateUp

Applies to Fast channels only. The change in the configured rate that causes the system to send an adslAtucRateChangeTrap.

The system sends a trap whenever:

ChanCurrTxRate <= ChanPrevTxRate minus the value of this object.

Values **0**
> 0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

threshInterleaveRateDown

Applies to Interleave channels only. The change in the configured rate that causes the system to send an adslAtucRateChangeTrap.

The system sends a trap whenever:

ChanCurrTxRate <= ChanPrevTxRate minus the value of this object.

Values **0**
> 0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

threshInterleaveRateUp

Applies to Interleave channels only. The change in the configured rate that causes the system to send an adslAturRateChangeTrap. The system sends a trap whenever: ChanCurrTxRate >= ChanPrevTxRate plus the value of this object.

Values **0**
> 0 disables the trap.

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

upshiftSnrMgn

The configured signal to noise margin for rate upshift. If the noise margin rises above this level, the modem attempts to increase its transmit rate.

Values **0 to 310 tenths of dBs**

Default **0**

Access This parameter is read-write.

Location **adsl-co-profile**, **adsl-cpe-profile**

Notes If rate adaption is not enabled on the interface, this parameter is 0 (zero).

This parameter is not supported.

ATM

admin_status

Specifies the desired administrative state of the virtual channel link (VCL).

Values **up**

down

Default **down**

Location **atm-vcl**

Notes This parameter should be set to tell the system whether or not to establish the connection.

The admin status must be set to down before changing or deleting VCLs.

admin-status

Administrative status of the link.

Values **up**

down

Default **down**

Location **aal2-cid-profile**, **atm-cc**

algorithm

The AAL2 encoding algorithm.

Values **G.711**

Pulse Code Modulation (PCM). Two encoding laws are recommended, referred to as A-law and Mu-law.

G.722

Sub-Band Adaptive Pulse Code Modulation (SB-ADPCM).

G.723.1

Not currently supported.

G.726

Adaptive Pulse Code Modulation (ADPCM).

G.727

Embedded Adaptive Pulse Code Modulation (EADPCM).

G.728

Low Delay Code Excited Linear Prediction (LD-CELP).

G.729-8

EDU format.

G.729
Silence Insertion Descriptor (SID) packet format.

G.729-6.4
Encoding data unit format.

G.729-12
Encoding data unit format for the forward adaptive mode.

Generic SID
Generic SID packet format.

Default **G.711**

Location **aal2-audio-profile**

Notes Refer to STR-VMOA-LES-01-00 Annex A, I.366.1 7.7.1, and I.366.2 Annex B through I for more information.

app-id

Application Identifier. It specifies the protocol used between the IAD and the ATM switch.

Values **caspotsonlynoelcp**
Loop Emulation Service using Channel Associated Signaling (CAS) without Emulated Loop Control Protocol (ELCP), which is used for POTS.

dss1brionlynoelcp
Loop Emulation Service using Digital Subscriber Signaling System number 1 (DSS1) in support of ISDN BRI without ELCP.

dss1brionlyelcp
Loop Emulation Service using Digital Subscriber Signaling System number 1 (DSS1) in support of ISDN BRI with ELCP.

pstnpotsonlyelcp
Loop Emulation Service using PSTN signalling (POTS only) with ELCP.

Default **caspotonlynoelcp**

Location **aal2-vcl-profile**

atmVplAdminStatus

Administrative status of the VPL.

Values **up**

down

Default **down**

Location **atm-vpl**

Notes This parameter should be set to tell the system whether or not to establish the connection.

The admin status must be set to down before changing or deleting VPLs.

atmVplCastType

Type of connection.

Values **p2p**
Point-to-point.

p2mproot
Point-to-multipoint root. Currently not supported.

p2mpleaf
Point-to-multipoint leaf. Supported for IP video connections only.

Location **atm-vpl**

atmVplConnKind

The type of VCL.

Values **pvc**

Location **atm-vpl**

atmVplReceiveTrafficDescrIndex

Specifies the ATM traffic descriptor which applies to the receive direction of this VPL.

Values **The index value of an existing atm-traf-descr.**

Location **atm-vpl**

Notes Currently this value must be set equal to the value used for the **atmVplTransmitTrafficDescrIndex**.

Traffic descriptors used in active VPLs cannot be modified. You must bring down the VPL before you can modify the traffic descriptor.

See Also **atmVplTransmitTrafficDescrIndex**

atmVplTransmitTrafficDescrIndex

Specifies the ATM traffic descriptor which applies to the transmit direction of this VPL.

Values **The index value of an existing atm-traf-descr.**

Location **atm-vpl**

Notes Currently this value must be set equal to the value used for the **atmVplReceiveTrafficDescrIndex**.

Traffic descriptors used in active VPLs cannot be modified. You must bring down the VPL before you can modify the traffic descriptor.

See Also **atmVplReceiveTrafficDescrIndex**

audio-profile-identifier

An index number that refers to the type of audio service provided.

Values **7**

For PCM-64, ADPCM-32 and silence-suppression
(pcm64Adpcm32Silence). Supported on the BAN, MALC, Raptor,
Sechtor 100A, Z-Edge.

8

For PCM-64 and silence (pcm64Silence). Supported on the Sechtor
100A, Z-Edge.

9

For PCM-64 without silence (pcm64). Supported on the BAN, Sechtor
100A.

10

For PCM-64, ADPCM-32 without silence (pcm64Adpcm32). Supported
on the BAN, Sechtor 100A.

Location **aal2-vcl-profile**

Notes For pre-defined audio profiles, the range of valid identifier values is 1 to 255,
inclusive. If the audio profile is user-defined, the range of valid identifiers is
256 to 512.

audio-service

The audio-service setting is inherited by the CIDs attached to the AAL2 VCL.

Values **enabled**

Audio services enabled, including echo cancellation, silence suppression,
and compression algorithms.

disabled

Audio services disabled. This is used for data and video calls.

enabledechocanceloff

Audio service enabled with echo cancellation and silence suppression
disabled.

enableddynamic

Audio service enabled with ability to dynamically disable silence
suppression, silence detection, echo cancellation, and compression
algorithms on a per-call basis.

Default **enabled**

Location **aal2-vcl-profile**, **aal2-cid-profile**

cas

Channel Associated Signaling (CAS). This setting is inherited by the CIDs attached to the AAL2 VCL.

Values **enabled**

disabled

Default **enabled**

Location **aal2-vcl-profile**, **aal2-cid-profile**

cac-divider

Enables oversubscription for an ATM VCL. During CAC calculations, the system divides the SCR (for nrt-VBR or rt-VBR VCLs) bandwidth by the value specified in the **cac-divider**. It then uses that value to determine if the VCL can be created.

For example, to configure a 4:1 oversubscription, set **cac-divider** to 4.

Default **1**

Location **atm-traf-descr**

cc-index

A unique value used to identify the cross connect.

Location **atm-cc**

fault-detection-type

Used to determine faults on the VCL.

Values **disabled**
Fault detection is disabled.

oamF5Loopback
On POTS-based AAL2 connections, the unit sends an OAM F5 loopback if the CAS does not refresh after 10 seconds. If there is no response to the F5 loopback, the VCL is blocked and a trap is generated.

On ISDN-based AAL2 connections, there is no CAS refresh; the unit sends an F5 loopback every 5 seconds. If there is no response to the F5 loopback, the VCL is blocked and a trap is generated.

F5 loopbacks on AAL5 connections are not supported.

Default **disabled**

Access This parameter is read-write.

Location **atm-vcl**

frame-mode-data

The transport of data units as specified in the transmission error detection service of Recommendation I.366.1. This setting is inherited by the CIDs attached to the AAL2 VCL.

Values	**enabled**
	disabled
Default	**disabled**
Location	**aal2-vcl-profile**, **aal2-cid-profile**

high-if-index

The index (in the form *shelf-slot-port-subport-interface*/atm or a user-defined string) of the ATM interface for this cross connect. The **high-if-index** is arbitrary, but by convention it indicates the ATM interface with a numerically higher ifIndex value than the other ATM interface identified in the same cross connect.

Location	**atm-cc**
Notes	The **low-if-index** and the **high-if-index** cannot be equal.

high-vci

The VCI value associated with the interface specified in the **high-if-index**. For VP switched connections, specify 0.

Location	**atm-cc**

high-vpi

The VPI value associated with the interface specified in the **high-if-index**.

Location	**atm-cc**

low-if-index

The index (in the form *shelf-slot-port-subport-interface*/atm or a user-defined string) of the ATM interface for this cross connect. The **low-if-index** is arbitrary, but by convention it indicates the ATM interface with a numerically lower ifIndex value than the other ATM interface identified in the same cross connect.

Location	**atm-cc**
Notes	The **low-if-index** and the **high-if-index** cannot be equal.

low-vci

The VCI value associated with the interface specified in the **low-if-index**. For VP switched connections, specify 0.

Location   **atm-cc**

low-vpi

The VPI value associated with the interface specified in the **low-if-index**.

Location   **atm-cc**

max-cid-for-aal2-user-channels

Maximum Channel Identifier (max-cid) value for AAL2 user channels as defined by the ATM Forum.

Values   **For an app-id values of caspotsonlynoelcp and dss1brionlynoelcp, the following Channel Identification (CID) value ranges apply:**

CID 16..127: Bearer channels for POTS

CID 128..159: D-channels for ISDN BRI

CID 160..223: B-channels for ISDN BRI

Location   **aal2-vcl-profile**

Notes   For more information, refer to the ATM Forum AF-VMOA-0145.000.

max-cps-sdu-size

Specifies the AAL2 payload in octets that can be sent and received.

Values   **64 octets**

45 octets

Default   **45**

Location   **aal2-vcl-profile**

max-length-frame

The maximum length of the frame that this channel will accept.

Values   **This setting is inherited by the CIDs attached to the AAL2 VCL.**

Location   **aal2-vcl-profile**, **aal2-cid-profile**

max-number-multiplex-channels

The maximum number of channels that can be multiplexed within the VCL.

Values	**1 to 259, inclusive**
Default	**239**
Location	**aal2-vcl-profile**

max-sdu-length

The maximum size of the SDU, in octets, that is allowed to be reassembled.

Values	**1 to 65568, inclusive**
Location	**aal2-vcl-profile**, **aal2-cid-profile**

min-cid-for-aal2-user-channels

The minimum number of Channel Identifiers (CID) allowed for AAL2 user channels.

Values	**For an app-id values of caspotsonlynoelcp and dss1brionlynoelcp, the following Channel Identification (CID) value ranges apply:**
	CID 16..127: Bearer channels for POTS
	CID 128..159: D-channels for ISDN BRI
	CID 160..223: B-channels for ISDN BRI
Location	**aal2-vcl-profile**
Notes	For more information, refer to the ATM Forum AF-VMOA-0145.000.

pcm-encoding

The type of Pulse Code Modulation encoding used.

Values	**muLaw**
	aLaw
Location	**aal2-vcl-profile**, **aal2-cid-profile**

pkt-time

Packet time in tenths of milliseconds.

Values	**50 to 110, inclusive**
Default	**55**
Location	**aal2-audio-profile**

preferred-ap-index

Defines the preferred audio encoding format.

Values **1**

Used for G.711 encoding

2

Used for G.726 encoding

Default **1**

Location **aal2-cid-profile**

ras-timer

The maximum time allowed for ReASsembly of a SSSAR-SDU.

Values **milliseconds**

Location **aal2-vcl-profile**, **aal2-cid-profile**

receive_traffic_descr_index

Specifies the ATM traffic descriptor which applies to the receive direction of this VCL.

Values **The index value of an existing atm-traf-descr.**

Location **atm-vcl**

Notes Currently this value must be set equal to the value used for the **transmit_traffic_descr_index**.

Traffic descriptors used in active VCLs cannot be modified. You must bring down the VCL before you can modify the traffic descriptor.

See Also **transmit_traffic_descr_index**

sdu-multiples

Indicates the multiples of the service data unit (SDU) for each algorithm that occurs. SDUs for audio are defined in relation to the profile of encoding formats adopted on an AAL type 2 connection. Each algorithm that occurs in a given profile may appear in multiple entries corresponding to packets of different lengths. These packet lengths align in a simple sequence, where each is an integral multiple of the smallest packet length that occurs for the algorithm (at a given bit rate). The smallest packet length is the SDU of the algorithm, in relation to the given profile.

Values **1 to 8**

Default **1**

Location **aal2-audio-profile**

See Also algorithm

sscs-type

The Service Specific Convergence Sublayer (SSCS) is the portion of the convergence sublayer that is dependent upon the type of traffic that is being converted.

Values **i3661**

For channels that carry control and management plane traffic (such as CCS, ELCP, ISDN D channels, and LES-EOC).

i3662

For channels carry media streams (such as POTS or ISDN B channels).

Default **i3662**

Location **aal2-cid-profile**

td_index

This parameter is used by the **atm-vcl** profile to identify a traffic descriptor.

Location **atm-traf-descr**

td_frame_discard

Enables and disable early-packet-discard (EPD) and partial-packet-discard (PPD). This allows selective discarding of all cells in a frame if one cell is lost or discarded.

In EPD, the ATM interface monitors the AAL5 traffic and discards an entire data frame if its output buffers do not have the space to process it. In PPD, the ATM interface drops the remaining cells of the packet if other cells of the packet have already been dropped. Both of these techniques increase the efficiency of the data transfer by dropping frames that have already been determined to be errored and will have to be retransmitted.

Values **true**

Indicates that the network is requested to treat data for this connection, in the given direction, as frames (that is, AAL5 CPCS PDUs) rather than as individual cells. While the precise implementation is network-specific, this treatment may involve discarding entire frames during congestion, rather than a few cells from many frames.

false

This is the recommended setting for voice connections.

Default **false**

Location **atm-traf-descr**

td_param1

The peak cell rate (PCR) of the interface. Once the peak cell rate (PCR) has been set, traffic policing ensures that the PCR limitations are enforced. The system will discard cells of incoming (ingress) traffic that exceed the PCR.

Location **atm-traf-descr**

Notes • Refer to the documentation that came with your device for information about supported traffic parameters.

• The **td_param1** and **td_param2** parameters in the **atm-traf-descr** profile must be set to one of the configured rates in the **atm-vcl-param** profile.

• Refer to the following specifications for more information about PCR:

– ATM Forum, ATM User-Network Interface, Version 3.0 (UNI 3.0) Specification, 1994.

– ATM Forum, ATM User-Network Interface, Version 3.1 (UNI 3.1) Specification, November 1994.

td_param2

Sustained cell rate (SCR) of the interface. Refer to the documentation that came with your device for information about supported traffic parameters.

Location **atm-traf-descr**

Notes The **td_param1** and **td_param2** parameters in the **atm-traf-descr** profile must be set to one of the configured rates in the **atm-vcl-param** profile.

td_param3

Maximum burst size (MBS) of the interface. Refer to the documentation that came with your device for information about supported traffic parameters.

Location **atm-traf-descr**

td_param4

Cell delay variation tolerance (CDVT) of the interface. Refer to the documentation that came with your device for information about supported traffic parameters.

Location **atm-traf-descr**

td_param5

Currently not supported.

Location **atm-traf-descr**

td_service_category

The ATM service category. Zhone devices support currently support the following classes of traffic:

- Unspecified bit rate (UBR) for data. Supported on the BAN, MALC, Raptor, Z-Edge.

- Constant bit rate (CBR) for voice. Supported on the MALC, Raptor, Sechtor 100A, Z-Edge.

- Real time variable bit rate (rt-VBR) for voice or data, depending on the application. Supported on the BAN, MALC, Raptor, Sechtor 100A.

- Non-real time variable bit rate (nrt-VBR) for voice or data, depending on the application. Supported on the MALC.

Location **atm-traf-descr**

td_type

Traffic descriptor type. Note that not all products support all traffic types. Refer to the documentation that came with your device for information about supported traffic categories.

Values **atmNoClpNoScr**
(OID 1.3.6.1.2.1.37.1.1.2)
No CLP and no Sustained Cell Rate.

atmClpTaggingNoScr
(OID 1.3.6.1.2.1.37.1.1.4)
CLP with tagging and no Sustained Cell Rate.

atmClpNoTaggingScr
(OID 1.3.6.1.2.1.37.1.1.6)
CLP with no tagging and Sustained Cell Rate.

atmClpTaggingScr
(OID 1.3.6.1.2.1.37.1.1.7)
CLP with tagging and Sustained Cell Rate.

atmClpTransparentNoScr
(OID 1.3.6.1.2.1.37.1.1.9)
CLP transparent and no Sustained Cell Rate.

atmClpTransparentScr
(OID 1.3.6.1.2.1.37.1.1.10)
CLP transparent and Sustained Cell Rate.

atmNoClpNoScrCdvt
(OID 1.3.6.1.2.1.37.1.1.12)
No CLP and no Sustained Cell Rate.

atmClpNoTaggingScrCdvt
(OID 1.3.6.1.2.1.37.1.1.14)
> CLP with no tagging, Sustained Cell Rate.

atmClpTaggingScrCdvt
(OID 1.3.6.1.2.1.37.1.1.15)
> CLP with tagging, Sustained Cell Rate.

Location **atm-traf-descr**

timer-cu

The **timer-cu** is always set to 0. Each transmitted ATM contains one AAL2 packet.

Values **0**

Location **aal2-vcl-profile**

traffic-container-index

This parameter associates a VCL with a traffic container, and is used to retrieve PON channel provisioning information.

Location **atm-vcl**

transmit_traffic_descr_index

Specifies the ATM traffic descriptor which applies to the transmit direction of this VCL.

Values **The index value of an existing atm-traf-descr.**

Location **atm-vcl**

Notes Currently this value must be set equal to the value used for the **receive_traffic_descr_index**.

Traffic descriptors used in active VCLs cannot be modified. You must bring down the VCL before you can modify the traffic descriptor.

See Also **transmit_traffic_descr_index**

trnk-vcl-rate

This parameter is used to describe the minimum guaranteed rate for a VCL which is bound to this traffic descriptor for BAN ATM Trunk cards. It is applicable only for the rt-VBR service category.

Access This parameter is read-write.

Location **atm-traf-descr**

Notes The **trnk-rate-vcl** parameter in **atm-traf-descr** profiles is only used on BAN release 1.5.2. In other releases, it does not apply.

trunk-type

Specifies supervisory line states, for example, on-hook, off-hook, idle, and ringing. The **trunk-type** used for the IAD (Z-Edge) must match the ATM switch trunk type. This parameter is used only for **app-id** values of **caspotsonlynoelcp**.

Values	**unknown**
	loopstart
	groundstart
	loopreversebattery
Default	**loopstart**
Location	**aal2-vcl-profile**

usage-parameter-control

UPC is the process of monitoring and controlling the ATM traffic by enforcing the traffic parameters. By using this parameter, you can disable on a per-traffic descriptor basis. This is typically only done during debugging.

Values   **true**
    Enforcement of traffic descriptor parameters is enabled.

false
    Enforcement of traffic descriptor parameters is disabled.

Default   **true**

Location   **atm-traf-descr**

Notes   The **usage-parameter-control** parameter must be set to **true** if the ATM service category is CBR.

vcc_aal5_encaps_type

This parameter applies only when the local VCL end-point is also the VCC end-point, and AAL5 is in use. The type of data encapsulation used over the AAL5 SSCS layer. The definitions reference RFC 1483 Multiprotocol Encapsulation over ATM AAL5 and to the ATM Forum LAN Emulation specification.

Values   **llcencapsulation**
    Logical link control encapsulation over AAL5. Used for connections terminated on the device.

other
    RFC 1483 multiprotocol encapsulation over AAL5. Used for bridged termination connections.

Default   **llcencapsulation**

Location **atm-vcl**

vcc_aal_type

The type of AAL used on this VCC. This parameter applies only when the local VCL end-point is also the VCC end-point, and AAL is in use.

Values **aal5**
For AAL5 terminated data.

other
For cell relay.

aal2
For AAL2 voice. When a VCL is set to AAL2 (either manually or with the **voice add** command), the system automatically creates associated **aal2-vcl-profiles**.

Default **aal5**

Location **atm-vcl**

vcc-i

The VCC Identifier. It is used to differentiate **aal2-vcl-profiles** and is used to match profiles between IADs and ATM switches.

Values **integer**

Location **aal2-vcl-profile**

vci

The VCI value for this virtual channel link (VCL). This must match the remote end of the connection.

Location **atm-vcl**

Notes The maximum VCI value cannot exceed the value allowable by atmInterfaceMaxVciBits defined in the ATM-MIB.

vcl_cast_type

The connection topology type.

Default **p2p**

Location **atm-vcl**

vcl_conn_kind

The use of call control.

Default **pvc**

Location atm-vcl

vcl-rate-params (1 through 32)

The **atm-vcl-param** profile defines the allowable values for the PCR and SCR for certain traffic types. The values in this profile are used as follows:

• The SCR for rt-VBR traffic descriptors must use one of the first 16 rates.

• The PCR for CBR traffic descriptors can use any of the 32 rates.

• For a UBR traffic descriptor, if **usage-parameter-control** in an ATM traffic descriptor is set to **false**, or if PCR is greater than modem trained rate, then the UBR traffic is shaped to one of the 32 rates. The shaper will pick a rate that is equal to or less than the modem trained rate. If there are multiple rates less than the modem trained rate, the one closest to the trained rate will be selected.

> **Note:** If your device is being managed by ZMS, changes to the **atm-vcl-param** profile should be made using ZMS. If you use the CLI to change the profile, perform a full config sync update after making the change.

Note the following about the values in this profile:

• Rates are in cells per second (CPS)

• Duplicate rates are not permitted

• Rates must be in ascending order within the first 16 rates and also within the second 16 rates.

Location atm-vcl-param

Notes • The **td_param1** and **td_param2** parameters in the **atm-traf-descr** profile must be set to one of the configured rates in the **atm-vcl-param** profile.

• Changing the values in the **atm-vcl-param** profile requires a system reboot.

• Table 9 explains the **atm-vcl-param** default settings.

Table 9: atm-vcl-param settings

Setting (in CPS)	Application
38	1 to 2 DS0s at 5:1 to 10:1 oversubscription
76	2 to 4 DS0s at 5:1 to 10:1 oversubscription
151	4 to 8 DS0s at 5:1 to 10:1 oversubscription

Table 9: atm-vcl-param settings (Continued)

Setting (in CPS)	Application
189	1 DS0 no oversubscription
302	8 to 16 DS0s at 5:1 to 10:1 oversubscription
378	2 DS0 no oversubscription
604	16 to 32 DS0s at 5:1 to 10:1 oversubscription
755	4 DS0 no oversubscription
1208	32 to 64 DS0s at 5:1 to 10:1 oversubscription
1510	8 DS0 no oversubscription
3661	Full T1
4825	Full E1
28302	8 T1s
37736	8 E1s
106133	DS3
365567	OC3-c/STM1

voicebandwidthcheck

Enables or disables ATM bandwidth checking for voice calls. The system will reject a call if there is not enough bandwidth. On a MALC or a Z-Edge, if a call is rejected, the device sends a fast busy to the caller. On the BAN or the Sechtor 100A, if a call is rejected, the switch sends a busy signal to the caller.

Note: Bandwidth calculations are enabled or disabled for the entire system.

The bandwidth check is based on the configuration of the transmit and receive ATM traffic descriptors for the ATM VC/CID used by the call. The system uses the following parameters to calculate the required bandwidth:

• rt-VBR traffic: SCR

• CBR traffic: PCR

• All other traffic types: calls are always accepted, there are no voice quality guarantees.

	The system will reject calls if:
	[Receive or transmit cell rate - (180*number of active calls on the VC)] < 180
	(The bandwidth calculations assume that approximately 180 AAL2 cells per second are used for each voice call.)
Values	**true**
	false
Default	**false**
Location	**system** profile

vpi

	The VPI value for a VPL or VCL. This must match the remote end of the connection.
Values	Valid values differ depending on the type of device and its revision level. Refer to the configuration guide for your device for valid ranges.
Location	**atm-vcl**
Notes	The maximum VPI value cannot exceed the value allowable by atmInterfaceMaxVpiBits defined in the ATM-MIB.
See Also	**vci**

zhoneAtmMaxVciPerVp

	Specifies the maximum number of VCIs supported in a VP-switched VPI on the MALC Voice Gateway card.
Default	**0**
Location	**atm-vpi**
Notes	Refer to the release notes for the maximum values for a particular device.

zhoneAtmVpiMaxVci

	For the selected VPI, this value specifies the maximum VCI. For VP switched VPIs, this value must be zero.For VC switched VPIs, this value must be a power of 2.
Default	**0**
Location	**atm-vpi**
Notes	Refer to the release notes for the maximum values for a particular device.

zhoneAtmVpiSwitched

Indicates whether the VPI is VP or VC switched.

Values **vp**

vc

Default **vp**

Location **atm-vpi**

Bridging

bridgeConfigType

Specifies the type of filter to be applied to packets on the interface.

Values **bridgeinsertoption82**
Inserts identification text into the DHCP packet.

bridgeforbidoui
Drops packets with matching OUI.

Access This parameter is read-write.

Location **bridge-config-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

bridgeConfigValue

If the **bridgeConfigType** is set to **bridgeforbidoui**, this parameter specifies the OUI or first 3-bytes of the MAC address in the format nn:nn:nn, where nn represents a hex number designating a byte. If the **bridgeConfigType** is set to **bridgeinsertoption82**, this parameter contains a text string that is inserted into the DHCP packet.

Values **A string in the form nn:nn:nn, where nn represents a hexadecimal number designating a byte.**

Access This parameter is read-write.

Location **bridge-config-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

bridgeIfConfigGroupIndex

Index used for bridge groups.

Default **0**

Access This parameter is read-write.

Location	bridge-interface-record
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

bridgeIfCustomDHCP

Determines the handling of DHCP offer messages from remote DHCP servers.

Values	**true**
	Forwards broadcast DHCPOFFER or DHCPACK packets even if bridgeFilterBroadcast is TRUE for that interface when the correspondent MAC address is found.
	false
	Does not forward broadcast DHCPOFFER or DHCPACK packets.
Default	**false**
Access	This parameter is read-write.
Location	bridge-interface-record
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

customARP

Determines how the BAN treats ARP packets. When a BAN receives a ARP packet, it compares and filters the requested IP address with the current forwarding table. If a match is found, the ARP broadcast is forwarded out the interface that has the appropriate host. This host will then reply to the ARP with a standard response. If a match is not found, then the ARP is filtered and it gets dropped as if it were a non-ARP broadcast.

Values	**true**
	Drops the packet if there is no match for the requested IP address.
	false
	Sends the ARP packet out regardless of the whether a match is found for the requested IP address. (If true, sends ARP requests selectively or by flood.)
Default	**false**
Access	This parameter is read-write.
Location	**bridge-interface-record**
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

filterBroadcast

Determines how the BAN handles non-ARP broadcast packets.

Values	**true**
	Non-ARP broadcast packets are discarded.

false
   Non-ARP broadcast packets are forwarded.

Default **false**

Access This parameter is read-write.

Location **bridge-interface-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

forwardToDefault

If true, attempt to forward via VLAN default paths.

Default **false**

Access This parameter is read-write.

Location **bridge-interface-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

forwardToMulticast

If true, attempt to forward via multicast MAC paths.

Default **false**

Access This parameter is read-write.

Location **bridge-interface-group**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

forwardToUnicast

If true, attempt to forward via unicast MAC paths.

Default **false**

Access This parameter is read-write.

Location **bridge-interface-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

learnIP

If true, snoop unicast packets to build ARP table.

Default **false**

Access This parameter is read-write.

Location **bridge-interface-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

learnMulticast

If true, snoop multicast packets for IGMP joins/leaves.

Default	**false**
Access	This parameter is read-write.
Location	**bridge-interface-record**
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

learnUnicast

If true, snoop unicast packets to build MAC paths.

Default	**false**
Access	This parameter is read-write.
Location	**bridge-interface-record**
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

maxUnicast

Maximum number of unicast addresses for I/F.

Access	This parameter is read-write.
Location	**bridge-interface-record**
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

StripAndInsert

If true, enable VLAN Tagging.

Default	**false**
Access	This parameter is read-write.
Location	**bridge-interface-record**
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

vci

If this bridge interface is on an ATM VCL, this is the ATM VCI. If the bridge interface is not an ATM VCL, (for example an Ethernet interface), this parameter is 0.

Access	This parameter is read-write.
Location	**bridge-interface-record**
Products	MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

vlanId

The Virtual LAN Id for VLAN tag insertion.

Default **0**

Access This parameter is read-write.

Location **bridge-interface-record**

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

vpi

The VPI value for a VPL or VCL. The VPI value of 0 is only allowed for a VCL.

Default **0**

Access This parameter is read-write.

Location bridge-interface-group

Products MALC, Raptor 100, Raptor 319, Raptor 719, Raptor 723

Card

admin-status

Specifies the administrative status of the unit or card.

Values **operational**
The unit or card enters the operational state if it is able. In the operational state the unit or card is able to accept requests from other devices; or, if it is a stand-alone device, it is able to process requests from the wide area network (WAN) or local interfaces.

disable
The unit or card ceases to accept requests from other devices. If the unit or card is operational and receives this command it completes processing of open requests if able.

maintenance
Enter a special maintenance state if available. If not available enter the disabled state and set **admin-status** to disabled.

warm reset
Perform a warm reset of system software that does not reinitialize or reset hardware resources.

reset
Perform an immediate full reset. Following a successful reset the unit or card should enter the operational state.

Location	**card-profile**
See Also	**sw-status**

admin-status-enable

Enables the collection and forwarding of historical statistics on the unit or card.

> ✅ **Note:** This value should be combined with the system statistics to determine if the collection and forwarding of statistics should be enabled.

Values	**enabled**
	disabled
Default	**disabled**
Location	**card-profile**

card-group-id

The unique redundancy group to which the card is assigned. A card group can contain at most two cards and redundant card pairs must be in the same card group.

Values	**0 to 65535**
Default	**0 (indicates no redundancy group configured)**
Notes	Redundancy group IDs must be non-zero.

A non-zero **card-group-id** cannot be changed. You must delete the **card-profile** and recreate it.

card-atm-configuration

Specifies bandwidth allocation for rt-VBR and UBR traffic and used by Connection Admission Control (CAC). This parameter only applies to ATM trunking interfaces, such as MALC and Raptor Uplink cards, as well as BAN ATM trunking cards.

> ✅ **Note:** The Raptor 100 does not support CBR.

Values	**notapplicable**

cellrelayonly (BAN only)
    The only supported value for ATM trunking (cell relay) card. Specifies the following bandwidth allocation:
    - AAL2/cell relay 99%
    - AAL5 1%

For ATM-AAL2/AAL5card, 50% of AAL2/cell relay bandwidth is rt-VBR.

cellrelayandmanagement (BAN only)
Specifies the following allocation:

- AAL2/cell relay 95%

- AAL5 5%

For ATM-AAL2/AAL5card, 50% of AAL2/cell relay bandwidth is rt-VBR.

dataterm (BAN only)
Specifies the following allocation:

- AAL2/cell relay 5%

- AAL5 95%

For ATM-AAL2/AAL5card, 50% of AAL2/cell relay bandwidth is rt-VBR.

voiceGateway (BAN only)
Specifies the following allocation:

(only supported for ATM-AAL2/AAL5 card)

- AAL2/cell relay 95%

- AAL5 5%

For ATM-AAL2/AAL5card, 95% of AAL2/cell relay bandwidth is rt-VBR.

hybridlowaal5data (BAN only)
Specifies the following allocation:

- AAL2/cell relay 75%

- AAL5 25%

For ATM-AAL2/AAL5card, 95% of AAL2/cell relay bandwidth is rt-VBR.

hybriddefeault (BAN only)
Specifies the following allocation:

- AAL2/cell relay 60%

- AAL5 40%

For ATM-AAL2/AAL5 card, 75% of AAL2/cell relay bandwidth is rt-VBR.

hybridhighaal5data (BAN only)
Specifies the following allocation:

- AAL2/cell relay 25%

- AAL5 75%

For ATM-AAL2/AAL5 card, 50% of AAL2/cell relay bandwidth is rt-VBR.

vbnrt95rt5 (MALC, Raptor)
Specifies the following allocation:
- UBR: 1%
- nrt-VBR: 94%
- CBR/rt-VBR: 5%

vbnrt80rt15 (MALC, Raptor)
Specifies the following allocation:
- UBR: 5%
- nrt-VBR: 80%
- CBR/rt-VBR: 15%

vbnrt65rt30 (MALC, Raptor)
Specifies the following allocation:
- UBR: 5%
- nrt-VBR: 65%
- CBR/rt-VBR: 30%

vbnrt50rt45 (MALC, Raptor)
Specifies the following allocation:
- UBR: 5%
- nrt-VBR: 50%
- CBR/rt-VBR: 45%

vbnrt35rt60 (MALC, Raptor)
Specifies the following allocation:
- UBR: 5%
- nrt-VBR: 35%
- CBR/rt-VBR: 60%

vbnrt20rt75 (MALC, Raptor)
Specifies the following allocation:
- UBR: 5%
- nrt-VBR: 20%
- CBR/rt-VBR: 75%

vbnrt5rt95 (MALC, Raptor)
Specifies the following allocation:
- UBR: 1%
- nrt-VBR: 5%
- CBR/rt-VBR: 94%

Location **card-profile**

card-line-type

Specifies the line type of the card and the signaling that runs over it. Does not apply to MALC OC3-c/STM1 Uplink cards.

Values **unknowntype**

Unknown mode. Used for cards that do not support this parameter.

e1

E1 UNI mode.

ds1

DS1 UNI mode

e1-ima

E1 ATM IMA mode (MALC T1/E1 IMA Uplink card)

ds1-ima

DS1 ATM IMA mode (MALC T1/E1 IMA Uplink card)

e3

E3 UNI mode

ds3

DS3 UNI mode

t1-uni-gr303

T1 UNI mode of ATM and GR-303 TDM signaling (MALC T1/E1 TDM Uplink card)

t1-ima-gr303

T1 IMA mode of ATM and GR-303 TDM signaling (MALC T1/E1 TDM Uplink card)

e1-uni-v52

E1 UNI mode of ATM and V5.2 TDM signaling (MALC T1/E1 TDM Uplink card)

e1-ima-v52

E1 IMA mode of ATM and V5.2 TDM signaling (MALC T1/E1 TDM Uplink card)

gshdsl

SHDSL (Raptor 100 SHDSL Uplink model).

t1-uni-t1cas

Used for POTS to DS1 connections on the T1/E1 TDM card or OC12-c/ STM4 Uplink cards.

t1-ima-t1cas

Used for POTS to E1 connections on the T1/E1 TDM card or OC12-c/ STM4 Uplink cards.

rpr

RPR data-only mode (the default for the 2 port GigE RPR card).

rpr-t1-gr303

RPR with data and GR-303 voice.

rpr-e1-v52

RPR with data and V5.2 voice

rpr-t1cas

RPR with data and T1 CAS voice

 adsl-pots
   ADSL and TDM POTS. Supported on ADSL 48 port cards only.

adsl-pots-pv
   ADSL and packet voice. Supported on ADSL 48 port cards only.

adsl-splitter
   ADSL with splitter. Supported on ADSL 48 port cards only.

pots
   TDM POTS. Supported on the POTS 48 port card only.

pots-pv
   Packet voice. Supported on the POTS 48 port card only.

Location **card-profile**

Notes Does not apply to DSL card, the MALC ULC card, or POTS cards.

hold-active

When set to true, this indicates that the card, when Active, should remain in the Active state regardless of any system events. This effectively disables redundancy for the card group.

Location **card-profile**

name

Name of the software image to load for the card. If the name is not specified, the slot card loads the image specified in the **card-profile** for the slot.

Location **card-profile**

sw-enable

Specifies whether a software download for the slot card is enabled.

Values **true**
   Enables the system to download the binary for that slot card when the card is reset.

false
   Software is not downloaded to the slot card. This effectively disables the slot card.

Default **false**

Location **card-profile**

Notes The slot card loads the software binary specified in the **type-module** record for the card if it is not specified in the **card-profile** record for that slot.

See Also **name**, **upgrade-sw-file-name**

sw-file-name

The file or code image name of the software version that should be loaded by the unit or card for operation.

The operation of this parameter varies depending on the type of device.

- BAN. MALC, and Raptor: The card will load the specified software image. If the **sw-file-name** is not specified, the card will load the image specified in the **type-module** for the slot card.

- Z-Edge or Sechtor 100A: If the unit is a Z-Edge or a Sechtor 100A, the system will first check for a local copy of the specified software image. If a copy is there, the device will load from the local copy. If the local copy is not the same revision as the **sw-file-name** the card will load the new image.

Location **card-profile**

Notes If a failure occurs when loading an upgrade version, the system automatically reverts to a software version specified in the **sw-file-name**. If the **sw-file-name** is not specified, the card will load the image specified in the **type-module** for the slot card.

See Also **name**

sw-pri-load-server

The IP address of the primary software load server. This parameter is not used by BAN, MALC, or Raptor cards. If the value of this parameter is set to 0.0.0.0 then no primary load server is available.

Location **card-profile**

Notes If the system is unable to load the software file from the primary load server, the system attempts to load the software from the secondary load server.

sw-upgrade-admin

How the unit should be upgraded.

Values **loadupgradesw**
The device requests a load of the upgrade software from the image previously downloaded to the system. If an upgrade version of the software is not available or the upgrade server is unable to respond to the load request, the card will set **sw-status** to **upgradeloadFailed**.

upgradenow
The device upgrades to the already loaded upgrade software if warm upgrade is supported or it will reboot and load the upgrade software if warm upgrade is not supported. If the upgrade software has not been loaded or there is no grade software load available, the device will set

sw-status to **upgradeFailed**. When this value is set, the
sw-upgrade-enable parameter is set to true.

upgradeonreset
The device upgrades to the already loaded software the next time it is
reset. If the upgrade software is not loaded the card will set **sw-status** to
upgradeFailed following a reset.

reloadcurrrev
The device will reset and load the version of code that was running prior
to the most recent upgrade.

Location **card-profile**

type

This parameter definition differs depending on its location:

• In an **if-translate** profile, it indicates the type of interface, as specified in
the Interface MIB (RFC 2233).

• In a **card-resource** profile, it indicates the type of slot card.

Location **card-profile**

upgrade-sw-file-name

The file name of the software image that should be loaded by the unit or card
at the next upgrade. If this is not specified, the name of the image specified in
the type-module record for the slot card is downloaded instead.

Location **card-profile**

See Also **name**

upgrade-vers

The software version that is loaded into the unit or card memory that can be
loaded after a warm reboot of the system.

Location **card-profile**

weight

A weight given to this card that determines whether this card should become
the active card after both cards are reset. Cards in a card group negotiate
which cards are active and standby by comparing weights. Cards with higher
preferences become active. If multiple cards have the same weight, the card in
the lower numbered slot becomes active.

Values **noPreference**
No preference.

neveractive
    The card never becomes active.

slightpreference

mediumpreference

highpreference

Default   **noPreference**

Channel Emulation Service (CES)

buf-max-size

Defines maximum the size of the reassembly buffer in 10 microsecond increments.

Default   **128**

Access   This parameter is read-write.

Location **ces-config**

Products MALC

cas

Specifies which AAL1 Format should be used. This applies to structured interfaces only.

For unstructured interfaces this value, if present, must be set to the default of **basic**.

Values   **basic**
    No CAS bits with a single 125 usec frame. Default. Required for unstructured channels.

e1cas
    CAS bits used in E1 multiframe structure.

ds1esfcas
    CAS bits used in DS1 ESF multiframe structure.

ds1sfcas
    CAS bits used in DS1 SF multiframe structure.

Default   **basic**

Access   This parameter is read-write.

Location **ces-config**

Products MALC

cell-loss-integration-period

The time in milliseconds for the cell loss integration period.

Default	**2500**
Access	This parameter is read-write.
Location	ces-config
Products	MALC

destination-ip-address

Shows the configured destination IP address of the CES over IP connection.

Access	This parameter is read-only.
Location	**ces-config**
Products	MALC

destination-port

Shows the configured destination UPD port number of the CES over IP connection.

Access	This parameter is read-only.
Location	**ces-config**
Products	MALC

ds0-bundle

Lists the specified DS0 bundles.

Access	This parameter is read-only.
Location	**ces-config**
Products	MALC

partial-fill

Specifies the number of user octets per cells. Setting this parameter to zero disables partial cell fill, and causes all cells to be completely filled before they are sent.

Default	**0**
Access	This parameter is read-write.
Location	ces-config
Products	MALC

source-ip-address

Shows the configured source IP address of the CES over IP connection.

Access This parameter is read-only.

Location **ces-config**

Products MALC

source-port

Shows the configured source UPD port number of the CES over IP connection.

Access This parameter is read-only.

Location **ces-config**

Products MALC

vci

The VCI used by the ATM VCL mapped through this CES IWF to a CBR interface. Zero indicates that no ATM VCL has been specified.

Default **0**

Access This parameter is read-write.

Location ces-config

Products MALC

vpi

The VPI used by the ATM VCL mapped through this CES IWF to a CBR interface.

Default **0**

Access This parameter is read-write.

Location **ces-config**

Products MALC

Clocking

clock-transmit-source

Specifies the OC3-c/STM1 or OC12-c/STM4 clocking mode. The default is looptiming.

Values	**looptiming**
	The recovered receive clock from the interface is used as the transmit clock.
	localtiming
	A local (to the interface) clock source is used on the transmit signal.
	throughtiming
	The transmit clock is derived from the recovered receive clock of another interface. Interfaces that are designated as eligible clock sources cannot be set to through timing.
Default	**looptiming**
Location	**sonet-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

primaryclocksource

The *shelf-slot-port-subport/type* of an interface to provide clocking for the system.

> ✅ **Note: system-clock-profiles** (if supported on the device) are the preferred method of configuring clock sources.

Values	**A valid interface on the system.**
	For the BITS clock on the MALC MTAC/Ring card, specify the address in the form *shelf-slot*-**1-0/ds1**.
Location	**system**
Notes	If configured, the setting in the **primaryclocksource** parameter overrides settings in the **system-clock-profile** for all interfaces that provide clocking.
Products	BAN, MALC, Raptor, Sechtor 100A

revertiveclocksource

If a standby clock source becomes active after the failure of a primary clock source, the system will revert to the primary clock source after that clock source becomes active again. Note that the clock source must be active for 30 seconds before the system will revert back to the primary clock source.

Values	**true**
	The system clock is revertive.
	false
	The system clock is non-revertive.
Default	**true**
Location	**system**
Products	BAN, MALC, Raptor, Sechtor 100A

transmit-clock-source

Specifies the DS1/DS3 clocking mode.

Values **looptiming**

The recovered receive clock from the DS1/DS3 is used as the transmit clock.

localtiming

A local (to the DS1/DS3 interface) clock source is used on the DS1/DS3 transmit signal.

throughtiming

The transmit DS1/DS3 clock is derived from the recovered receive clock of another DS1/DS3 interface. Interfaces that are designated as eligible clock sources cannot be set to through timing.

Default **looptiming (DS3) throughtiming (DS1)**

Location **ds1-profile**, **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

system-clock-eligibility

Specifies whether the interface is eligible to provide clocking for the system. The source must be active in order to provide clock. The following types of interfaces can provide clock:

- T1/E1

- DS3/E3

- OC3-c

- OC12-c

Values **true**

false

Default **false**

Location **system-clock-profile**

Products BAN, MALC, Raptor, Sechtor 100A

system-clock-weight

Assigns a weight to the clock source. If you assign weight to a clock source that is higher than the currently active clock source, the system will switch over to that clock source.

Values **1 to 10**

1 is the lowest priority, 10 is the highest

Default **5**

Location	**system-clock-profile**
Notes	If you assign weight to a clock source that is higher than the currently active clock source, or if you assign a clock source in the **system** profile, the system will switch over to the new clock source.
Products	BAN, MALC, Raptor, Sechtor 100A

DHCP

bootfile

The name of the initial boot file loaded by the client. The filename should be recognizable to the file transfer protocol that the client will be using to load the file.

Default	**An empty string**
Location	**dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**

boot-server

The IP address of the server from which the initial boot file (specified in the **bootfile** parameter) is to be loaded. If this IP address is specified as 0.0.0.0 then the primary interface address of the DHCP server is used.

Default	**An empty string**
Location	**dhcp-server-subnet**, **dhcp-server-host**, **dhcp-server-group**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

client-hostname

Client host name (if any) that the client used to acquire its address.

Default	**An empty string**
Location	**dhcp-server-lease**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

client-identifier

The DHCP client identifier.

Default	**An empty string**
Access	This parameter is read-write.
Location	**dhcp-server-host**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

client-match-length

The length of the client identifier substring to match.

Default **-1**

Specifies that the entire string beginning at the match offset value should be matched.

Access This parameter is read-write.

Location **dhcp-server-group**

Products BAN, MALC, Raptor, Z-Edge, ZRG

client-match-offset

The offset into the client passed client identifier string where the string match should start.

Default **0 (zero)**

Access This parameter is read-write

Location **dhcp-server-group**

Products BAN, MALC, Raptor, Z-Edge, ZRG

client-match-string

Client identifier match string that determines which clients should be placed in this group.

Access This parameter is read-write

Location **dhcp-server-group**

Products BAN, MALC, Raptor, Z-Edge, ZRG

defaultLease

The default requested lease length, in seconds.

Values **From 100 to 604800 (1 week).**

Default **604800**

Location **dhcp-client-resource**

Notes This value should be greater than or equal to the **minLease**.

Products BAN, MALC, Raptor, Z-Edge, ZRG

default-lease-time

The default time, in seconds assigned to a lease if the client requesting the lease does not request a specific expiration time.

Values	**From -1 - 2147483647**
Default	**-1**
	Indicates the parameter is ignored.
Access	This parameter is read-write.
Location	**dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**
Notes	This value should be greater than or equal to the **min-lease-time**.
Products	BAN, MALC, Raptor, Z-Edge, ZRG

default-router

The IP address of the client default gateway.

Default	**0.0.0.0**
Access	This parameter is read-write.
Location	**dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

dhcp

Specifies whether the IP interface is a DHCP client or server.

Values **none**
  The interface is neither a DHCP client or a server.

client
  The interface is a DHCP client.

server
  The client is a DHCP server.

both
  The interface is both a DHCP client and a server.

Default	**none**
Location	**ip-interface-record**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

dhcpClientErrors

The number of errors that the DHCP client has encountered.

Access	This parameter is read-only.

Location	**dhcp-client-resource**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

dhcpClientId

The DHCP client ID.

Location	**dhcp-client-lease-resource**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

dns

A list of the DNS server and router IP addresses that the system will use.

Location	**dhcp-client-lease-resource**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

dns-fwd-name

Dynamic DNS forward host name. Not currently used.

Location	**dhcp-server-lease**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

dns-rev-name

Dynamic DNS reverse host name. Not currently used.

Location	**dhcp-server-lease**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

domain

The routing domain to which this subnet, group, or host parameter applies.

Values	**0 to 2147483647, inclusive**
Access	This parameter is read-write.
Location	**dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

domainName

The name of the DHCP domain.

Access	This parameter is read-only.
Location	**dhcp-client-lease-resource**

Products BAN, MALC, Raptor, Z-Edge, ZRG

domain-name

The default domain name that the client should use when resolving host names using DNS. The default is an empty string.

Default **The default is an empty string.**

Access This parameter is read-write.

Location **dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**

Products BAN, MALC, Raptor, Z-Edge, ZRG

ends

The time in Greenwich Mean Time (GMT) that the DHCP lease will expire.

Values **0 to 2147483647, inclusive.**

Location **dhcp-server-lease**

Products BAN, MALC, Raptor, Z-Edge, ZRG

external-server

Non-null IP address value indicates use of external DHCP server instead of internal DHCP for this subnet.

Default **00000000**

Location **dhcp-server-subnet**

Products MALC

flags

Indicates how the DHCP host acquired its lease.

Values **Static**
    The lease is static. Static leases typically should not appear in the lease database.

bootp
    The lease was allocated using the BOOTP protocol. BOOTP leases are unsupported.

abandonedlease
    A client appears to exist (for example, the device responds to a ping command) on the network even though the DHCP server has not allocated the lease address to the client. In this case, the server abandons that lease and tries to reuse it only when it runs out of available addresses.

zhonecpe
The client that was allocated a lease identified itself as a Zhone CPE device (such as a Z-Edge).

Location **dhcp-server-lease**

Products BAN, MALC, Raptor, Z-Edge, ZRG

hardware-address

In the **dhcp-server-lease** profile, this parameter is the MAC address of the network interface that was used to acquire the lease.

In the **dhcp-server-host** profile, this parameter is the hardware address of the client that matches this host parameter. If the **client-identifier** parameter is specified, the hardware address is ignored.

Default **0 (zero)**

Access This parameter is read-write

Location **dhcp-server-lease**, **dhcp-server-host**

Notes Configure either the **hardware-address** or **client-identifier** for host parameters.

Products BAN, MALC, Raptor, Z-Edge, ZRG

hostName

Name of the DHCP host. This will not be a fully-qualified host name.

Access This parameter is read-only.

Location **dhcp-client-lease-resource**

Products BAN, MALC, Raptor, Z-Edge, ZRG

ipaddr1

The fixed IP address that should be assigned to this client.

Default **0.0.0.0**

Location **dhcp-server-host**

Products BAN, MALC, Raptor, Z-Edge, ZRG

ipaddr2

The fixed IP address that should be assigned to this client.

Default **0.0.0.0**

Location **dhcp-server-host**

Products BAN, MALC, Raptor, Z-Edge, ZRG

ipaddr3

The fixed IP address that should be assigned to this client.

Default	**0.0.0.0**
Location	**dhcp-server-host**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

ipaddr4

The fixed IP address that should be assigned to this client.

Default	**0.0.0.0**
Location	**dhcp-server-host**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

lease-time

The global default time in seconds that will be assigned to a DHCP lease if the client requesting the lease does not request a specific expiration time.

Values	**0 to 21474836471**
Default	**43200 seconds (12 hours).**
Location	**dhcp-server-options**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

max-lease-time

The maximum time in seconds that will be assigned to a lease regardless of the value specified by a client.

Values	**-1 to 2147483647** -1 indicates that this parameter is ignored.
Default	**The default in the dhcp-server-options record is 86,400 seconds.** **The default for dhcp-server-group, dhcp-server-host, and dhcp-server-subnet is -1.**
Location	**dhcp-server-options**, **dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

max-uui

Maximum user to user indicator.

Values	**0 to 15**
	Specify 15 for audio.
Default	**15**
Location	**aal2-audio-profile**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

min-uui

Minimum user to user indicator.

Values	**0 to 15**
	Specify 0 for audio.
Default	**0**
Location	**aal2-audio-profile**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

minLease

The minimum acceptable lease length.

Values	**1 to 604800 (one week)**
Default	**300**
Location	**dhcp-client-resource**
Notes	This value should not be greater than the **defaultLease**.
Products	BAN, MALC, Raptor, Z-Edge, ZRG

min-lease-time

The minimum expiration time in seconds that will be assigned to a DHCP lease by the server, regardless of the value specified by a client.

Values	**-1 to 2147483647**
Default	**-1, which indicates that the parameter is ignored.**
Location	**dhcp-server-options**, **dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**
Notes	This value should not exceed the **default-lease-time** setting.
Products	BAN, MALC, Raptor, Z-Edge, ZRG

name

In a **dhcp-server-host** record this indicates the host name for the client. This may be fully qualified with the local domain name but it is recommended that you use the **domain-name** parameter to specify the domain name.

In a **dhcp-server-group** record this indicates the group parameter name.

Default   **The default is an empty string.**

Location   **dhcp-server-host**, **dhcp-server-group**

Products   BAN, MALC, Raptor, Z-Edge, ZRG

netmask

The subnet mask associated with the IP interface. The value of the mask is an IP address with all the network bits set to 1 and all the hosts bits set to 0.

Access   This parameter is read-write.

Location   **dhcp-server-subnet**, **ip-interface-record**

Products   BAN, MALC, Raptor, Z-Edge, ZRG

network

The IP network address of this subnet parameter.

Access   This parameter is read-write.

Location   **dhcp-server-subnet**

Products   BAN, MALC, Raptor, Z-Edge, ZRG

primary-name-server

The IP address of the primary domain name server that the client should use for DNS resolution.

Default   **0.0.0.0.**

Access   This parameter is read-write.

Location   **dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**

Products   BAN, MALC, Raptor, Z-Edge, ZRG

range1-end

The last IP address of the first address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default   **0.0.0.0**

Location   **dhcp-server-subnet**

Products   BAN, MALC, Raptor, Z-Edge, ZRG

range1-start

The starting IP address of the first address pool in this subnet. If either the start or end range has a value of 0 then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

range2-end

The last IP address of the second address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

range2-start

The starting IP address of the second address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

range3-end

The last IP address of the third address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

range3-start

The starting IP address of the third address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

range4-end

The last IP address of the fourth address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

range4-start

The starting IP address of the fourth address pool in this subnet. If either the start or end range has a value of 0, then the entire address pool is ignored.

Default **0.0.0.0**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

reserve-end

The default number of IP addresses at the end of a subnet IP address space that are reserved by the DHCP server. To override this default, create a specific subnet rule for each subnet that needs to be handled differently.

Values **0 to 255**

Default **5**

Access This parameter is read-write.

Location **dhcp-server-options**

Products BAN, MALC, Raptor, Z-Edge, ZRG

reserve-start

The default number of IP addresses at the start of a subnet IP address space that are reserved by the DHCP server. To override this default, create a specific subnet rule for each subnet that needs to be handled differently.

Values **0 to 255**

Default **5**

Access This parameter is read-write.

Location **dhcp-server-options**

Products BAN, MALC, Raptor, Z-Edge, ZRG

See Also send-type

restart

Restarts the DHCP server. A restart should only be done after making manual changes to the DHCP server lease table. All other configuration changes done using SNMP are automatically loaded by the server.

Values **true**
> The server should restart by completely reloading its configuration.

false
> This value is automatically assigned to the parameter once the restart command has been acknowledged by the server.

Default **false**

Access This parameter is read-write.

Location **dhcp-server-options**

Products BAN, MALC, Raptor, Z-Edge, ZRG

secondary-name-server

The IP address of the secondary domain name server that the client should use for DNS resolution.

Default **0.0.0.0.**

Access This parameter is read-write.

Location **dhcp-server-subnet**, **dhcp-server-group**, **dhcp-server-host**

Products BAN, MALC, Raptor, Z-Edge, ZRG

stickyaddr

Specifies that the DHCP server attempts to hand out the same IP address to the same host, whenever possible, based on hardware address.

Values **disable**

enable

Default **enable**

Location **dhcp-server-subnet**

Products BAN, MALC, Raptor, Z-Edge, ZRG

starts

The time in GMT that the lease was assigned.

Values **0 to 2147483647**

Location **dhcp-server-lease**

Products	BAN, MALC, Raptor, Z-Edge, ZRG

state

The current state of the lease.

Values	**init**
	reboot
	bound
	verify
	release
	invalid
	bind
Location	**dhcp-client-lease-resource**
Notes	Only **init**, **verify** and **release** can be changed.
Products	BAN, MALC, Raptor, Z-Edge, ZRG

subnetgroup

The DHCP Subnet group ID used to indicate which address pool grouping may be used for the CPE subnet.

Default	**0 (zero)**
Location	**dhcp-server-subnet**
Products	MALC

tftp

The tftp address for the current interface.

Access	This parameter is read-only
Location	**dhcp-client-lease-resource**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

vendor-match-length

The length of the vendor class identifier substring to match.

Default	**-1, which indicates that the entire string starting at the match offset value should be matched.**
Location	**dhcp-server-group**
Products	BAN, MALC, Raptor, Z-Edge, ZRG

vendor-match-offset

The offset into the client passed vendor class identifier string where the string match should start.

Default **0 (zero)**

Location **dhcp-server-group**

Products BAN, MALC, Raptor, Z-Edge, ZRG

vendor-match-string

The vendor class identifier match string that is used to determine which clients should be placed in the group.

Default **An empty string.**

Location **dhcp-server-group**

Products BAN, MALC, Raptor, Z-Edge, ZRG

version

The version number of the current DHCP server configuration. If this value changes, the server will reload all of its configuration rules and reinitialize itself. Any configuration rules modified before this field is changed will not affect the DHCP server configuration once it is reset.

Values **0 (zero) to 2147483647**

Default **0 (zero)**

Location **dhcp-server-options**

Products BAN, MALC, Raptor, Z-Edge, ZRG

DNS

domain

The routing domain to which this host parameter applies.

Values **A string, maximum length 255 characters.**

Default **The default is an empty string.**

Access This parameter is read-write.

Location **resolver**

first-nameserver

The IP address of the first or primary name server for this routing domain.

Default **The default is an empty string.**

Access This parameter is read-write.

Location **resolver**

hostalias1

Host name alias for specified host. The host name can be qualified or hostname only. The maximum length for this name is 255 characters.

Location **host-name**

hostalias2

Host name alias for specified host. The host name can be either fully-qualified or hostname only. The maximum length for this name is 255 characters.

Location **host-name**

hostalias3

Host name alias for specified host. The host name can be either fully-qualified or hostname only. The maximum length for this name is 255 characters.

Location **host-name**

hostalias4

Host name alias for specified host. The host name can be either fully-qualified or hostname only. The maximum length for this name is 255 characters.

Location **host-name**

hostname

Client host name (if any) that the client used to acquire its address.

Default **The default is an empty string.**

Location **host-name**

ipaddress

The IP address of this system or interface on the indicated subnet. For unnumbered interfaces, a unique internal identifier is used.

Location **host-name**

query-order

The type of resolver query for this routing domain.

Values   **hosts-first**
Searches the local hosts table first, then the list of nameservers.

dns-first
Searches the list of nameservers first, then the local hosts table

dns-only
Searches only the list of nameservers.

Default   **hosts-first**

Access   This parameter is read-write.

Location   **resolver**

second-nameserver

The IP address of the secondary name server for this routing domain. This nameserver is queried if the first nameserver cannot resolve the query. If a secondary name server has not been defined, this field is set to 0.0.0.0

Access   This parameter is read-write.

Location   **resolver**

third-nameserver

The IP address of the third name server for this routing domain. This nameserver is queried if the first nameserver and the secondary nameserver cannot resolve the query. If a third name server has not been defined, this field is set to 0.0.0.0

Access   This parameter is read-write.

Location   **resolver**

DS1

cell-scramble

Indicates whether ATM cell scrambling is enabled for this interface. Both sides of the connection must agree on whether scrambling is enabled.

Values   **true**
Cell scrambling enabled.

false
Cell scrambling disabled.

Default	**true**
Products	BAN, MALC, Raptor, Sechtor 100A

channelization

Indicates whether this DS1/E1 is channelized.

Values **disabled**
   Not currently supported.

enabledDs0
   This is a DS1 channelized into DS0s.

enabledDs1
   This is a DS2 channelized into DS1s. Not currently supported.

Default **enabledDs0**

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

circuit-id

The transmission vendor circuit identification number.

Values **integer**

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

clock-source-eligible

Whether the clock source is eligible to become the transmit clock source.

Values **not-eligible**
   The interface is not eligible to be used as the transmit clock source.

eligible
   The interface can be used as the transmit clock source.

Default **not-eligible**

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

coset-polynomial

Indicates whether the coset polynomial is used to calculate the ATM header error control (HEC) value. Both sides of the connection must agree on the method of calculating the HEC value.

Values **true**
> The coset polynomial is used to calculate the HEC value.

false
> The coset polynomial is not used to calculate the HEC value.

Default **true**

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

csu-line-length

The length of the CSU WAN interface in feet. This objects provides information for line build out circuitry.

Values **csu00**
> 0 dB line build out.

csu75
> -7.5 dB line build out.

csu150
> -15.0 dB line build out.

csu225
> -22.5 dB line build out.

Default **csu00**

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

ds1-group-number

The group index to which this DS1 belongs.

Default **0**

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

ds1-mode

The type of T1 interface to which the system connects.

Values	**other**
	The T1 interface is neither DSX nor CSU.
	dsx
	The T1 interface is DSX.
	csu
	The T1 interface is CSU.
Default	**csu**
Access	This parameter is read-write.
Location	**ds1-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

dsx-line-length

The physical length of the T1 line. This setting is used to compensate for the attenuation of the line due to its length.

Values	**dsx0**
	Indicates the line is 0 feet.
	dsx133
	Indicates the line is 133 feet.
	dsx266
	Indicates the line is 266 feet.
	dsx399
	Indicates the line is 399 feet.
	dsx533
	Indicates the line is 533 feet.
	dsx655
	Indicates the line is 655 feet.
Default	**dsx0**
Access	This parameter is read-write.
Location	**ds1-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

fdl

Specifies the facilities data link protocol in use.

Values	**other**
	Indicates that a protocol other than one following is used.
	ansit1403
	FDL exchange recommended by ANSI.

att54016
> ESF FDL exchanges.

fdlnone
> The device does not use the FDL.

Default **fdlnone**

Access This parameter is read-write.

Location **ds1-profile**

Notes Not supported on E1.

Products BAN, MALC, Raptor, Sechtor 100A

line-code

The type of Zero Code Suppression used on the interface.

Values **b8zs**
> Bipolar 8 Zero Substitution. A specific pattern of normal bits and bipolar violations used to replace a sequence of eight zeros. Used for T1.

hdb3
> High Density Bipolar of order 3. Used for E1.

ami
> Alternate Mark Inversion. No zero code suppression is present and the line encoding does not solve the problem directly. In this application, the higher layer must provide data which meets or exceeds the pulse density requirements Used for T1. Also used for E1 lines, with or without CRC.

Default

> **b8zs for T1**

> **hdb3 for E1**

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

line-power

Enables and disables line power for the DS1 interface.

Default **Disabled**

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

line-status-change-trap-enable

Whether zhoneLineStatusChange traps should be generated for this interface.

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ds1-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

line-type

The type of DS1 line used on this circuit. The type of circuit affects the number of bits per second that the circuit can reasonably carry, as well as the interpretation of the usage and error statistics.

Values	**esf**
	Extended SuperFrame DS1 (T1.107).
	d4
	AT&T D4 format DS1 (T1.107).
	e1
	ITU-T Recommendation G.704 (Table 4a).
	e1Crc
	ITU-T Recommendation G.704 (Table 4b).
	elMf
	G.704 (Table 4a) with TS16 multiframing enabled.
	e1crcmf
	G.704, table 4b, with TS16 multiframing and cyclic redundancy check enabled for E1 circuits. Used for V5.2.
Default	**esf for T1**
	e1CrcMf for E1
Location	**ds1-profile**
Notes	• For more information see ITU-T Recommendation G.704.
	• D4 is not supported on the BAN, MALC, or Raptor.
Products	BAN, MALC, Raptor, Sechtor 100A

loopback-config

The loopback configuration of the DS1 interface.

Values	**noloop**
	Not in the loopback state. A device that is not capable of performing a loopback on the interface always returns this as its value.

lineloop

The received signal on this interface does not go through the device (minimum penetration) but is looped back out.

localloop

The transmitted signal on this interface is looped back and received by the same interface. What is transmitted onto the line is product dependent.

payloadloop

The received signal on this interface does not go through the device (minimum penetration) but is looped back out.

Default **noloop**

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

protocol-emulation

Indicates whether the device is acting as a network-side device or CPE with respect to this DS1 connection.

Values **network**

cpe

Default **network**

Access This parameter is read-write.

Location **ds1-profile**

Notes Z-Edge 6200 only.

send-code

Indicates what type of code is being sent across the DS1 interface by the device.

Values **sendnocode**

Sending looped or normal data. This is the only supported option for E1 interfaces.

sendlinecode

Sending a request for a line loopback.

sendpayloadcode

Sending a request for a payload loopback.T1 only.

sendresetcode

Sending a loopback termination request. T1 only.

sendqrsspattern

Sending a Quasi-Random Signal (QRS) test pattern. T1 only.

send511pattern
Sending a 511 bit fixed test pattern. T1 only.

send3in24pattern
Sending a fixed test pattern of 3 bits set in 24. T1 only.

sendothertestpattern
Sending a test pattern other than those described by this parameter. T1 only.

send2047pattern
Sending 2047 test pattern. T1 only.

send1in2pattern
Sending alternate one, zero pattern. T1 only.

sendinbandcode
Sending inband loopback command. T1 only.

sendinbandcodeoff
Sending inband loopback off command. T1 only.

sendlinecodeoff
Sending line loopback command. T1 only.

sendpayloadcodeoff
Sending payload loopback command. T1 only.

Default **sendnocode**

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

signal-mode

The DS1 signaling mode.

Values **None**
No bits are reserved for signaling on this channel.

robbedBit
DS1 robbed bit signaling is in use.

bitOriented
E1 Channel Associated Signaling is in use.

messageOriented
Common Channel Signaling is in use either on channel 16 of an E1 link or channel 24 of a DS1.

Access This parameter is read-write.

Location **ds1-profile**

Products BAN, MALC, Raptor, Sechtor 100A

signal-type

The signaling type of the FXS interfaces within this DS1 connection.

Values **loopstart**

groundstart

Default **loopstart**

Access This parameter is read-write.

Location **ds1-profile**

Notes Z-Edge 6200 only.

transmit-clock-source

Specifies the DS1/DS3 clocking mode.

Values **looptiming**
The recovered receive clock from the DS1/DS3 is used as the transmit clock.

localtiming
A local (to the DS1/DS3 interface) clock source is used on the DS1/DS3 transmit signal.

throughtiming
The transmit DS1/DS3 clock is derived from the recovered receive clock of another DS1/DS3 interface. Interfaces that are designated as eligible clock sources cannot be set to through timing.

Default **looptiming (DS3) throughtiming (DS1)**

Location **ds1-profile**, **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

DS3

channelization

Whether this DS3/E3 is channelized or unchannelized. Setting this object will cause the creation or deletion of DS2 or DS1 entries in the ifTable.

Values **disabled**
This interface is unchannelized.

enabledds1
This is a DS3 channelized into DS1s.

enabledds2
This is a DS3 channelized into DS2s. Not currently supported.

Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

circuit-id

The transmission vendor's circuit identification number

Values	**string of up to 255 characters**
Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

ds1-for-remote-loop

Which DS1/E1 on this DS3/E3 will be indicated in the remote DS1 loopback request. The type of loopback is configured in the **loopback-config** parameter.

Values	**From 0 (zero) to 29, inclusive.** A value of 0 means no DS1s will be looped. A value of 29 means all DS1/E1 will be looped.
Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

far-end-equip-code

The Far End Equipment Identification code that describes the specific piece of equipment at the other end of the link. It is sent inside the Path Identification Message.

Values	**A string of 0 (zero) to ten (10) characters, inclusive.**
Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

far-end-fac-id-code

This code identifies a specific Far End DS3 path. It is sent inside the Path Identification Message.

Values	**A string of 0 (zero) to ten (10) characters, inclusive.**
Access	This parameter is read-write.

Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

far-end-frame-id-code

The Far End Frame Identification code that identifies where the remote equipment is located within a building at a given location. It is sent inside the Path Identification Message.

Values	**A string of 0 (zero) to 38 characters, inclusive.**
Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

far-end-loc-id-code

The Far End Location Identification code that describes the location of the specific piece of equipment at the other end of the link. It is sent inside the Path Identification Message.

Values	**A string of 0 (zero) to eleven (11) characters, inclusive.**
Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

far-end-unit-code

The Far End code that identifies the equipment location within a bay. It is sent inside the Path Identification Message.

Values	**A string of 0 (zero) to six (6) characters, inclusive.**
Access	This parameter is read-write.
Location	**ds3-profile**
Products	BAN, MALC, Raptor, Sechtor 100A

line-coding

This variable describes the variety of Zero Code Suppression used on this interface, which in turn affects a number of interface characteristics.

Values	**dsx3other**
	dsx3b3zs
	Refers to the use of specified patterns of normal bits and bipolar violations which are used to replace sequences of zero bits of a specified length.

e3hdb3
High Density Bipolar of order 3. Refers to the use of specified patterns of normal bits and bipolar violations which are used to replace sequences of zero bits of a specified length. Used for E1 and E3.

Access This parameter is read-write.

Location **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

line-length-meters

The length of the DS3 line in meters. This parameter provides information for line build out circuitry (if it exists) and is used to adjust the line build out.

Values **From 0 to 6400 meters.**

Access This parameter is read-write.

Location **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

line-status-trap-enable

Indicates whether **line-status-trap-enable** traps should be generated for this interface.

Values **enabled**

disabled

Access This parameter is read-write.

Location **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

line-type

The DS3 C-bit or E3 application used on this interface. The type of interface affects the interpretation of the usage and error statistics. DS3 transmits at a speed of 44.736 Mbps and E3 transmits at 34.368 Mbps.

Values **dsx3m23**
As defined in ANSI T1.107-1988 [9].

dsx3cbitparity
As defined in ANSI T1.107a-1990 [9a]

Default **dsx3cbitparity**

Access This parameter is read-write.

Location **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

loopback-config

The loopback configuration of the DS3/E3 interface.

Values   **dsx3NoLoop**
Not in the loopback state. A device that is not capable of performing a loopback on the interface will always return this value.

dsx3PayloadLoop
The received signal at this interface is looped through the device. Typically the received signal is looped back for retransmission after it has passed through the device's framing function.

dsx3LineLoop
The received signal at this interface does not go through the device (minimum penetration) but is looped back out.

dsx3InwardLoop
The sent signal at this interface is looped back through the device.

Access   This parameter is read-write.

Location   **ds3-profile**

Products   BAN, MALC, Raptor, Sechtor 100A

medium-atmframe-config

The ATM framing mode.

Values   **dsx3AtmFramingOther**
The ATM framing format is other than PLCP or direct cell mapped.

dsx3AtmFramingPLCP
The ATM framing format is PLCP.

dsx3AtmFramingDirectCellMapped
The ATM framing format is direct cell mapped.

Default   **dsx3AtmFramingDirectCellMapped**

Access   This parameter is read-write.

Location   **ds3-profile**

Products   BAN, MALC, Raptor, Sechtor 100A

medium-frame-config

The E3 framing mode.

Values   **e3FrameOther**
An option other than e3FrameG832 or e3FrameG751.

e3FrameG832
E3 framing format will be G832.

e3FrameG751
E3 framing format will be G751.

Default   **e3FrameG832**

Access   This parameter is read-write.

Location   **ds3-profile**

Products   BAN, MALC, Raptor, Sechtor 100A

medium-scramble-config

Whether the DS3 scramble mode is enabled.

Values   **true**
Scramble mode is enabled.

false
Scramble mode is disabled.

Default   **true**

Access   This parameter is read-write.

Location   **ds3-profile**

Products   BAN, MALC, Raptor, Sechtor 100A

send-code

Indicates what type of code is being sent across the DS3 interface by the device.

Values   **dsx3SendNoCode**
Sending looped or normal data.

dsx3SendLineCode
Sending a request for a line loopback.

dsx3SendPayloadCode
Sending a request for a payload loopback. (All T1/E1s in the DS3.)

dsx3SendResetCode
Sending a loopback termination request.

dsx3SendDS1LoopCode
Sending a request to loopback a particular DS1/E1 within a DS3/E3
frame. The DS1/E1 is indicated in **ds1-for-remote-loop** parameter.

dsx3SendTestPattern
Sending a test pattern.

Default   **dsx3SendNoCode**

Access   This parameter is read-write.

Location   **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

transmit-clock-source

Specifies the DS1/DS3 clocking mode.

Values **looptiming**
The recovered receive clock from the DS1/DS3 is used as the transmit clock.

localtiming
A local (to the DS1/DS3 interface) clock source is used on the DS1/DS3 transmit signal.

throughtiming
The transmit DS1/DS3 clock is derived from the recovered receive clock of another DS1/DS3 interface. Interfaces that are designated as eligible clock sources cannot be set to through timing.

Default **looptiming (DS3) throughtiming (DS1)**

Location **ds1-profile**, **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

unit-mode

Specifies whether the unit is configured as a CO or CPE device.

Default **For a BAN, the default is CO. For a Z-Edge, the default is CPE.**

Access This parameter is read-write.

Location **ds3-profile**

Products BAN, MALC, Raptor, Sechtor 100A

See Also config-line-rate, fix-bit-enabled

DSL

config-line-rate

The SDSL line rate.

Values **line-rate-144kbps, line-rate-160kbps, line-rate-192kbps,
line-rate-208kbps, line-rate-224kbps, line-rate-256kbps,
line-rate-272kbps, line-rate-320kbps, line-rate-368kbps,
line-rate-384kbps, line-rate-400kbps, line-rate-416kbps,
line-rate-528kbps, line-rate-768kbps, line-rate-784kbps,
line-rate-1040kbps, line-rate-1152kbps, line-rate-1168kbps,
line-rate-1536kbps, line-rate-1552kbps, line-rate-1568kbps,
line-rate-2320kbps, line-rate-176kbps, line-rate-240kbps,**

line-rate-288kbps, line-rate-304kbps, line-rate-336kbps, line-rate-352kbps, line-rate-432kbps, line-rate-464kbps, line-rate-496kbps, line-rate-560kbps, line-rate-592kbps, line-rate-624kbps, line-rate-656kbps, line-rate-688kbps, line-rate-720kbps, line-rate-752kbps, line-rate-816kbps, line-rate-848kbps, line-rate-880kbps, line-rate-912kbps, line-rate-944kbps, line-rate-976kbps, line-rate-1008kbps, line-rate-1072kbps, line-rate-1104kbps, line-rate-1136kbps, line-rate-1200kbps, line-rate-1232kbps, line-rate-1264kbps, line-rate-1296kbps, line-rate-1328kbps, line-rate-1360kbps, line-rate-1392kbps, line-rate-1424kbps, line-rate-1456kbps, line-rate-1488kbps, line-rate-1520kbps, line-rate-1584kbps, line-rate-1616kbps, line-rate-1648kbps, line-rate-1680kbps, line-rate-1712kbps, line-rate-1744kbps, line-rate-1776kbps, line-rate-1808kbps, line-rate-1840kbps, line-rate-1872kbps, line-rate-1904kbps, line-rate-1936kbps, line-rate-1968kbps, line-rate-2000kbps, line-rate-2032kbps, line-rate-2064kbps, line-rate-2096kbps, line-rate-2128kbps, line-rate-2160kbps, line-rate-2192kbps, line-rate-2224kbps, line-rate-2256kbps, line-rate-2288kbps

Default **line-rate-1552kbps**

Access This parameter is read-write.

Location **sdsl-config**

connect-mode

The connection mode compatibility.

Values **basic-2b1q-mode**
The basic operating mode.

globespan-neg-mode
The globespan mode, when the CO and the CPE can have different rates that sync on the lower rate.

copper-mtn-mode
The operating mode compatible with Copper Mountain products.

flowpoint-mode
The operating mode compatible with FlowPoint Corporation equipment.

Default **flowpoint-mode**

Access This parameter is read-write.

Location **sdsl-config**

decoder-coeffA

The 21 bit value corresponding to the decoder coefficient A.

Default **The ANSI HDSL2 default**

Access read-write

Location **hds12-config**

decoder-coeffB

A 21 bit value corresponding to the decoder coefficient B.

Default **The ANSI HDSL2 default**

Location **hds12-config**

fix-bit-rate

Normally, if the central office (CO) and CPE select different line rates at startup, the lower of the two rates is selected. The **fix-bit-rate** parameter enables a CO unit to override the default procedure and require startup at the rate specified in **config-line-rate**.

Values **fix-bit-disable**

This value enables automatic baud rate adaption. If the CO and CPE devices have different line rates at startup, the lower of the two rates will be selected.

fix-bit-enable

This value is used for static (set) baud rates.

Default **fix-bit-disable**

Access This parameter is read-write.

Location **sdsl-config profile**

Notes This setting applies only if the unit is configured as a CO device.

See Also **config-line-rate**, **unit-mode**

frame-sync-word

A 10-bit number indicating the frame sync word used.

Default **The HDSL2 standard.**

Location **hdsl2-config**

framer-type

Specifies the type of framer used.

Values **atm-clear-channel**

Uses direct cell mapping

atm-dllc

Uses DLCC framing specification.

> **atm-g991-1**
> Uses framing specified in G.991.1

Default **atm-clear-channel**

Access This parameter is read-write.

Location **sdsl-config**

line-status-trap-enable

Specifies whether a line status trap should be sent whenever the DSL line goes up or down. Note that this setting does not apply to line status traps sent during system bootup. During bootup, line status traps are not sent.

A DSL link down trap has a moderate severity level and a link up trap has a low severity.

Values **enabled**
DSL line status change traps should be generated for this interface.

disabled
DSL line status change traps will not be generated for this interface.

auto
For ADSL, a trap is generated on a line status change which is not due to a dying gasp.

Default **enabled**

line-type

The DSL type supported on this interface.

Values **shdsl**
SHDSL. Not compatible with **shdsllatest** firmware.

sdsl
SDSL. Not compatible with **sdsllatest** firmware.

shdsllatest
Compatible with future versions of firmware code. Required for autobaud.

sdsllatest
Compatible with future versions of firmware code. Required for autobaud.

Default **shdsllatest**

Access This parameter is read-write.

Location **dsl-config**

Notes Refer to the release notes for your device firmware revision levels.

ntr

Network timing recovery (NTR) specifies that the system synchronizes with an external (network) clocking source.

Values **ntr-enable**
the system synchronizes with the network.

ntr-disable
the system relies on its own clocking source.

Default **ntr-disable**

Location **sdsl-config**

pointtopoint

Specifies whether the interface is point-to-point.

Values **true**

false

Default **false**

Access This parameter is read-write.

Location **ip-interface-record**

Notes Configure DSL interfaces as **pointtopoint**.

power-scale

Adjusts transmit power in small increments to compensate for minor differences in power between units. The formula for the adjustment is:

Power scale $= 29952 * 10^{([\text{adjustment in dB}]/\ 20)}$

The following values are recommended for different loop lengths.

Values **17664**
For loop lengths from 0 to 10 feet (0 to 3.05 meters). Corresponds to -3.39dB.

20992
 For loop lengths less than 4000 feet (1219.2 meters). Corresponds to -1.9dB.

29952
 For loop lengths greater than 4000 feet (1219.2 meters). Corresponds to -1.19dB.

Default **29952**

Access This parameter is read-write.

Location **sdsl-config**

stuff-bits

A four bit number for the stuff bits. The default is the HDSL2 standard, 1111'b.

Default **The HDSL2 standard, 1111'b.**

Location **hdsl2-config**, **hdsl2-status**

threshold-15min-lofs

The number of Loss of Framing seconds on a DSL interface within any given 15 minutes performance data collection period, which causes the SNMP agent to send a trap. Entering 0 will disable the trap.

Default **0**

Access This parameter is read-write.

Location **dsl-alarm**

threshold-15min-lols

The number of Loss of link seconds on a DSL interface within any given 15 minutes performance data collection period, which causes the SNMP agent to send a trap. Entering 0 will disable the trap.

Default **0**

Access This parameter is read-write.

Location **dsl-alarm**

threshold-15min-loss

The number of Loss of signal seconds on a DSL interface within any given 15 minutes performance data collection period, which causes the SNMP agent to send a trap. Entering 0 will disable the trap.

Default **0**

Access This parameter is read-write.

Location **dsl-alarm**

transmit-power-back-off-mode

Whether the transmit power backoff defined in the HDSL2 standard is used.

Values	**backoffdisable**
	backoffenable
	nochangebackoff
Default	**backoffdisable**
Location	**hdsl2-config**

unit-mode

Specifies whether the unit is configured as a Central Office (CO) or Customer Premise Equipment (CPE) device.

Values	**co**
	cpe
Default	**cpe**
Location	**dsl-config**

up-line-rate

The upstream DSL rate in bps on the interface.

Access	This parameter is read-only
Location	**dsl-status-profile**
See Also	**down-rate**

ELCP

audio-service

Defines a number of services for transporting audio traffic and signaling over an AAL2 CID.

Values	**enabled**
	disabled
Default	**enabled**
Location	**aal2-elcp-port**

isdn-channel-id

ISDN BRI ports.

Values	**0**
	D channel and POTS

1
>   First B channel

2
>   Second B channel

> **Location** **subscriber-voice-aal2-elcp**

line-group-id

The line group ID for this ELCP AAL2 connection.

> **Location** **subscriber-voice-aal2-elcp**

max-length-frame

Maximum length for frame mode data.

> **Location** **aal2-elcp-port**

max-sdu-length

Indicates the maximum size of the SSSAR-SDU, in octets, that is allowed to be reassembled.

> **Location** **aal2-elcp-port**

pcm-encoding

Voice encoding algorithm.

> **Values** **mulaw**
>
>   **alaw**
> **Default** **alaw**
> **Location** **aal2-elcp-port**

port-id

Identifies a port on the IAD side for this ELCP AAL2 connection.

> **Location** **subscriber-voice-aal2-elcp**

port-type

The port type for the IAD port for the current connection.

> **Location** **subscriber-voice-aal2-elcp**

preferred-ap-index

Index for the preferred audio encoding format within the Audio Profile.

Values **1**

Used for G.711 encoding

2

Used for G.726 encoding

Default **1**

Location **aal2-elcp-port**

voice-connection-type

This describes the connection type between the two voice endpoints. Where applicable the first endpoint refers to the line or premise side of the connection and the second endpoint refers to the central office side of the connection.

Values **aal2togr303**

AAL2 VPI/VCI/CID to GR-303 interface group/CRV.

aal2tov52

AAL2 VPI/VCI/CID to V5.2 interface/user port.

elcpaal2tov52

ECLP AAL2 to V5.2.

potstoaal2

POTs to AAL2.

isdntoaal2

ISDN to AAL2.

isdntov52

ISDN to V5.2 interface/user port

potstogr303

POTS to GR-303 interface group/CRV.

potstov52

POTS to V5.2 interface/user port.

elcpaal2tov52

ELCP AAL2 VPI/VCI/portId/portType to V52.

Location **subscriber-voice**

Ethernet

adminstatus

The administrative status of the Ethernet physical and logical interface.

Values **Up**
    The interface is enabled and up, and the status of the interface should become standby or operational

Down
    The interface is disabled and down, and the status of the interface should become shutdown.

Location **ether**

autoNegCap

The capabilities of the Ethernet interface that are advertised by this port. Note that multiple options can be specified by adding a plus (+) sign between entries.

This parameter also controls flow control, which is used to regulate the flow of traffic between endpoints. Flow control cause the transmitter to stop sending traffic if it receives a pause message from an overwhelmed far end.

For more information on flow control refer to IEEE 802.3-2000.

Values **bOther**
    Other or unknown

b100baseT4
    Advertise 100BASE-T4

b100baseT2
    Advertise 100BASE-T2 half duplex mode

b100baseT2FD
    Advertise 100BASE-T2 full duplex mode

b10baseT
    Advertise speed 10Mbps, duplex half and full

b10baseTFD
    Advertise speed 10Mbps, duplex full

b100baseTX
    Advertise 100BASE-TX half duplex mode

b100baseX
    Advertise 100BaseX

b100baseT
    Advertise speed 100Mbps, duplex half and full

b100baseTXFD
Advertise 100BASE-TX full duplex

b100baseXFD
Advertise 100BaseX full duplex

b100baseTFD
Advertise speed 100Mbps, duplex full

b1000baseX
Advertise 1000BaseX full duplex

b1000baseT
Advertise 1000Mbps, duplex full

b1000baseXFD
1000BaseX full duplex

b1000baseTFD
Advertise speed 1000Mbps, duplex full

bFdxPause
Advertise pause for full duplex links

bFdxBPause
Advertise Full (symmetric and asymmetric) flow control

bFdxAPause
Advertise Asymmetric flow control

bFdxSPause
Advertise Symmetric flow control

autonegstatus

Enables autonegotiation. When enabled, the interface will negotiate the
options specified in the **autoNegCap** parameter.

Values **enabled**
Negotiate link attributes with remote partner. Final link rate, duplex, and
flow control, are determined by the advertised capabilities on each end.
The link will settle on a speed/duplex based on the hierarchy described in
the IEEE 802.3-2000 document.

disabled
Do not negotiate. Link speed and duplex will be forced to the parameters
indicated in the 'mauType' field. If the other end does not advertise those
parameters (when in autonegotiate mode), or if the other end wants to
force the link to a different speed/duplex combination, there will no link.

Default **enabled**

Location **ether**

Notes If set to **disabled**, the interface is the same as specified in the **ifType**
parameter.

clksrc

Determines which side of the link will provide clocking for the link.

If both sides are configured for automatic, both ends of the link negotiate which will be the master and which will be the slave based on the rules in IEEE 802.3-2000. If both sides are configured the same (either as master or as slave) the link will not be established.

Values **automatic**
The clock source is selected based on the rules in the IEEE 802.3-2000. This is the recommended setting.

master
The local side will attempt to provide clock for the link.

slave
The local will attempt to recover clock from the clock generated by the far end of the link.

Default **automatic**

Location **ether**

Notes Applies to Gigabit Ethernet ports only.

ifType

The type of Ethernet. Should be set to the same value as the mauType.

Values **mauOther**
Supported on UTP

mau10Baset
Supported on UTP

mau10Basethd
Supported on UTP

mau10Basetfd
Supported on UTP

mau100Basetxhd
Supported on UTP

mau100Basetxfd
Supported on UTP

mau1000basethd
Supported on UTP

mau1000basetfd
Supported on UTP

mau1000baselxhd
Supported on fiber

mau1000baselxfd
Supported on fiber

mau1000basesxhd
Not supported

mau1000basesxfd
Not supported

Location **ether**

mauType

Ethernet physical interface type.

Values **mauOther**
Supported on UTP

mau10Baset
Supported on UTP

mau10Basethd
Supported on UTP

mau10Basetfd
Supported on UTP

mau100Basetxhd
Supported on UTP

mau100Basetxfd
Supported on UTP

mau1000basethd
Supported on UTP

mau1000basetfd
Supported on UTP

mau1000baselxhd
Supported on fiber

mau1000baselxfd
Supported on fiber

mau1000basesxhd
Not supported

mau1000basesxfd
Not supported

Default **mau100basetxfd (for all Ethernet interfaces except Gigabit)**

mau1000baselxfd (Gigabit Ethernet)

Location **ether**

protection-fast-timer

The protection messages fast timer. The fast timer is used for protection protocols.

Values **1 to 20 milliseconds**

Default **10 milliseconds**

protection-slow-timer

This timer indicates how often the node sends out slow status messages when a protection event occurs. This value is in 50 millisecond (ms) intervals. For example, a value of 100 equals 5 seconds.

Values **1 to 200 (in 50 millisecond units)**

Default **20 (1 second)**

protection-wtr

The length of time in seconds, to remain in the protection state, after the cause for the switch to protection is removed. This prevents protection switch oscillations.

Values **0 to 1440 seconds**

Default **10 seconds**

remotefault

Indicates the state of the remote end of the Ethernet link.

Values **noerror**
Link is operating normally.

offline
Other end is not attempting to establish a link.

linkfailure
Failed to establish a link. This could be caused by different settings on either end of the link.

autonegerror
Failed to establish a link because a matching combination could not be found in the advertised autonegotiation capabilities.

Location **ether**

restart

Forces auto-negotiation to begin link renegotiation. If auto-negotiation signaling is disabled, this parameter has no effect.

Values **restart**
Forces auto-negotiation to begin link renegotiation. The Ethernet
interface also renegotiates the link whenever the **ether** profile is saved.

norestart
This value is not supported.

Location **ether**

reversion-mode

The reversion mode determines if traffic resumes processing in the normal
direction after a protection event is cleared.

Values **true**

false

wrap-config

Indicates the configured protection mode, steering or wrapping, in a MAC
that supports both modes.

If the node detects another station on the ring that has a protection
configuration that conflicts with its own, the station will generate a defect to
higher layers.

Values **true**
The ring is configured for wrapping. The station will perform wrap
protection during ring failures. In a wrapping configuration, the two
nodes on either end of the disrupted link will "wrap" the traffic back away
from the broken link.

false
The ring is configured for steering. In a steering configuration, each node
of the ring is responsible for determining how to route traffic around the
disrupted link. For large networks, traffic could be slower to recover if
steering is used.

FXS/FXO

fxo-cfg-signal-type

The signaling type of foreign exchange office (FXO) interface.

Values **fxoloopstart**
Loop start.

fxogroundstart
Ground start.

> **fxodpt**
> > Dial Pulse Terminating. This option allows the unit to attach to incoming one way trunks from a PBX, key system, or a telephone set.

Default   **fxoloopstart**

Location   **analog-fxo-cfg-profile**

if-cfg-impedence

Specifies the terminating impedance of analog voice interfaces.

Values   **ohms600complex**
> 600 Ohms + 2.16uF

     ohms900complex
> 900 Ohms + 2.16uF

Default   **ohms900complex**

Location   **analog-if-cfg-profile**

if-cfg-trunk-conditioning

Specifies whether the FXS/FXO port should send the idle pattern to the network upon declaration of a Carrier Group Alarm (CGA) on the WAN link to which the port is assigned.

Values   **off**

     idle

     busy

Default   **idle**

Location   **analog-if-cfg-profile**

if-maintenance-mode

Indicates the maintenance modes of the analog voice interface.

Values   **off**

     ifdigitalloopback

     ifanalogloopback

Default   **off**

Location   **analog-if-cfg-profile**

if-cfg-pcm-encoding

Line encoding.

Values **alaw**
For E1.

mulaw
For T1.

Default **mulaw**

Location **analog-if-cfg-profile**

Notes This parameter can also be set with the **voice add** command when the voice connection is created.

if-cfg-receive-tlp

The receive TLP is the signal level TO the customer premises equipment (CPE). The receive signal range is +3 dB to -9 dB.   A positive number adds gain, a negative number adds loss to the analog signal after decoding from PCM. For example, a receive TLP setting of -6 dB will generate a voice signal at -6 dB level.

Values **fxsrtlpn9db**

fxsrtlpn8db

fxsrtlpn7db

fxsrtlpn6db

fxsrtlpn5db

fxsrtlpn4db

fxsrtlpn3db
(not supported on the POTS 900 card)

fxsrtlpn2db
(not supported on the POTS 900 card)

fxsrtlpn1db

fxsrtlp0db

fxsrtlp1db

fxsrtlp2db

fxsrtlp3db

rtlpnummeric

Default **fxsrtlpn6db**

Location **analog-if-cfg-profile**

if-cfg-receive-tlpNum

Receive Transmission Level Point (RTLP) settings control the amount gain or loss added to the incoming signal after it is decoded to analog. To increase the signal level set the RTLP setting to higher values. The default is 0 dB.

Values **-160 to 85 (in tenths of dB)**

Default **0 dB**

Location **analog-if-cfg-profile**

if-cfg-transmit-tlp

The transmit TLP is the signal level from the customer premises equipment (CPE). The transmit signal range is +9 dB to -3 dB. A positive number adds loss, a negative number adds gain to the analog signal before encoding to PCM. For example, a transmit TLP setting of +3 dB will set a loss of 3 dB to generate a 0 dB PCM signal.

Values **fxsTtlp9db**
    (not supported on the POTS 900 card)

    fxsTtlp8db
    (not supported on the POTS 900 card)

    fxsTtlp7db

    fxsTtlp6db

    fxsTtlp5db

    fxsTtlp4db

    fxsTtlp3db

    fxsTtlp2db

    fxsTtlp1db

    fxsTtlp0db

    fxsTtlpN1db

    fxsTtlpN2db

    fxsTtlpN3db

Default **fxsttlp0db**

Location **analog-if-cfg-profile**

if-cfg-transmit-tlpNum

Transmit Transmission Level Point (TTLP) controls the amount of gain or loss added to a voice signal before it is encoded to digital PCM. To increase the signal level, reduce the TTLP setting to lower value.

Values	**-175 to 70 (in tenths of dB)**
Default	**0 dB**
Location	**analog-if-cfg-profile**

ring-back

Specifies whether ring back is requested.

Values	**on**
	off
Default	**off**
Location	**analog-fxs-cfg-profile**

ring-frequency

The ring frequency used in the FXS interface.

Values **ringFrequency25**
Ring frequency of 25 Hz.

ringFrequency50
Ring frequency of 50 Hz.

ringFrequency20
Ring frequency of 20 Hz

ringFrequency30
Ring frequency of 30 Hz.

Default **ringFrequency20**

Location **analog-fxs-cfg-profile**

signal-type

The signaling of the FXS interface.

Values **fxsLoopStartsloop**
Loop start.

fxsGroundStart
Ground start.

fxsLoopStartFd

fxsGroundStartAutomatic
Used with equipment requiring fast response time to the Central Office
(CO).

fxsGroundStartImmediate
Used with equipment requiring fast response time to the station or private
branch exchange (PBX).

fxsdnLoopStart
Loop start in FXSDN mode.

fxsdnLoopStartFd

fxsdnGroundStart
Ground start in FXSDN mode

fxsdnGroundStartImmediate
Ground start immediate in FXSDN mode

fxsdnwinkLoopStart
Loop start in fxsdnwink (Foreign Exchange Subscriber Defined Wink start). This is the same type of signaling as FXSDN. It provides 150 millisecond delay, then a 200 ms wink acknowledgement to the central office when the FXS port sees an off-hook condition from central office. The system requires a ringing generator for this option.

fxsdnwinkLoopStartFd

fxsdnwinkGroundStart
Ground start in FXSDNWINK mode

fxsdnwinkGroundStartImmediate
Ground start immediate in FXSDNWINK mode.

fxstr08SingleParty
TR08 is Frame format signaling and data link as defined in TR-TSY-00008 Mode 1 for circuits using AT & T SLC-96 facilities. This option is for single-party service. This option connects the port to one way outgoing trunks from a PBX, CENTEREX, key system, or telephone set to an SLC channel. The SLC96 mode also must be active on the associated WAN interface.

fxstr08UniversalVoiceGrade
Toll-quality voice for SLC-96.

fxstr08UniversalVoiceGradeAutomatic
Used with some non-Bell switches for SLC-96.

Default **fxsLoopStartsloop**

Access This parameter is read-write

Location **analog-fxs-cfg-profile**

voice-pots-line-group-id

The line group identifier for the POTS line, equal to the ifIndex of the line.

Access This parameter is read-write.

Location **subscriber-voice-pots**

GR303

adminStatus

A value that is received from a remote management system (Zhone Management System) to place the unit in service or out of service.

Values **inService**

outOfService

Default **outOfService**

Access This parameter is read-write.

Location **gr303-interface-group**

channel-number

The channel number for this array.

Values **1 to16, inclusive**

control-channel-t303

The time that the Integrated Digital Terminal (IDT) and the Remote Digital Terminal (RDT) will wait for a reply to a SETUP message. This value depends upon the IDT.

Values **700, 1200, 1700, 2200, 2700, 3200, 3700, 4200, or 4700 ms.**

Default **700**

Access This parameter is read-write.

Location **gr303-ig-control-channel**

control-channel-t396

The time that the RDT will wait for a reply to a SETUP message after the expiration of the T303 timer.

Values **700, 1700, 2700, 3700, 4700, 5700, 6700, 7700, 8700, 9700, 10700, 11700, 12700, 13700, or 14700 ms.**

Default **14700**

Access This parameter is read-write.

Location **gr303-ig-control-channel**

ctrlChannel

The GR-303 IG control channel array. This array includes the
control-channel-t303, **control-channel-t396**,
sapi-0-max-outstanding-frames, **sapi-1-max-outstanding-frames**,
sapi-0-n-200, **sapi-1-n-200**, **sapi-0-t-200**, **sapi-1-t-200**, **sapi-0-t-203**,
sapi-1-t-203, **sapi-0-pps-mode**, and **sapi-1-pps-mode** parameters.

Location **gr303-interface-group**

ds1LM:array[1..28]

The array for T1/DS1 circuits. The maximum number of DS1 trunks allowed
per IG is 28. This array includes the **dsn-lg-id**, **channel-number**, and **role**
parameters.

Location **gr303-interface-group**

idt-admin-state

The administrative state of the IDT on the remote side of the GR-303
interface.

Values **inService**
        The default for Call Reference Values (CRV) whose IG has
        working-mode set to **passive**.

   outOfService
        The default for CRVs whose IG has **working-mode** set to **active**.

Default **outOfService**

Access This parameter is read-write.

Location **gr303-ig-crv**

local-admin-state

The administrative state of the CRV on the local (RDT) side.

Values **inService**

   outOfService

Default **outOfService**

Access This parameter is read-write.

Location **gr303-ig-crv**

logical-id

This is an unique number to identify each physical DS1 within an Interface
Group between RDT and IDT.

Values	**1 to 28, inclusive.**
Access	This parameter is read-write.
Location	**gr303-interface-group**
Notes	The DS1 Logical ID must have a value in the range of 1..28. The value 1 is reserved for the primary DS1 and cannot be used by any other DS1s.

name-id

A name assigned by the installer. It must be unique to the system. This value is a string.

rdt-admin-state

The administrative state of the RDT on the local side of the GR-303 interface.

Values	**inService**
	outOfService
Default	**outOfService**
Access	This parameter is read-write.
Location	**gr303-ig-crv**

remote-admin-state

The administrative state of the CRV on the remote (IDT) side.

Values	**inService**
	The default for CRVs whose IG has **working-mode** set to **passive**.
	outOfService
	The default for CRVs whose IG has **working-mode** set to **active**.
Access	This parameter is read-only.
Location	**gr303-ig-crv**

role

The role the DS1 line assumes.

Values	**payload**
	secondary
	primary
Default	**payload**
Access	This parameter is read-write.
Location	**gr303-interface-group**

sapi-0-max-outstanding-frames

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum number of outstanding EOC information frames at layer 2. This LAPD parameter facilitates remote provisioning of the layer 2 connection.

Values	**1 to 10, inclusive.**
Default	**7**
Access	This parameter is read-write.
Location	**gr303-ig-control-channel**

sapi-0-n-200

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum number of retransmissions for a frame at layer 2. This LAPD parameter facilitates remote provisioning of the layer 2 connection.

Values	**1 to 10, inclusive.**
Default	**3**
Access	This parameter is read-write.
Location	**gr303-ig-control-channel**

sapi-0-pps-mode

The DS1 protection switching option.Facility protection switching enables traffic on a failed DS1 to be moved to one or more alternate DS1 facilities.

Values	**inhibit**
	notInhibited
	notApplicable
Default	**notInhibited**
Access	This parameter is read-write.
Location	**gr303-ig-control-channel**

sapi-0-t-200

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum layer 2 wait time for an acknowledgement of a transmitted frame in milliseconds. This LAPD parameter facilitates remote provisioning of the layer 2 connection.

Values	**100, 150, 200, 250, 300, or 350.**
Default	**150**
Access	This parameter is read-write.

Location   **gr303-ig-control-channel**

sapi-0-t-203

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum layer 2 idle time, in seconds, before connection verification is necessary. This LAPD parameter facilitates remote provisioning of the layer 2 connection.

Values   **10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, or 300.**

Default   **30**

Access   This parameter is read-write.

Location   **gr303-ig-control-channel**

sapi-1-max-outstanding-frames

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum number of outstanding TMC information frames at layer 2. This LAPD parameter facilitates remote provisioning of the layer 2 connection. (This parameter is not supported.)

Values   **1 to 7, inclusive.**

Default   **7**

Access   This parameter is read-write.

Location   **gr303-ig-control-channel**

sapi-1-n-200

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum number of retransmissions for a frame at layer 2. This LAPD parameter facilitates remote provisioning of the layer 2 connection. (This parameter is not supported)

Values   **1 to 10, inclusive**

Default   **3**

Access   This parameter is read-write.

Location   **gr303-ig-control-channel**

sapi-1-pps-mode

The DS1 protection switching option. Facility protection switching enables traffic on a failed DS1 to be moved to one or more alternate DS1 facilities.

Values	**inhibit**
	notInhibited
	notApplicable
Default	**notInhibited**
Access	This parameter is read-write.
Location	**gr303-ig-control-channel**

sapi-1-t-200

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum layer 2 wait time for an acknowledgement of a transmitted frame in milliseconds. This LAPD parameter facilitates remote provisioning of the layer 2 connection.

Values	**100, 150, 200, 250, 300, or 350.**
Default	**150**
Access	This parameter is read-write.
Location	**gr303-ig-control-channel**
Notes	Unsupported

sapi-1-t-203

For SAPI=1 and SAPI=2, for both the active and standby data links, per IG, the maximum layer 2 idle time, in seconds, before connection verification is necessary. This LAPD parameter facilitates remote provisioning of the layer 2 connection.

Values	**10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, or 300.**
Default	**30**
Access	This parameter is read-write.
Location	**gr303-ig-control-channel**
Notes	Unsupported

signal-type

The signaling method used by the CRV. This value is set by the voice switch through the EOC or it is set in the **gr303-ig-crv** profile.

Values	**unknown**
	loopstart
	groundstart
	loopreversebattery
	electronicbesinessset
Default	**loopstart**
Access	This parameter is read-write.
Location	**gr303-ig-crv**

switch-type

The switch vendor for the Interface Group (IG).

Values	**unknown**
	lucent5Ess
	nortelDms100
Default	**unknown**
Access	This parameter is read-write.
Location	**gr303-interface-group**

working-mode

Indicates whether the Integrated Digital Terminal (IDT) can configure the Remote Digital Terminal (RDT) for Call Reference Values (CRV) using common management information service (CMIS) over the Embedded Operations Channel (EOC).

Values	**active**
	The IDT can configure the RDT for CRV over the EOC channel.
	passive
	CRVs can only be configured locally.
Default	**passive**
Access	This parameter is read-write.
Location	**gr303-interface-group**

IfIndex

adminStatus

The default value for the upper ifIndex associated with the **upperiftype**.

Values	**up**
	down
	testing
Default	**down**
Access	This parameter is read-write.
Location	**if-default**

ifindex

The interface number of the port or port/subport that uniquely identifies the interface across the system.

Access	This parameter is read-only.
Location	**physical-to-ifindex**, **if-translate**

ifname

Name of the interface.

Allowable characters are:
0123456789abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ:.- and _.

.Do not begin if-name with a ".".

If an invalid character is used, it will be replaced with the "-" character. If the repaired if-name is not unique, the ifIndex value is appended to the if-name to make the name unique.

Access	This parameter is read-only.
Location	**if-translate**

iftype-extension

The Zhone-proprietary interface type.

Values	**ianaiftype_other**
	zhoneiftype_linegroup
	zhoneiftype_none
Default	**zhoneiftype_none**
Access	This parameter is read-only.
Location	**if-translate**

numunits

Number of units for this association. This indicates the number of ifIndexes created for this particular upper and lower interface pair on the card type. For example, 48 for the SDSL/SHDSL card.

Values **0 to 2147483647, inclusive**

Access This parameter is read-only.

Location **if-default**

physical-flag

Indicates whether the interface is a physical layer.

Values **true**
The interface is a physical layer.

false
The interface is a not a physical layer.

Default **false**

Access This parameter is read-only.

Location **if-translate**

port

The port number defines the physical port number at the shelf-slot location for the line profile. Port numbers begin with 1 and are numbered sequentially.

Values **1 to 262143, inclusive**

Access This parameter is read-only

Location **if-translate**

Notes 0 (zero) is invalid.

redundancy-param1

For physicals, this parameter is a weight value indicating which physical will be the active and which physical will be the standby for redundancy. For linegroups and pathgroups, this parameter indicates how to perform reversion.

Values **-1**
Do not revert the redundancy switch.

0
Revert back to the restored connection as soon as it is available.

Positive number
Number of seconds to wait after the restored connection is available until reverting back to that connection.

	Access	This parameter is read-write
	Location	**if-translate**

shelf

The physical address or number of the shelf where the desired line is located. A Zhone system is limited to a maximum of 255 shelves. The first shelf in a system is shelf 1.

Access	This parameter is read-only.
Location	**if-translate**

slot

The physical slot on the system.

Values	**1 to 17, inclusive**
Location	**if-translate**

subport

Used to identify multiple logical subports on a physical port.

Access	This parameter is read-only.
Location	**if-translate**
Notes	A value of 0 (zero) indicates that there is no subport.

IMA

groupSymmetry

The symmetry of the Inverse Multiplexing over ATM (IMA) group. Symmetry determines whether the transmit and receive sides of the IMA link must be configured and how traffic is sent over the links.

Values **symmetricOperation**
Both transmit and receive IMA links must be configured and the system can transmit and receive traffic only if both sides of the connection are active.

asymmetricOperation
Both transmit and receive IMA links must be configured, but the system can transmit and receive traffic even if both sides of the connection are not active.

asymmetricConfiguration

Transmit and receive links do not have to be configured and the system can transmit and receive traffic even if both sides of the connection are not active.

Default **symmetricOperation**

Access This parameter is read-write.

Location **ima-group-profile**

Notes Refer to ATM Forum IMA v1.1, Section 5.2.2.7.

minNumTxLinks

Minimum number of transmit links required to be Active for the IMA group to be in the Operational state. If the number of active links falls below this value, the link drops and the redundant link (if any) takes over.

Values **1 to 32**

Access This parameter is read-write.

Location **ima-group-profile**

Notes Refer to ATM Forum IMA v1.1, Section 10.2.1.1.

Products MALC

minNumRxLinks

Minimum number of receive links required to be active for the IMA group to be in the operational state. If the number of active links falls below this value, the link drops and the redundant link (if any) takes over.

Values **1 to 32**

Access This parameter is read-write.

Location **ima-group-profile**

Notes Refer to ATM Forum IMA v1.1, Section 10.2.1.1.

txClkMode

Transmit clocking mode used by the near-end IMA group.

Values **itc**

Independent Transmit Clock. Indicates that IMA links do not all use the same transmit clock. Each IMA link derives clock from its associated T1 interface.

ctc

Common Transmit Clock. Indicates the transmit clock of all IMA links are derived from the same source. When set to **ctc**, the MALC derives the IMA clocking from the system clock.

Default	**itc**
Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 7.

txImald

The IMA ID currently in use by the near-end IMA function.

Values	**0 to 255**
Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 5.2.2.6

txFramLength

The frame length to be used by the IMA group in the transmit direction. Can only be set when the IMA group is startup.

Values	**m32**
	32 cells.
	m64
	64 cells.
	m128
	128 cells.
	m256
	256 cells.
Default	**m128**
Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 5.2.2.4.2

diffDelayMax

The maximum number of milliseconds of differential delay among the links that can be tolerated on this interface.

Values	**0 to 100**
Default	**25**
Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 9.2 on page 45.

alphaValue

The number of consecutive invalid ICP cells allowed before the system changes from a Sync state to a Hunt state.

Values **1 or 2**

Default **2**

Access This parameter is read-write.

Location **ima-group-profile**

Notes Refer to ATM Forum IMA v1.1, Section 11 on page 68

betaValue

The number of consecutive ICP cells with errors allowed before the system changes from a Sync state to a Hunt state.

Values **1 to 5**

Default **2**

Access This parameter is read-write.

Location **ima-group-profile**

Notes Refer to ATM Forum IMA v1.1, Section 11.

gammaValue

The number of consecutive valid ICP cells allowed before the system changes from a PreSync state to the Sync state.

Values **1 to 5**

Default **1**

Access This parameter is read-write.

Location **ima-group-profile**

Notes Refer to ATM Forum IMA v1.1, Section 11.

testLinkIfIndex

Indicates the interface used to transmit the test pattern. The test pattern is looped back from the far end device over each active link in the IMA group. Note that this value is not the same as the txImaId value.

Values **A valid interface on the system in the form shelf-slot-port-subport/type**
This is the link whose link identifier (LID) value is inserted in the Tx LID field of the transmitted ICP cells.

Default **0**

Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 13.

testPattern

Specifies the transmit Test Pattern in an IMA group loopback operation. A value in the range 0 to 254 designates a specific pattern.

Values	**-1 to 254**
	-1 indicates that the test pattern is randomly generated.
Default	**-1**
Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 13.

testProcStatus

Enables or disables the Test Pattern Procedure.

Values	**disabled**
	Deactivates the test pattern procedure.
	operating
	Activates the test pattern procedure.
Default	**disabled**
Access	This parameter is read-write.
Location	**ima-group-profile**
Notes	Refer to ATM Forum IMA v1.1, Section 13.

txTimingRefLink

The ifIndex of the receive timing reference link to be used by near-end for IMA data cell clock recovery toward the ATM layer. A value of 0 (zero) indicates no link has been configured in the IMA group, or the receive timing reference link has not yet been detected.

Values	**0**
Default	**0**
Location	**ima-group-profile**
Notes	This parameter is not supported.

rxTimingRefLink

The ifIndex of the transmit timing reference link to be used by near-end for IMA data cell clock recovery toward the ATM layer. A value of 0 (zero) indicates no link has been configured in the IMA group, or the receive timing reference link has not yet been detected.

Values	**0**
Default	**0**
Location	**ima-group-profile**
Notes	This parameter is not supported.

IP

addr

The address of the IP interface.

Location	**ip-interface-record**

alternateipaddress

A second IP address for this device that can be used by managers to address the device. This address may be an IP address of an existing IP interface.

Location	**system**
Notes	A manager can communicate with the device using any of the configured IP interface addresses. However, if the physical line fails or the card is inactive, communication with the manager may time-out.

bcastaddr

The IP broadcast address used for sending data grams on the (logical) interface associated with the IP interface. The broadcast address is determined by the IP address and the netmask. It should always be set to an IP address which is the network address of the interface that has all ones in the host portion of the address.

Location	**ip-interface-record**

bcastenabled

Specifies whether broadcasts are enabled on this interface.

Values	yes
	no
Default	yes
Location	**ip-interface-record**

destaddr

The destination address for point-to-point IP interfaces.

Location	**ip-interface-record**
Notes	This parameter is ignored if the IP interface is not point-to-point.

dhcpserverenable

Enables or disables DHCP server functionality.

Values	**true**
	false
Default	**false**
Access	This parameter is read-write.
Location	**ip-interface-record**
Notes	If this parameter is set to **true**, then **ipaddrdynamic** parameter has to be set to **static**. If this parameter is set to **false**, then **ipaddrdynamic** parameter can be set to **static**, **ppp**, or **dhcpclient**.
See Also	**ipaddressdynamic**

egressfilterid

The index of the egress filter spec provisioned for this interface.

Values	**0 to 2147483647, inclusive**
	A value of 0 (zero) means that there is no egress filter provisioned for this interface.
Default	**0**
Access	This parameter is read-write
Location	**ip-interface-record**

enable

Specifies the administrative state of the static route.

Values	**enabled**
	The static route is used by the system to make forwarding decisions.

> **disabled**
> The static route is not used by the system to make forwarding decisions.

Default **enabled**

Location **static-route**

farendaddr

The IP address of the interface on the far end, or receiving end, of this interface. This information is used for Zhone Automatic Provisioning (ZAP).

Access This parameter is read-write

Location **ip-interface-record**

ipaddrdynamic

The mode by which the IP address is discovered by the system.

Values **static**
> The IP address is static.

> **dhcpclient**
> The IP address is discovered from a DHCP server.

> **ppp**
> Use PPP to obtain an IP address.

Default **static**

Access This parameter is read-write

Location **ip-interface-record**

See Also **dhcpserverenable**

ipfwdenabled

Specifies whether IP forwarding is enabled on this interface.

Values **true**

       false

Default **true**

Access This parameter is read-write

Location **ip-interface-record**

ingressfilterid

The index of the ingress filter spec provisioned for this interface.

Values	**0 to 2147483647, inclusive**
	A value of 0 (zero) means that there is no ingress filter provisioned for this interface.
Default	**0**
Access	This parameter is read-write
Location	**ip-interface-record**

ipUnnumberedinterface

This value specifies where to borrow the local IP address of the point-to-multipoint link.

Location	**ip-unnumbered-record**

local-ipaddr

A local (or private) address of a host behind the Z-Edge 64, which is the real destination.

Location	**pat-bind**

local-port

The port number on the local host where packets should be forwarded.

Location	**pat-bind**

maxVideoStreams

The maximum number of unique multicast (video) streams to which this interface has subscribed.

Default	**0**
Access	This parameter is read-write.
Location	**ip-interface-record**

mcastcontrollist

List of Mcast-control-ids this IP Interface record is associated with.

Access	This parameter is read-write.
Location	**ip-interface-record**

mcastenabled

Specifies whether multicast is enabled on this interface.

Values	**true**
	false
Default	**true**
Access	This parameter is read-write.
Location	**ip-interface-record**

mcastfwdenabled

Specifies whether multicast forwarding is enabled on this interface.

Values	**true**
	false
Default	**true**
Access	This parameter is read-write.
Location	**ip-interface-record**

metric

Metric for the route. The meaning of this value when static routes are redistributed to other protocols is protocol-dependent, and the resulting value after redistribution is determined by the route-maps in use for that protocol. Lower numeric values for this number indicate more preferred routes.

Default	**2147483647**
Access	This parameter is read-write.
Location	**static-route**

mru

The size, in octets, of the largest packet which can be received on the IP interface. For interfaces used for network data grams, this is the size of the largest network datagram that can be received on the interface.

The default value depends on the type of interface and is the same as the default MTU for the interface.

Access	This parameter is read-write.
Location	**ip-interface-record**

multicastAgingPeriod

Multicast aging period (in tenths of seconds) for the specified VLAN. After the specified aging period is met, the VLAN address is deleted from the routing table.

Values	**0 to 2147483647 (in tenths of seconds)**
	A value of 0 indicates that aging is turned off.
Access	This parameter is read-create.
Location	**static-bridge**

natenabled

Specifies whether NAT is enabled on this interface.

Values	**true**
	false
Default	**false**
Access	This parameter is read-write.
Location	**ip-interface-record**

netmask

The subnet mask associated with the IP interface. The value of the mask is an IP address with all the network bits set to 1 and all the hosts bits set to 0.

Access	This parameter is read-write.
Location	**dhcp-server-subnet**, **ip-interface-record**

outgoingCOSOption

Specifies whether to overwrite the VLAN priority bits on packets bridged out this interface with the value specified in the outgoingCOSValue parameter. Values are disable and all. Disable indicates the VLAN priority bit is untouched. All overwrites all the VLAN priority bits on packets bridged out this interface with the value specified in the outgoingCOSValue parameter. The default is disable.

outgoingCOSValue

For tagged packets, specifies the value loaded into the priority field of the VLAN header. Values are 0 to 7 with 0 the lowest priority and 7 the highest. The default value is 0.

portType

The type of payload.

Values	**tcp**
	Transmission control protocol.

udp
   User datagram protocol.

Default **tcp**

Location **pat-bind**

public-ipaddr

The IP address that will be used in the Internet. (This should be the IP address of the DSL connection.)

Location **pat-bind**

public-port

The port on the Internet side that the public sees.

Location **pat-bind**

rdindex

The routing domain to which the IP interface belongs. An IP address is unique to a routing domain.

Location **ip-interface-record**

reasmmaxsize

The size of the largest IP datagram that this interface can reassemble from fragmented IP datagrams this interface receives.

Values **0 (zero) to 65535, inclusive**

Default **65535**

Access This parameter is read-write.

Location **ip-interface-record**

subnetgroup

The DHCP subnet group ID. It indicates which address pool grouping may be used for the CPE subnet.

Location **ip-interface-record**, **dhcp-server-subnet**

type

Defines the video stream type.

Values **normal**
   Join and leave when desired. Used for video.

> **always on**
> Always joined. Meant for Emergency Broadcast System (EBS) channel. Not meant for video.
>
> **periodic**
> Join and leave after task complete. For example, used to download the tv guide. Not meant for video.

Default	**normal**
Access	This parameter is read-write.
Location	mcast-control-entry

unnumberedindex

The index of the **ip-unnumbered-record** used to obtain the local-side unnumbered address.

Location	**ip-interface-record**

upperiftype

The value of ifType corresponding to the higher sublayer of the relationship, that is, the sublayer that runs on top of the sublayer identified by the corresponding instance of **loweriftype**.

Location	**if-default**

upperlayer

The *shelf-slot-port-subport/type* of the upper layer in the interface stack.

Location	**if-stack**

vlanId

The Virtual LAN Identifier for the IP Interface. If the VLAN ID specified is non-zero, all traffic destined to this interface should be configured with this VLAN ID.

Default	**0**
Access	This parameter is read-write.
Location	**ip-interface-record**
Products	MALC

vlanIDCOS

Specifies the value loaded into the priority field of the VLAN header when an untagged packet received on this interface is tagged (VLAN ID inserted) for

bridging. Values are 0 to 7 with 0 the lowest priority and 7 the highest. The default value is 0.

ISDN

isdn-env-func-start-address

The envelope function starting address that the ISDN primary rate access is assigned to.

Values **0 to 8175, inclusive.**

Access This parameter is read-write.

Location **v52-interface-group**

isdnds-cpath-id

If the user port is configured for ISDN, this parameter is equal to the associated C-path ID that carries Ds-type data. A value of 0 (zero) indicates that the user port is not configured to carry Ds-type data.

Values **0 to 48, inclusive.**

Access This parameter is read-write.

Location **v52-user-port**

line-group-id

Identifies the physical line or line group (primary and redundant secondary) used for data and voice traffic. This is a unique number that is assigned when a line redundancy group is provisioned. This enables administrators to locate the physical lines (defined by the line group entry ID) used by the subscriber.

The **line-group-id** is used to associate a subscriber with data and voice subscriber profiles.

Location **subscriber-voice-isdn**

ulc-port-type

Identifies the ULC port provisioning. There is one entry per ULC port.

Values **pots**

isdn

ebs

Default **isdn**

Location **ulc-config**

Notes	**isdn** is the only supported option.
Products	MALC

ulc-trap-enable

Enables the sending of line-level traps from the device to SNMP managers.

Values	**enabled**
	disabled
Default	**disabled**
Location	**ulc-config**
Products	MALC

voice-isdn-channel-id

The channel identifier for the connection.

Values	**0**
	Not applicable. This is the value for POTS.
	1
	D channel
	2
	B channel
	3
	B channel
Default	**0 (none)**
Location	**subscriber-voice-isdn**

voice-isdn-line-group-id

The line group identifier for the ISDN line, equal to the ifIndex of the line. Use the linegroup command to find the line group ID for an interface.

Location	**subscriber-voice-isdn**

voice-isdn-port-type

Defines the type of ISDN channel: D channel or B channel.

Values	**isdndchannel**
	isdnbchannel
Location	**subscriber-voice-isdn**

MTAC/Ring

ifIndex

Specifies the ifindex of the physical line to be tested. If no line is being tested, this value is 0.

Values **A physical interface on the system.**
In the format *shelf-slot-port-subport/type*

Default **0**

Access This parameter is read-write.

Location **mtac-profile**

Notes This parameter cannot be modified while a test is in progress.

The ability of a physical line to support a metallic test may vary depending on the cards installed and the external test equipment.

Products MALC

ringSource

The ifIndex of the interface from which clock can be derived. Only OC3, DS1, and DS3 interfaces can be used for this interface.

This interface will be used to drive the 8Khz backplane signal. The interface must be set to loop or local timing in order for it to be considered as the primary clock source. It must also be administratively turned on and be in an operational state.

Only one interface in the system can be the primary clock source at any given time.

Values **externalRingSourceLabel**

internalRingSourceLabel

Default **internalRingSourceLabel**

Access This parameter is read-write.

Location **system**

test_mode

Specifies metallic test mode for a given line. The test mode can be changed only if the **ifIndex** parameter is set to a nonzero value.

Values **mtacModeBridge**
The subscriber line is metallically connected to the MTAC test access port while the subscriber is in service. To avoid service interruption, the test head must be in high impedance (bridge) mode.

mtacModeLookIn
> The subscriber line is disconnected and the service port is metallically routed to the MTAC test access port. This allows the testing of the device service port using a external test head or where the test head represents the subscriber terminal.

mtacModeLookOut
> The device service port is disconnected and the subscriber line is metallically routed to the MTAC test access port. This allows the testing of line with or without a subscriber terminal.

mtacModeNone
> No MTAC test is in progress.

Default	**mtacModeNone**
Access	This parameter is read-write.
Location	**mtac-profile**
Products	MALC

Network Time Protocol

primary-ntp-server-ip-address

The IP address of the primary Network Time Protocol (NTP) server.

NTP, described in RFC 2030, synchronizes devices on the network with a timing source. When NTP is enabled, setting the system time with the **setdatetime** command is not allowed.

The device will get the time from the NTP server every hour. If the system clock has drifted more than 9 seconds from the source clock, the system time will be reset.

Values	**A valid IP address** A value of 0.0.0.0 disables NTP.
Default	**0.0.0.0**
Location	**ntp-client-config**
Products	BAN, MALC, Raptor, Sechtor 100A

secondary-ntp-server-ip-address

The IP address of the secondary NTP server. If the primary NTP server is not available, the BAN will use the secondary server.

Values	**A valid IP address** A value of 0.0.0.0 disables NTP.
Default	**0.0.0.0**

Location **ntp-client-config**

Products BAN, MALC, Raptor, Sechtor 100A

local-timezone

The time zone the device is operating in.

Values **internationalDateLineWest**
GMT-12:00 hours

nome
GMT-11:00

 hawaii
GMT-10:00

yukon
GMT-9:00

pacific
GMT-8:00

mountain
GMT-7:00

central
GMT-6:00

eastern
GMT-5:00

atlantic
GMT-4:00

newfoundland
GMT-3:30

brasilia
GMT-3:00

azores
GMT-2:00

westAfrica
GMT-1:00

gmt
GMT/UTC

centralEuropean
GMT+1:00

easternEurope
GMT+2:00

baghdad
GMT+3:00

tehran
GMT+3:30

uae
GMT+4:00

afghanistan
GMT+4:30

islamabad
GMT+5:00

india
GMT+5:30

kathmandu
GMT+5:45

dhaka
GMT+6:00

rangoon
GMT+6:30

bangkok
GMT+7:00

chinaCoast
GMT+8:00

japan
GMT+9:00

australia
GMT+9:30

guam
GMT+10:00

magadan
GMT+11:00

newZealand
GMT+12:00

rawakiIslands
GMT+13:00

lineIslands
GMT+14:00

Default **gmt**

Location **ntp-client-config**

Products BAN, MALC, Raptor, Sechtor 100A

PON

auto-learn

Auto-learn enable flag. This sets up password-protection on the connection between OLT and ONU.

Values **oltautolearndisable**
You must set a password for the connection between OLT and ONU.

oltautolearnenable
The OLT automatically learns the password for the connection between OLT and ONU.

Default **oltautolearndisable**

Location **olt-config**

guaranteed-bw

The sum of the **guaranteed-bw** and **maximum-bw** parameter values for all the ports should be less than or equal to the upstream bit rate (155 Mb/second) of the PON OLT card.

Location **olt-traf-cont**

Notes The **guaranteed-bw** and **maximum-bw** parameter values in the **olt-traf-cont** profile must be a multiple of 63.

The **guaranteed-bw** and **maximum-bw** parameter values in the **olt-traf-cont** profile should be equal.

maximum-bw

The sum of the **guaranteed-bw** and **maximum-bw** parameter values for all the ports should be less than or equal to the upstream bit rate (155 Mb/second) of the PON OLT card.

Location **olt-traf-cont**

Notes The **guaranteed-bw** and **maximum-bw** parameter values in the **olt-traf-cont** profile must be a multiple of 63.

The **guaranteed-bw** and **maximum-bw** parameter values in the **olt-traf-cont** profile should be equal.

olt-onu-password

ONU remote-device password.

Location **olt-onu-config**

olt-onu-serial-num

ONU remote-device serial number. Usually the ZRG.

Location   **olt-onu-config**

PPPoA

accm-enable

Enable or disable Asynchronous Control Character Map (ACCM) negotiation.

Values   **enabled**

disabled

Default   **disabled**

Access   This parameter is read-write.

Location   **ppp-lcp**

acfc-enable

Enable or disable Address and Control Field Compression (ACFC) negotiation.

Values   **enabled**

disabled

Default   **disabled**

Access   This parameter is read-write.

Location   **ppp-lcp**

callback-dial-string

The dialing string used for a callback. The format of this string is determined by callback-type.

Values   **0 to 0**

Default   **empty string**

Access   This parameter is read-write.

Location   **ppp-lcp**

Notes   This object only applies when callback negotiation is enabled using **callback-enable**.

callback-enable

Enable or disable callback negotiation. Provides a method for an implementation to request a dial-up peer to call back.

Values **enabled**

   disabled

Default **disabled**

Access This parameter is read-write.

Location **ppp-lcp**

callback-type

The method of determining the location to callback.

Values **byauth**
   Location is determined by authorization information.

   bydialstr
   Location is determined by a dialing string.

   byidentifier
   Location is determined by a location ID.

   bye164
   Location is determined by an E.164 number.

   byename
   Location is determined by a distinguished name.

Default **byauth**

Access This parameter is read-write.

Location **ppp-lcp**

Notes These objects only apply when callback negotiation is enabled using **callback-enable**.

call-mode

Indicates where the PPP call is initiated.

Values **nocall**
   No call is initiated.

   incall
   Call is initiated remotely.

   outcall
   Call is initiated locally.

Default **nocall**

Access	This parameter is read-write.
Location	**ppp-interface**

chap-enable

Enables or disables Challenge Handshake Authentication Protocol (CHAP).

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-auth**

chap-name

The username for authenticating with the CHAP protocol.

Default	**empty string**
Access	This parameter is read-write.
Location	**ppp-auth**

chap-secret

The password for authenticating with the CHAP protocol.

Default	**empty string**
Access	This parameter is read-write.
Location	**ppp-aut**

comp-slot-id

Indicates whether the slot identifier field may be compressed.

Values **enabled**
> The slot identifier may be compressed.

disabled
> The slot identifier must not be compressed. All compressed TCP packets must set the C bit in every change mask, and must include the slot identifier.

Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-ncp**

fcs-alt-enable

Enable or disable Frame Check Sequence (FCS) alternative negotiation. The negotiated FCS values take effect only during Authentication and Network-Layer Protocol phases.

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-lcp**

fcs-size

The size of the Frame Check Sequence (FCS) in bits, the local node will attempt to negotiate for use with the remote node.

Values	**16**
Default	**16**
Access	This parameter is read-write.
Location	**ppp-lcp**
Notes	Regardless of the value of this object, the local node will comply with any FCS size negotiations initiated by the remote node, per the PPP specification.
	Changing this parameter will take effect when the link is next restarted.

frame-type

Indicates which type of framing is used.

Values	**atmllc**
	atmvc
Default	**atmllc**
Access	This parameter is read-write.
Location	**ppp-interface**

initial-mru

The initial Maximum Receive Unit (MRU) that the local PPP entity will advertise to the remote entity.

Values	**128 to 65535**
Default	**1500**
Access	This parameter is read-write.

Location	**ppp-lcp**
Notes	If set to 0 the local PPP entity will not advertise any MRU to the remote entity and the default MRU will be assumed.
	Changing this object will have effect when the link is next restarted.

ip-addr-enable

Enable or disable IP Address Negotiation.

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-ncp**

ip-comp-protocol

Sets the IP compression option.

Values	**none**
	The local node will not attempt to negotiate any IP compression.
	vj-tcp
	The local node will attempt to negotiate Van Jacobson TCP/IP header compression.
Default	**none**
Access	This parameter is read-write.
Location	**ppp-ncp**
Notes	See RFC 1332 for more information on Van Jacobson compression.
	Changing this parameter will take effect when the link is next restarted.

ip-ifindex

The index value of the **ip-interface-record** associated with this PPP authentication record.

Values	**0 to 2147483647**
Default	**0**
Access	This parameter is read-write.
Location	**ppp-auth**
Notes	If this entry is to be used for incoming authentication, this object must be set to a non-zero value.

lgid

The unique identifier of the line group which uses this authentication data.

Values **0 to 2147483647**

Default **0**

Access This parameter is read-write.

Location **ppp-auth**, **ppp-interface**

link-type

Indicates which type of connection is used.

Values **atm**

isdn

asynch

virtual

Default **atm**

Access This parameter is read-write.

Location **ppp-interface**

lqr-period

The Link Quality Reporting period that the local PPP entity will attempt to negotiate with the remote entity, in units of hundredths of a second.

Values **1000 to 99999**

Default **0**

Access This parameter is read-write.

Location **ppp-lcp**

Notes Changing this parameter will take effect when the link is next restarted.

lqr-status

Enable or disable Link Quality Report (LQR) status.

Values **enabled**
The local node will attempt to perform LQR negotiation with the remote node.

disabled
LQR negotiation is not performed.

Default **disabled**

Access This parameter is read-write.

Location	**ppp-lcp**
Notes	Changing this parameter will take effect when the link is next restarted.
	See RFC 1333 for more information on Link Quality Reporting.

pap-enable

Enables or disables Password Authentication Protocol (PAP).

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-auth**

magic-number

The number used in magic number negotiation. When set to zero, a random number will be used for the magic number. This allows us to better prevent having two devices with the same magic number.

Default	**0**
Access	This parameter is read-write.
Location	**ppp-lcp**

magic-number-enable

Enable or disable magic number negotiation.

Values	**false**
	Magic number negotiation is not performed.
	true
	The local node will attempt to perform magic number negotiation with the remote node.
Default	**false**
Access	This parameter is read-write.
Location	**ppp-lcp, ppp-ncp**
Notes	Changing this parameter will take effect when the link is next restarted.

max-config-retries

Number of Link Control Protocol (LCP) configuration retries without response before the link is brought down.

Values	**1 to 999**
Default	**10**
Access	This parameter is read-write.
Location	**ppp-lcp**

max-failure-retries

Number of times a Configuration Negative Acknowledgment is sent before a Configuration Reject is sent

Values	**1 to 999**
Default	**10**
Access	This parameter is read-write.
Location	**ppp-ncp**

max-pad

The number of padded bytes at the end of data. This is used for Self-Describing Padding, a method for placing unambiguous padding octets at the end of the PPP Information field in order to cause messages to fall on a natural boundary.

Values	**1 to 255**
Default	**4**
Access	This parameter is read-write.
Location	**ppp-lcp**
Notes	See Self-Describing Padding in RFC 1570.

max-fail-retries

Number of times a Configuration Negative Acknowledgment is sent before a Configuration Reject is sent.

Values	**1 to 999**
Default	**10**
Access	This parameter is read-write.
Location	**ppp-lcp**

max-slot-id

The maximum slot ID for Van Jacobson TCP/IP header compression.

Values	**3 to 16**
Default	**3**
Access	This parameter is read-write.
Location	**ppp-ncp**
Notes	The **ip-comp-protocol** parameter must be set to **vj-tcp** to enable Van Jacobson TCP/IP header compression. See RFC 1332 for more information on Van Jacobson compression.

max-term-retries

Number of Link Control Protocol (LCP) termination retries without response before the link is brought down.

Values	**1 to 999**
Default	**2**
Access	This parameter is read-write.
Location	**ppp-lcp**

max-terminate-retries

Number of IP termination retries without response before the session is brought down.

Values	**1 to 999**
Default	**2**
Access	This parameter is read-write.
Location	**ppp-ncp**

mru-enable

Enable or disable Maximum Receive Unit (MRU) negotiation.

Values	**enabled**
	disabled
Default	**enabled**
Access	This parameter is read-write.
Location	**ppp-lcp**

num-channels

The maximum number of channels allowed on this interface.

Values	**1**
Default	**1**
Access	This parameter is read-write.
Location	**ppp-interface**
Notes	Only one channel is supported.

num-mode-enable

Enable or disable Numbered Mode negotiation.

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-lcp**
Notes	From RFC 1663: "The Link Control Protocol (LCP) Numbered-Mode Configuration Option negotiates the use of Numbered-Mode on the link. By default or ultimate disagreement, Unnumbered-Mode is used."

pap-password

The password used for authenticating with the PAP protocol.

Default	**empty string**
Access	This parameter is read-write.
Location	**ppp-auth**
Notes	The **pap-peer-id** and **pap-password** values must be entered as strings with single quotes. After the **ppp-auth** record is saved, the **pap-peer-id** and **pap-password** values will be converted to hexadecimal values. For example, the string 'test' will be returned as 74:65:73:74.

pap-peer-id

The username for authenticating with the PAP protocol.

Default	**empty string**
Access	This parameter is read-write.
Location	**ppp-auth**
Notes	The **pap-peer-id** value must be entered as a string with single quotes. After the **ppp-auth** record is saved, the **pap-peer-id** value will be converted to hexadecimal values. For example, the string 'test' will be returned as 74:65:73:74.

pfc-enable

Enable or disable Protocol Field Compression (PFC) negotiation.

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-lcp**

quality-protocol

The link Quality Protocol used.

Values	**lqr**
Default	**lqr**
Access	This parameter is read-write.
Location	**ppp-lcp**
Notes	The only valid quality protocol is LQR.

receive-auth-enable

Enable or disable incoming authentication.

Values	**enabled**
	disabled
Default	**enabled**
Access	This parameter is read-write.
Location	**ppp-lcp**
Notes	This parameter provides a method to negotiate the use of a specific protocol for authentication.

restart-timer

Number of seconds before retransmission of an Link Control Protocol (LCP) packet.

Values	**1 to 999**
Default	**3**
Access	This parameter is read-write.
Location	**ppp-lcp**

rx-acc-map

The Asynchronous Control Character (ACC) map that the local PPP entity requires for use on its receive side. In effect, this is the ACC map that is required in order to ensure that the local modem will successfully receive all characters.

Access This parameter is read-write.

Location **ppp-lcp**

Notes Changing this parameter will take effect when the link is next restarted.

sdp-enable

Enable or disable Self-Describing Padding (SDP) negotiation.

Values **enabled**

disabled

Default **disabled**

Access This parameter is read-write.

Location **ppp-lcp**

send-auth-identity

The identity (PAP peer ID or CHAP name) used with **send-auth-protocol** to look up the outgoing authentication information.

Default **empty string**

Access This parameter is read-write.

Location **ppp-lcp**

receive-auth-protocol

The preferred protocol used for incoming authentication.

Values **pap**

chap

Default **pap**

Access This parameter is read-write.

Location **ppp-lcp**

Notes If **receive-auth-enable** is enabled, the authentication protocol will be negotiated with the peer.

restart-timer

Number of seconds before retransmission of an IP packet.

Values	**1 to 999**
Default	**3**
Access	This parameter is read-write.
Location	**ppp-ncp**

send-auth-enable

Enable or disable outgoing authentication.

Values	**enabled**
	disabled
Default	**disabled**
Access	This parameter is read-write.
Location	**ppp-lcp**

send-auth-protocol

The protocol used with **send-auth-identity** to look up the outgoing authentication information.

Values	**pap**
	chap
Default	**pap**
Access	This parameter is read-write.
Location	**ppp-lcp**

status

Indicates whether the authentication is valid or invalid.

Values	**valid**
	invalid
Default	**valid**
Access	This parameter is read-write.
Location	**ppp-auth**
Notes	Setting this parameter to **invalid** causes the information for that record to become invalidated. Calls using the authentication information from an invalidated record will not be accepted or initiated.

tx-acc-map

The Asynchronous Control Character (ACC) map that the local PPP entity requires for use on its transmit side. In effect, this is the ACC map that is required in order to ensure that all characters can be successfully transmitted through the local modem.

Access This parameter is read-write.

Location **ppp-lcp**

Notes Changing this parameter will take effect when the link is next restarted.

vci

The Virtual Channel Identifier (VCI) value for the PPP VCL.

Values **0 to 65535**

Default **0**

Access This parameter is read-write.

Location **ppp-interface**

Notes See RFC 2515 for more information.

vpi

The Virtual Path Identifier (VPI) value for the PPP VCL.

Values **0 to 4095**

Default **0**

Access This parameter is read-write.

Location **ppp-interface**

Notes See RFC 2515 for more information.

RIP

admin-state

Operational state of Routing Information Protocol (RIP) for all routing domains on the system.

Values **disabled**

enabled

Default **enabled**

Access This parameter is read-write.

      Location   **rip-global-config**

          Notes   This parameter can also be set using the **rip enable** command.

auth-key

The RIP 2 authentication key. The key is in hexadecimal, and must be less than 16 octets (32 hex digits). If a string shorter than 16 octets is supplied, it will be left- justified and padded to 16 octets, on the right, with null characters (0x00).

       Access   This parameter is read-write.

      Location   **rip-if-config**

          Notes   **auth-key** is not valid if **auth-type** is set to **none**.

auth-type

The type of authentication that is used when receiving RIP packets on this interface.

       Values   **md5**
             An MD5-encrypted string is used for the authentication as specified in RFC 1321.

             simple
             The authentication key is sent in clear text.

             none
             No authentication.

       Default   **none**

       Access   This parameter is read-write.

      Location   **rip-if-config**

default-metric

The metric for the default route entry in RIP updates that is transmitted from this interface. A value of 0 (zero) indicates that the system does not originate a default route. In this case, a default route from another router can be propagated. The default is set using the metric in the received update.

       Access   This parameter is read-write.

      Location   **rip-if-config**

poison

This variable specifies whether to send poison reverse updates on this interface. Poison reverse updates are used to prevent larger loops within the

network by setting the metric (cost) of neighboring routes to infinity. This will prevent two-hop loops.

Values **disabled**
> Prevents poison reverse updates on this interface.

enabled
> Allows poison updates to be sent on this interface.

Default **disabled**

Location **rip-if-config**

Notes By default, RIP uses a technique called split horizon to avoid routing loops and allow smaller update packets. Split horizon specifies that when a RIP update is sent out to a particular network interface, it should not include routing information acquired over that same interface. Poison Reverse is a variation of the split horizon technique that specifies that all routes are included in an update out a particular interface, but that the metric is set to infinity for routes acquired over that interface. One drawback is that routing update packet sizes are increased when using poison reverse.

receive-type

Which version of RIP updates the system accepts.

Values **ripv1**
> Only RIP version 1 updates compliant with RFC 1058 are accepted.

ripv2
> Only RIP version 2 updates compliant with RFC 1388 are accepted. This setting implies acceptance of multicast packets.

ripv1orripv2
> Either RIP version 1 or version 2 updates are accepted. This setting implies acceptance of multicast packets.

donotreceive
> No RIP updates are accepted.

Default **ripv1orripv2**

Access This parameter is read-write.

Location **rip-if-config**

See Also send-type

remotefault

Identifies any local fault indications that this media access unit (MAU) has detected and will advertise at the next auto-negotiation interaction for 1000Mbps MAUs.

Values	**noerror**
	offline
	linkfailure
	autonegerror
Location	**rip-if-config**

send-type

The type of RIP updates the system sends on this interface.

Values **donotsend**
No RIP updates are sent on the interface.

ripv1
RFC 1058 compliant RIP updates.

ripv1compatible
RIP-2 updates using route inclusion rules as specified in RFC 1058.

ripv2
RIP-2 updates multicast updates.

ripv1demand
Demand RIP on the WAN interface using RIP version 1 rules as specified in RFC 1582.

ripv2demand
Demand RIP on the WAN interface using RIP version 2 rules as specified in RFC 1582.

Default	**ripv1compatible**
Access	This parameter is read-write.
Location	**rip-if-config**
See Also	receive-type

sent-updates

The number of triggered RIP updates actually sent on this interface. This number does not include full updates sent containing new information.

Location	**rip-if-config**

src-address

The IP address that the system will use as a source address on this interface. If it is a numbered interface, this must be the interface IP address. On unnumbered interfaces, it must be the IP address for some interface on the system.

This must be the same value as ipIfAddr (from ZHONE-IP-REC-MIB).

Access This parameter is read-write.

Location **rip-if-config**

sroute-advertise

Specifies whether to advertise static routes.

Values **none**
No static routes are advertised.

low
Advertise only low preference static routes.

high
Advertise only high preference static routes.

both
Advertise both high and low preference static routes.

Default **none**

Access This parameter is read-write.

Location **rip-if-config**

update-time

The time in seconds between transmissions of RIP updates on all interfaces within a routing domain.

Default **30 seconds, which follows RFC 1058 and subsequent RIP RFCs.**

Access This parameter is read-write.

Location **rip-global-config**

version

The RIP version number in the header of the last RIP packet received from a peer.

Values **0 to 255, inclusive**

Access This parameter is read-only.

Location **rip-peer**

RS232

This section describes the RS232 parameters. These parameters are used to configure the serial craft port settings.

rs232PortInSpeed

The serial craft port input speed in bits per second (bps).

Values	**9600, 19200, 38400, 57600**
Access	This parameter is read-write.
Location	**rs232-profile**
Notes	**rs232PortInSpeed** must match **rs232PortOutSpeed**.
Products	BAN, MALC

rs232PortOutSpeed

The serial craft port output speed in bits per second (bps).

Values	**9600, 19200, 38400, 57600**
Access	This parameter is read-write.
Location	**rs232-profile**
Notes	rs232PortOutSpeed must match **rs232PortInSpeed**.
Products	BAN, MALC

rs232PortInFlowType

The serial craft port type of input flow control.

Values	**ctsRts**
	dsrDtr
	none
Access	This parameter is read-write.
Location	**rs232-profile**
Products	BAN, MALC

rs232PortOutFlowType

The serial craft port type of output flow control.

Values	**ctsRts**
	dsrDtr
	none
Access	This parameter is read-write.
Location	**rs232-profile**
Products	BAN, MALC

rs232AsyncPortBits

The serial craft port number of bits in a character.

Access   This parameter is read-write.

Location   **rs232-profile**

Products   BAN, MALC

rs232AsyncPortStopBits

The serial craft port number of stop bits.

Values   **dynamic**

one

oneAndHalf

two

Access   This parameter is read-write.

Location   **rs232-profile**

rs232AsyncPortParity

The serial craft port sense of a character parity bit.

Values   **even**

mark

none

odd

space

Access   This parameter is read-write.

Location   **rs232-profile**

Products   BAN, MALC

rs232AsyncPortAutobaud

Specifies whether the port automatically senses input speed.

Values   **disabled**

enabled

Access   This parameter is read-write.

Location   **rs232-profile**

Notes   Only **disabled** is supported.

Products BAN, MALC

SHDSL

shdsl-clock-offset

This parameter is used to help achieve a low frequency wander and jitter between network and DSL system clock. This value can only be set on devices configured as CO in the **dsl-config** profile.

Values **-100 to 100 (in parts per million)**

Default **0**

Access This parameter is read-write.

Location **shdsl-config**

shdsl-config-line-rate (2-wire G.SHDSL card)

The line rate. If the **shdsl-fix-bit-rate** parameter is enabled, the line will attempt to train at this rate. Note that the DSL modem uses 8kbps for ATM framing and other ATM overhead, so that effective line rate is 8kbps less than the configured rate.

Values **line-rate-72kbps, line-rate-80kbps, line-rate-136kbps, line-rate-144kbps, line-rate-200kbps, line-rate-208kbps, line-rate-264kbps, line-rate-272kbps, line-rate-328kbps, line-rate-336kbps, line-rate-392kbps, line-rate-400kbps, line-rate-456kbps, line-rate-464kbps, line-rate-520kbps, line-rate-528kbps, line-rate-584kbps, line-rate-592kbps, line-rate-648kbps, line-rate-656kbps, line-rate-712kbps, line-rate-720kbps, line-rate-776kbps, line-rate-784kbps, line-rate-840kbps, line-rate-848kbps, line-rate-904kbps, line-rate-912kbps, line-rate-968kbps, line-rate-976kbps, line-rate-1032kbps, line-rate-1040kbps, line-rate-1096kbps, line-rate-1104kbps, line-rate-1160kbps, line-rate-1168kbps, line-rate-1224kbps, line-rate-1232kbps, line-rate-1288kbps, line-rate-1296kbps, line-rate-1352kbps, line-rate-1360kbps, line-rate-1416kbps, line-rate-1424kbps, line-rate-1480kbps, line-rate-1488kbps, line-rate-1544kbps, line-rate-1552kbps, line-rate-1608kbps, line-rate-1616kbps, line-rate-1672kbps, line-rate-1680kbps, line-rate-1736kbps, line-rate-1744kbps, line-rate-1800kbps, line-rate-1808kbps, line-rate-1864kbps, line-rate-1872kbps, line-rate-1928kbps, line-rate-1936kbps, line-rate-1992kbps, line-rate-2000kbps, line-rate-2056kbps, line-rate-2064kbps, line-rate-2120kbps, line-rate-2128kbps, line-rate-2184kbps,**

line-rate-2192kbps, line-rate-2248kbps, line-rate-2256kbps,
line-rate-2312kbps, line-rate-2320kbps, line-rate-2368kbps

Default line-rate-2320kbps

Access This parameter is read-write.

Location shdsl-config

shdsl-config-line-rate (4-wire G.SHDSL card)

The line rate. If the **shdsl-fix-bit-rate** parameter is enabled, the line will
attempt to train at this rate. Note that the DSL modem uses 8kbps for ATM
framing and other ATM overhead, so that effective line rate is 8kbps less that
the configured rate.

Values

line-rate-4w-384kbps	line-rate-4w-512kbps	line-rate-4w-640kbps
line-rate-4w-768kbps	line-rate-4w-896kbps	line-rate-4w-1024kbps
line-rate-4w-1152kbps	line-rate-4w-1280kbps	line-rate-4w-1408kbps
line-rate-4w-1536kbps	line-rate-4w-1664kbps	line-rate-4w-1792kbps
line-rate-4w-1920kbps	line-rate-4w-2048kbps	line-rate-4w-2176kbps
line-rate-4w-2304kbps	line-rate-4w-2432kbps	line-rate-4w-2560kbps
line-rate-4w-2688kbps	line-rate-4w-2816kbps	line-rate-4w-2944kbps
line-rate-4w-3072kbps	line-rate-4w-3200kbps	line-rate-4w-3328kbps
line-rate-4w-3456kbps	line-rate-4w-3584kbps	line-rate-4w-3712kbps
line-rate-4w-3840kbps	line-rate-4w-3968kbps	line-rate-4w-4096kbps
line-rate-4w-4224kbps	line-rate-4w-4352kbps	line-rate-4w-4480kbps
line-rate-4w-4608kbps		

Default line-rate-2320kbps

Access This parameter is read-write.

Location shdsl-config

shdsl-decoder-coeffA/shdsl-decoder-coeffB

21 bit value corresponding to the decoder coefficient A or B, as defined in the
G.991.2 standard. Note that the default value is bit-reversed, when compared
against the recommended polynomials in the G.991.2 standard. Thus when
you enter the 21-bit value, it should be written bit-reversed also.

Values 0 to 2097151

Default 366 (for shdsl-decoder-coeffA)

817 (for shdsl-decoder-coeffB)

Access This parameter is read-write.

Location shdsl-config

shdsl-dsp-version

The version of the DSP/Framer VLSI in the transceiver.

Access	This parameter is read-only.
Location	**shdsl-status**

shdsl-firmware-version

The firmware release number.

Access	This parameter is read-only.
Location	**shdsl-status**

shdsl-fix-bit-rate

Normally, if the CO side and CPE side select different line rates at startup, the lower of the two rates will be selected. By using the fix bit rate the CO side can override the default procedure and require startup at the rate specified in the **shdsl-config-line-rate**.

Values **fix-bit-disable**

This value enables automatic baud rate adaption, where the DSL modem will train at the best achievable rate. If the CO and CPE devices have different line rates at startup, the line will train up to the highest rate supported by both devices.

fix-bit-enable

This value is used for static (set) baud rates. With this option, the line will attempt to connect at the rate configured in the **shdsl-config-line-rate**.

Default	**fix-bit-disable**
Access	This parameter is read-write.
Location	**shdsl-config**
Notes	This parameter is applicable only if **unit-mode** is **co.**

shdsl-frame-sync

The 14 bit frame sync word (FSW).

Values	**From 0 to 65535**
Default	**45**
Access	This parameter is read-write.
Location	**shdsl-config**
Notes	Not currently supported.

shdsl-ntr

Determines the clocking on the SHDSL line.

Values	**ntr-local-osc**
	The line uses the system's internal clock. Also known as local timing.
	ntr-refck-8KHz
	The line uses an 8KHZ clock derived from a timing source such as a T1 interface.
Default	**ntr-local-osc**
Access	This parameter is read-write.
Location	**shdsl-config**
Notes	Circuit Emulation Service (CES) transports TDM circuits over ATM networks. For CES-based services: change **ntr** default setting of **ntr-local-osc** to ntr-refck-8KHz in the **shdsl-config** profile.

SHDSL lines configured with the **shdsl-ntr** parameter set to **ntr-refck-8khz** will not sync if a system clock source is not enabled in a **system-clock-profile**. To enable clocking:

```
zSH> update system-clock-profile 1-17-1-0/ds1
Please provide the following: [q]uit.
system-clock-eligibility: ->  {false}: true
system-clock-weight: ------>  {5}:
....................
Save changes? [s]ave, [c]hange or [q]uit: s
Record updated.
```

shdsl-power-scale

Reduces the transmit power in small increments to compensate for minor differences in power between units. The formula for the adjustment is:

Power scale $= 26112 * 10^{([\text{adjustment in dB}]/\, 20)}$

The following values are recommended for different loop lengths.

Values	**17664**
	For loop lengths from 0 to 10 feet (0 to 3.05 meters). Corresponds to -3.39dB.
	20992
	For loop lengths less than 4000 feet (1219 meters). Corresponds to -1.9dB.
	29952
	For loop lengths greater than 4000 feet (1219 meters). Corresponds to -1.19dB.
Default	**29298**
Access	This parameter is read-write.
Location	**shdsl-config**

shdsl-repeater-id

This value identifies if the STU is being used as a repeater.

Values **noChangeRepeater**

repeaterDisable

repeaterEnable

Default **repeaterDisable**

Access This parameter is read-write.

Location **shdsl-config**

shdsl-standard

Determines the SHDSL standards.

Values **annex-a**
G.991.2 Annex A. Typically used in the United States.

annex-b
G.991.2 Annex B. Typically used outside the United States.

Default **annex-b**

Access This parameter is read-write.

Location **shdsl-config**

shdsl-startup-margin

Specifies the minimum desired target margin in dB for the local line conditions during startup. Used to negotiate the bit rate during startup.

Values **0 to 10**

Default **6**

Access This parameter is read-write.

Location **shdsl-config**

shdsl-transmit-power-back-off-mode

Indicates if transmit power backoff is used on the other end of the loop. When enabled, the transmit power is reduced in steps of 1dB from 0 to 6 dB according to the received power.

Values **backoffDisable**

backoffEnable

Default **backoffEnable**

Access This parameter is read-write.

Location   **shdsl-config**

shdsl-wire-mode

This setting disables or enables 4-wire-framing.

Values   **four-wire-disable**
    Four wire framing is disabled. Use this setting for the 2 wire SHDSL card.

four-wire-enable-bit-interleave
    Sends one bit on channel 1, then one bit on channel 2, as described in the ITU-T G.991.2, section E.2.

four-wire-enable-byte-interleave
    sends one byte on channel 1, and then one byte on channel 2, as described in ITU-T G.991.2, section E.7

four-wire-enable-non-interleave
    Sends 12 bytes on channel 1, 12 bytes on second channel 2.

Default   **four-wire-disable**

Access   This parameter is read-write.

Location   **shdsl-config**

Sechtor 100A environmental

thermo-a-lower-threshold

The lower threshold for thermometer A in degrees Celsius. When **thermo-a-temperature** is below this value, **thermo-a-operational-status** is below the lower threshold, and a trap is generated.

Values   **Valid range is -10 to 5 degrees Celsius**

Default   **-5 degrees Celsius**

Access   This parameter is read-write.

Location   **s100-environment-profile**

thermo-b-lower-threshold

The lower threshold for thermometer B in degrees Celsius. When **thermo-b-temperature** is below this value, **thermo-b-operational-status** is below the lower threshold, and a trap is generated.

Values   **Valid range is -10 to 5 degrees Celsius**

Default   **-5 degrees Celsius**

Access   This parameter is read-write.

Location   **s100-environment-profile**

thermo-a-upper-threshold

The upper threshold for thermometer A in degrees Celsius. When **thermo-a-temperature** is above this value, **thermo-a-operational-status** is greater than the upper threshold and a trap is generated.

Values	**Valid range is 45 to 80 degrees Celsius**
Default	**65 degrees Celsius**
Access	This parameter is read-write.
Location	**s100-environment-profile**

thermo-b-upper-threshold

The upper threshold for thermometer B in degrees Celsius. When **thermo-b-temperature** is above this value, **thermo-b-operational-status** is greater than the upper threshold and a trap is generated.

Values	**Valid range is 45 to 80 degrees Celsius.**
Default	**60 degrees Celsius**
Access	This parameter is read-write.
Location	**s100-environment-profile**

SNMP

access-table-index

Displays the access list associated with the community name, indicating which IP addresses are allowed to use this community name.

The value 0 indicates that no address checking is performed; all SNMP requests are allowed with the access right specified by the **permissions** parameter.

Location	**community-access-profile**, **community-profile**

community-name

Community name to be sent in all traps sent to this destination.

Location	**community-profile**

ip-address

The IP address from which a management connection to the device can be established.

Location **community-access-profile, malicious-caller**

thresh15min-badseq

The number of sequence errors within any given 15-minute performance data collection period, which causes the SNMP agent to send an aal2PerfCellLossThreshTrap. One trap will be sent per interval per interface.

Values **0 to 900**

Default **0 (will disable the trap)**

Location **aal2-vcl-profile**

Products Sechtor 100A

thresh15min-congestion

The number of congestion events within any given 15-minute performance data collection period, which causes the SNMP agent to send an aal2PerfCongestionThreshTrap. One trap will be sent per interval per interface.

Values **0 to 900**

Default **0 (will disable the trap)**

Location **aal2-vcl-profile**

Products Sechtor 100A

trapadminstatus

Specifies whether the device reports traps to the trap destination.

Values **enabled**

disabled

Default **enabled**

Location **trap-destination**

trapdestination

The IP address destination for traps.

Location **trap-destination**

traplevel

The lowest-level severity level of the traps reported to the **trapdestination**.

Values	**critical**
	severe
	moderate
	low
Default	**low**
Location	**trap-destination**

traptype

The type of trap to be sent to this **trapdestination**. This parameter is currently unsupported.

Values	**catAdmin**
	catLine
	catVoice
	catIP
	catRip
	canRadio
Location	**trap-destination**

SONET

apsChanConfigAdminStatus

Administrative status of the APS object.

Values	**inService (1)**
	outOfService (2)
Default	**outOfService (2)**
Access	This parameter is read-create.
Location	aps-channel

apsChanConfigGroupName

The configured name of the APS group.

Access	This parameter is read-write.
Location	aps-channel

apsChanConfigNumber

A unique channel number within an APS group. The value 0 indicates the null channel. The values 1-14 define a working channel. If the SONET LTE is not part of an APS group this value is set to -1

Access This parameter is read-only.

Location aps-channel

apsChanConfigPriority

Determines whether high or low priority SD and SF codes are used in K1 requests. This field is only applicable if the channel is to be included in a group using the 1:n architecture. It is not applicable if the channel is to be included in a group using the 1+1 architecture and is ignored in that case.

Default **low**

Access This parameter is read-create.

Location aps-channel

apsConfigCreationTime

The value of sysUpTime at the time APS was configured.

Access This parameter is read-only.

Location aps-group

apsConfigDirection

The directional mode of the APS group.

Values **unidirectional**
The unidirectional mode provides protection in one direction.

bidirectional
The bidirectional mode provides protection in both   directions.

Default **unidirectional**

Access This parameter is read-create.

Location aps-group

apsConfigExtraTraffic

Enables or disables the transfer of extra traffic on the protection channel in a 1:n architecture. This object must be set to disabled if the architecture is 1+1.

Default **disabled**

Access This parameter is read-only.

Location aps-group

apsConfigMode

The protection architecture of the APS group.

Values **onePlusOne (1)**

Access This parameter is read-only.

Location aps-group

apsConfigRevert

The revertive mode of the APS group.

Values **nonrevertive)**
After a protection switch, traffic remains on the protection line until another switch request is received.

revertive
After a protection switch, when the condition that caused a switch to the protection line is cleared the signal switches back to the working line.

Default **nonrevertive**

Access This parameter is read-create.

Location aps-group

apsConfigsdBerThreshold

The Signal Degrade Bit Error Rate. The negated value of this number is used as the exponent of 10 for computing the threshold value for the Bit Error Rate (BER). For example, a value of 5 indicates a BER threshold of 10^-5.

Default **6**

Access This parameter is read-create.

Location aps-group

apsConfigsfBerThreshold

The Signal Failure Bit Error Rate. The negated value of this number is used as the exponent of 10 for computing the threshold value for the Bit Error Rate (BER). For example, a value of 5 indicates a BER threshold of 10^-5.

Default **3**

Access This parameter is read-create.

Location aps-group

apsConfigWaitToRestore

The Wait To Restore period in seconds. After clearing a condition that necessitated an automatic switch, the wait to restore period must elapse before reverting.

Default **300**

Access This parameter is read-create.

Location aps-group

clock-external-recovery

Whether internal clocking can be recovered from an external source.

Values **enabled**

disabled

Access This parameter is read-write.

Location **sonet-profile**

clock-transmit-source

The clocking source.

Values **external155mhz**
Transmit clock synthesized from an external 155.52 MHz source.

looptiming
Uses the recovered receive clock as the transmit clock.

localtiming
Ether uses a local clock source or an external clock is attached to the device containing the interface.

throughtiming
Uses a transmit clock derived from the recovered receive clock of another interface.

Access This parameter is read-write.

Location **sonet-profile**

medium-cell-scramble-config

The SONET scramble mode at the cell level.

Values **true**
Cell level scramble mode is enabled.

false
Cell level scramble mode is not enabled.

      Default **true**

      Access This parameter is read-write.

      Location **sonet-profile**

medium-circuit-identifier

The SONET circuit identifier, determined by the system installer.

      Values **string of up to 260 characters**

      Access This parameter is read-write.

      Location **sonet-profile**

medium-line-coding

The line coding for the SONET interface.

      Values **sonetMediumOther**

             sonetMediumB3ZS
             Used for STS-1 and STS-3 electrical SONET/SDH signalling.

             sonetMediumCMI
             Used for STS-1 and STS-3 electrical SONET/SDH signalling.

             sonetMediumNRZ
             Non-Return to Zero. Used for optical SONET/SDH signals.

             sonetMediumRZ
             Return to Zero. Used for optical SONET/SDH signals.

      Access This parameter is read-write.

      Location **sonet-profile**

medium-line-scramble-config

The SONET scramble mode at the line level.

      Values **true**
             Line level scramble mode is enabled.

             false
             Line level scramble mode is not enabled.

      Default **true**

      Access This parameter is read-write.

      Location **sonet-profile**

medium-line-type

The line type for the SONET interface.

Values **sonetShortSingleMode**
Short range single mode fiber.

sonetMultiMode
Multimode fiber.

Access This parameter is read-write.

Location **sonet-profile**

medium-loopback-config

How the SONET loopback is configured.

Values **sonetnoloop**
SONET circuit, with no loop.

sonetfacilityloop
All incoming data on the Rx interface is retransmitted out of the Tx interface. Used to check the circuit between a remote device and the Zhone device and to test the Zhone device optical module.

sonetterminalloop
All of the data transmitted on the Tx interface is also internally looped back to the Rx interface. Used to verify that the ATM and PHY layers are communicating.

sonetotherloop
All incoming data on the Rx interface is retransmitted out of the Tx interface. Used to check the circuit between the IAD and a remote unit and to verify that the optical module and the SONET PHY are working.

Access This parameter is read-write.

Location **sonet-profile**

medium-cell-scramble-config

Whether the SONET cell scramble mode is enabled.

Values **true**
Scramble mode is enabled

false
Scramble mode is not enabled.

Default **true**

Access This parameter is read-write

Location **sonet-profile**

medium-type

The type of SONET signaling.

Values	sonet
	Synchronous Optical Network (North America)
	sdh
	Synchronous Digital Hierarchy (Europe)
Default	**sonet**
Access	This parameter is read-write.
Location	**sonet-profile**

path-current-width

The type of SONET/SDH path.

Values	**sts1**
	sts3cSTM1
	sts12cSTM4
Access	This parameter is read-write.
Location	**sonet-profile**

Subscriber

capable-line-rate-limit

The maximum line rate that can be supported by the subscriber line. This rate is determined by several factors including the distance the subscriber is from the CO, the copper facilities to the subscriber, and the type of IAD installed. This value is determined by the service provider.

Values	**0 to 2147483647, inclusive.**
Access	This parameter is read-write
Location	**subscriber**

iad-type

Identifies the type of IAD used by the subscriber.

Values	**zedge64s**
Access	This parameter is read-write.
Location	**subscriber**

line-group-id

The line group identifier. Use the **lineGroup** command to find this value.

line-rate-limit

The maximum line rate (in bits per second) that the subscriber is provisioned to receive from the service provider. This value is the total line rate or bandwidth of the subscriber connection, including voice and data.

Values   **0 to 2147483647, inclusive.**

Access   This parameter is read-write.

Location   **subscriber**

name

Subscriber name.

Location   **subscriber**

name-group-id

An administratively defined name used to aid operators identify subscribers in the system. The name is not used by the system, it is only for operator reference.

Access   This parameter is read-write.

Location   **subscriber**

service-provider-id

Unique service provider ID. This value is used throughout the management system to link parameters with customers or service providers.

Access   This parameter is read-write.

Location   **subscriber**

tools-access

Indicates whether the specified user has tools privileges.

Access   This parameter is read-only.

Notes   Use the **adduser** and **updateuser** commands to configure user accounts.

voice-admin-status

The administrative state of this connection.

Values   **enabled**

           disabled

Default   **disabled**

| | **Location** | **subscriber-voice** |

System

countryregion

	The country or region this system is operating in. This parameter sets A-Law Mu-Law companding and sets the ring frequency for the trunk side interface of the device. These settings are in accordance with ITU-T E.180 and ITU-T E.180 Supplement 2.
Values	**australia, brazil, canada, chile, china, czechrepublic, egypt, etsi, finland, france, germany, hongkong, ireland, italy, japan, korea, malaysia, mexico, spain, sweden, taiwan, turkey, uk, unitedarabemirates, us**
Default	**us**
Access	This parameter is read-write.
Location	**system**
Notes	Changing this parameter requires a system reboot.

enableauthtraps

	Indicates whether the system is permitted to generate authenticationFailure traps. The value of this parameter overrides any configuration information and provides a means to disable all authentication Failure traps.
Access	This parameter is read-write
Location	**system**

ipaddress

	The IP address of this system. Independent of the different IP interfaces configured and what is active, a manager uses this address to communicate with the system.
Access	This parameter is read-write.
Location	**system**

manuf-access

	Indicates whether the specified user has manuf(acturing) privileges.
Access	This parameter is read-only.
Notes	Use the **adduser** and **updateuser** commands to configure user accounts.

numcards

The total number of cards in the system.

Access This parameter is read-only.

Location **system**

numshelves

The number of shelves in the system.

Access This parameter is read-only.

Location **system**

permissions

The access level associated with the community name:

Values **noAccess**
Restricts the community name any access to this device.

read
Allows read access to all parameters except administrator access parameters.

readAndWrite
Allows read and write access to all parameters except administrator access parameters.

admin
Allows read and write access to all parameters on this device.

Access This parameter is read-write.

Location **community-profile**

primaryclocksource

The address of the interface from which the system 8khz backplane clock can be derived. Only active DS1, DS3, and OC-3 interfaces can provide system clock.

Values **Any active DS1, DS3, or OC3 interface.**

Default **0/0/0/0/0**

If set to the default, the system uses its internal clock.

Access This parameter is read-write.

Location **system**

Notes Only one interface in the system can be the primary clock source at a time.

The interface that provides the clock source must be set to loop timing or local timing (DS3 interface).

Products BAN, MALC, Raptor, Sechtor 100A

revertiveclocksource

Redundant clock sources are revertive by default. If a standby clock source becomes active after the failure of a primary clock source, the system will revert to the primary clock source after that clock source becomes active again. Note that the clock source must be active for 30 seconds before the system will revert back to the primary clock source.

Values **true**

false

Default **true**

Access read-write

Location **system**

Products BAN, MALC, Raptor, Sechtor 100A

ringsource

Ring voltage source selection (internal or external).

Values **internalRingSourceLabel**
Select internal ring generator (located within MTAC) as source for ring voltage to line cards.

externalRingSourceLabel
Select external ring generator (input connector located on MTAC) as source for ring voltage to line cards.

Default **internalRingSourceLabel**

Location **system**

setserialno

An advisory lock used to allow several cooperating SNMPv2 entities, all acting in a manager role, to coordinate their use of the SNMPv2 set operation.This parameter is used for coarse-grain coordination.

Access This parameter is read-write.

Location **system**

shelvesarray

Bit array from 0-255 (32 8-bit bytes) that are present in the system.

Access	This parameter is read-only.
Location	**system**

syscontact

The textual identification of the contact person for this managed node, together with information on how to contact this person.

Values	**If no contact information is known, the value is a zero-length string.**
Access	This parameter is read-write.
Location	**system**

syslocation

The physical location of the device.

Values	**If the location is unknown, the value is a zero-length string.**
Access	This parameter is read-write.
Location	**system**

sysname

An administratively-assigned name for this managed node. By convention, this is the node's fully-qualified domain name.

Values	**If the name is unknown, the value is the zero-length string.**
Access	This parameter is read-write.
Location	**system**

system-access

Specifies user access level.

Location	**user-profile**

V5.2

admin-status

The administrative status of the V5.2 interface group, user port or link.

Values	**inservice**

                    outofservice

                    deferredoutofservice

Takes the group, port, or link out of service, but not until all calls are completed.

restart

Causes the v52 interface to shut down for a period of time, then go through the startup procedure. When restart is complete, the V5.2 interface should go back to the previously configured admin status before it was set to restart.

According to ETSI EN 300 347-1 V2.2.2, a system must be shut down for 95 seconds before it can be returned to service.

Default	**outOfService**
Access	This parameter is read-write.
Location	**v52-user-port**, **v52-interface-group**, **v52-link**

block (V5.2 user port)

A user port can be blocked by the access network for non urgent or urgent configuration or reconfiguration. If the port is routed through a V5.2 interface to a local exchange, then the block request is granted by the local exchange through the V5 interface only, to avoid interference with call setup, calls in progress or with calls being cleared.

Values	**blocked**

The user port can be unblocked by either accelerated port alignment (group unblocking) and by sequential port alignment.

shuttingDown

The user port can be unblocked by either accelerated port alignment (group unblocking) and by sequential port alignment except active ports will not be blocked until all of the calls are completed.

unblocked

The user port will be unblocked regardless of its previous port block state.

blockedNotSuitableForGroupUnblocking

The user port cannot be unblocked by accelerated port alignment unblocking, but can be unblocked by sequential blocking.

Default	**blocked**
Access	This parameter is read-write.
Location	**v52-user-port**

block (V5.2 link)

This parameter controls the link blocking function. The Access Node (AN) requests that the link be blocked, the Local Exchange (LE) evaluates the request, releases the connection, then reestablishes semipermanent and preconnected connections.

E1 trunks are added in a blocked state and must be unblocked by the LE before they are operational, and an E1 must be administratively blocked by the LE before it can be deleted.

Values **deferredBlocked**
Wait to block the link until there are no active calls.

nonDeferredBlocked
Block the link after approval is received from the LE.

forceBlocked
The link is blocked by the AN without approval from the LE.

unblocked
Unblock the link.

Default **unblocked**

Access This parameter is read-write.

Location **v52-link**

check-id

This parameter is set to **activated** to request that the V5.2 link ID on the AN side be checked with the LE side link ID. When the **check- id** is finished, this value is **notActivated**.

A link identification check can only be started when the V5.2 link is operational, and can be initiated from either the AN or LE side. (The LE request has priority over any AN initiated requests to avoid request collision.)

Values **activated**

notActivated

Default **notActivated**

Access This parameter is read-write.

Location **v52-link**

c-path-valid-flag

When this parameter is set to valid, the C-path is active.

Values	**valid**
	invalid
Location	**v52-interface-group**

dsn-lg-id

Describes the line group ID associated with the E1 link. Use the **lineGroup** command to find the line group ID.

Values	**1 to 16, inclusive**
Location	**v52-interface-group**

id (V5.2 link)

The V5.2 link identifier. Assigned by the Local Exchange (LE).

Values	**0 to 255, inclusive**
Access	This parameter is read-write.
Location	**v52-link**

id (V5.2 path)

The ID number of the communications path.

Values	**0 to 255**
Location	**v52-path**

inbound-calls

The number of inbound calls completed over the V5.2 IG.

Access	This parameter is read-only.
Location	**v52-stats-current**, **v52-stats-interval**, **v52-stats-total**
Notes	PerfCurrentCount

isdn-env-func-start-address

The start address for ISDN users. When ISDN users are added, they must have an address greater or equal to this one. This value must match the value on the switch.

Values	**0 to 8175, inclusive**
Access	This parameter is read-write.
Location	**v52-interface-group**

isdnds-cpath-id

If the user port is configured for ISDN, this parameter is equal to the associated C-path ID that carries Ds-type data. A value of 0 (zero) indicates that the user port is not configured to carry Ds-type data.

Values   **0 to 48, inclusive**

Access   This parameter is read-write.

Location   **v52-user-port**

isdnf-cpath-id

If the user port is configured for ISDN, this parameter is equal to the associated C-path ID that carries f-type data. A value of 0 (zero) indicates that the user port is not configured to carry f-type data.

Values   **0 to 48, inclusive.**

Access   This parameter is read-write.

Location   **v52-user-port**

isdnp-cpath-id

If the user port is configured for ISDN, this parameter is equal to the associated C-path ID that carries p-type data. A value of 0 (zero) indicates that the user port is not configured to carry p-type data.

Values   **0 to 48, inclusive.**

Access   This parameter is read-write.

Location   **v52-user-port**

link-is-timer

Specifies the length of time that a V5.2 link must be in a framed state before the interface declares that the link is in service. This value should be less than the equivalent value that is provisioned in the LE.

Values   **50 to 10000, inclusive.**

Default   **200**

Access   This parameter is read-write.

Location   **v52-interface-group**

link-oos-timer

Specifies the length of time that a V5.2 link must be in a failed state before the interface declares that the link has failed. This value should always exceed the equivalent value that is provisioned in the LE.

Values	**50..10000**
Default	**2500**
Access	This parameter is read-write.
Location	**v52-interface-group**

link-valid-flag

Activates the E1 circuit.

Values	**valid**
	invalid
Location	**v52-interface-group**

local-interface-id

The interface ID of the IG. Must be unique across the system. This value must match the value on the switch.

Values	**1 to 16777215, inclusive.**
Default	**0**
Access	This parameter is read-write.
Location	**v52-interface-group**

local-prov-variant

The prov(isioning) variant describes a type of provisioning. This value must match the value on the switch.

Values	**0 to 127, inclusive**
Default	**0**
Access	This parameter is read-write.
Location	**v52-interface-group**

logical-channel-id (C-path)

The logical C-channel ID that the C-path is using. This number must match the **logical-channel-id** value of the C-channel that the C-path is running over.

Values	0 to 65535, inclusive
Access	This parameter is read-write.
Location	v52-cpath

logical-channel-id (C-channel)

The C-channel logical channel ID. C-channels carry one or more C-paths. A V.52 interface may contain up to 44 logical C-channels and each logical C-channel on an interface is uniquely identified with a 16 bit logical C-channel identifier. C-channels that are provisioned as standby channels in a protection group do not have a logical C-channel identifier.

Values	0 to 65535, inclusive.
Access	This parameter is read-write.
Location	v52-cchannel

max-outstanding-frames

The maximum number of outstanding information frames at layer two.

Values	1 to 7, inclusive
Default	7
Access	This parameter is read-write.
Location	v52-interface-group-lapv

n200

The maximum number of retransmissions for a frame allowed at layer two.

Values	1 to 10, inclusive.
Default	3
Access	This parameter is read-write
Location	v52-interface-group-lapv

n201

The maximum number of octets in the information field of an I frame.

Values	0 to 256, inclusive.
Default	256
Access	This parameter is read-write.
Location	v52-interface-group-lapv

national-pstn-region

The regional and country-specific setting for V5.2 PSTN service. The PSTN region dictates regional signaling differences like ring cadence.

Values **australia, brazil, egypt, estonia, finland, france, germany, hongkong, ireland, italy, japan, korea, malaysia, mexico, spain, sweden, taiwan, uk, unitedarabemirates, us**

Default **unknown**

Access This parameter is read-write.

Location **v52-interface-group**

port-alignment-request

A request to block or unblock all the user ports associated with the current IG by port type.

Values **noRequest**

blockAll
Block all user ports associated with this IG.

blockIsdn
Block all of the isdnBa and isdnPra user ports associated with this IG.

blockPstn
Block all of the PSTN user ports associated with this IG.

unblockAll
Unblock all user ports associated with this IG.

unblockIsdn
Unblock all of the isdnBa and isdnPra user ports associated with this IG.

unblockPstn
Unblock all the pstn user ports associated with this IG.

Default **noRequest**

Access This parameter is read-write.

Location **v52-interface-group**

protection-group

The C-channel protection group.

Values   **none**

group1

oneToOneGroup2

mToNgroup2

Access   This parameter is read-write.

Location   **v52-cchannel**

protocol-spec

This variable specifies which variation of the v5.2 protocol is used by this V5.2 IG.

Values   **edition1**
> The V5.2 specification defined in ETSI ETS 300 347-1 ed.1 (1994-09).

edition2
> The V5.2 specification defined in ETSI EN 300 347-1 V2.2.2 (1999-12).

Default   **edition2**

Access   This parameter is read-write.

Location   **v52-interface-group**

prov-variant-request

A request by the user regarding the provisioning variant.

Values   **noRequest**
> The default value. Setting the variable to **noRequest** has no effect.

verifywithle
> A request to verify if the LE is ready for reprovisioning.

requestfromle
> A request to get the LE Variant ID and Interface ID.

switchletolocal
> A request to the LE side to change its provisioning variant to be the same as **local-prov-variant**.

Default   **noRequest**

Access   This parameter is read-write

Location   **v52-interface-group**

pstn-layer-3-start-address

The start address for PSTN users. When PSTN users are added, they must have an address greater or equal to this one. This value must match the value on the switch.

Values	**0 to 65535, inclusive**
Access	This parameter is read-write.
Location	**v52-interface-group**

reg-or-lease-user

What kind of lease the user carries.

Values	**regular**
	permanentLease
	semiPermanentLease
Default	**regular**
Access	This parameter is read-write.
Location	**v52-user-port**

role

The C-channel role. This value must match the value on the switch.

Values	**active**

The C-channel is in active mode.

standby

The C-channel is in standby mode.

switchToStandby

This value can be set only when the C-channel is in **active** mode. If the **role** parameter is set to **switchToStandby**, one of the standby channels in the same protection group will take over as the new active channel. When the switch has been completed, the original channel becomes a standby channel in its protection group.

Default	**active**
Access	This parameter is read-write.
Location	**v52-cchannel**

shelf

The system shelf. Zero (0) is an invalid value.

Values	**1 to 255, inclusive.**
Access	This parameter is read-only.
Location	**v52-interface-group-stats**

startup-unblock-user-ports

Indicates whether or not user ports will be unblocked when the V5.2 interface is starting up.

Values	**true**
	false
Default	**true**
Access	This parameter is read-write.
Location	**v52-interface-group**

startup-check-link-id

Indicates whether or not a Link ID check will be performed when the V5.2 interface is starting up.

Values	**true**
	false
Default	**true**
Access	This parameter is read-write.
Location	**v52-interface-group**

switch-vendor

The switch vendor for this V5.2 IG.

Values	**unknown**
	lucent
	nortel
	alcatel
	ericsson
	nokia
	siemens
	samsung
Default	**unknown**
Access	This parameter is read-write.
Location	**v52-interface-group**

t200

The maximum layer two wait time for an acknowledgment of a transmitted frame. Units are in milliseconds, in increments of 50.

Values	**100 to 1000, inclusive.**
Default	**150**
Access	This parameter is read-write.
Location	**v52-interface-group-lapv**

t203

Maximum layer two idle time before connection verification is necessary. Units are in seconds, in increments of ten.

Values	**1 to 300, inclusive.**
Default	**30**
Access	This parameter is read-write.
Location	**v52-interface-group-lapv**

time-slot-index

The channel that the C-channel is running over.

Values	**15**
	16
	31
Location	**v52-interface-group**

type

The type of communications path. This tells the system how the management information is communicated.

Values	**unknown**
	pstn
	POTS
	ctrl
	control protocol
	bcc
	bearer channel connection
	lctl
	link control protocol

isdnds
> BRI voice data

Default **unknown**

Access This parameter is read-write.

Location **V52_CPath**

v52-c-channel:array[1..3]

This array describes up to three control channels per link (E1). There can be up to three control channels on each of the 16 links for a maximum of 48. C-channels are used to pass management information between then LE and the Zhone device system. It includes the **time-slot-index**, **logical-channel-id**, **protection-group**, **role**, and **c-channel-valid-flag** parameters.

Location **v52-interface-group**

v52-c-path:arrary[1..48]

This array describes communications paths. C-paths are used to specify the type of information running between the Zhone device and the LE. C-paths run inside C-channels. There can be up to 48 C-paths inside each C-channel. This array includes the **id**, **type**, **logical-channel-id**, and **c-path-valid-flag** parameters.

Values **Use the logical-channel-id numbers created for the C-channels.**

Location **v52-interface-group**

v52-ig-lapv

An array of V5.2 Lapv timer parameters. These configure retries and other functions over the management links. This array includes the parameters **max-outstanding frames**, **n200**, **n201**, **t200**, and **t203**.

Location **v52-interface-group**

v52-link[1..16]

This array is used to provision the E1circuits between the LE and the Zhone device. There can be up to sixteen links. Each E1 link has 32 channels. This array includes the **dsn-lg-id**, **ds1-channel-number**, **id**, **check-id**, **check-id-status**, and **block** parameters.

Location **v52-interface-group**

voice-V52-interface-name

The name of the V5.2 interface group. This is the same as the **name-id** from the **v52-interface-group** profile.

| Location | subscriber-voice-v52 |

voice-V52-isdn-channel-id

The ISDN B or D channel used for the connection.

| Location | subscriber-voice-v52 |

voice-V52-user-port-id

A port ID for the V5.2 user port. This is the same as the **local-interface-id** in the **v52-interface-group** profile.

| Location | subscriber-voice-v52 |

voice-V52-user-type

The type of V5.2 user port.

Values	**POTS**
	isdndchannel
	isdnbchannel
Location	subscriber-voice-v52

VDSL

mode

Type of VDSL equipment.

Values	**vtu-r**
	customer premise equipment
	vtu-o
	central office equipment
Default	**vtu-o**
Location	**vdsl-config**

us-max-const

Restrict upstream quadrature amplitude modulation (QAM) constellations to use those that do not exceed this maximum.

Values	QAM-4
	QAM-8
	QAM-16
	QAM-32
	QAM-64
	QAM-128
	QAM-256
Default	**QAM-128**
Location	**vdsl-config**

Voice

ds0-channel-id

The DS0 assigned to this subscriber.

Access	This parameter is read-write.
Location	**subscriber-voice-ds1**

ds1-line-group

The line group Interface Index of the DS1 interface.

Access	This parameter is read-write.
Location	**subscriber-voice-ds1**

echo-cancellation-type

Which echo cancellation algorithm is used for a particular channel.

G.168 has stricter technical specs and defines how the tests are performed better than G.165. If an echo canceller meets the G.168 specification, it is G.168 and G.165 compliant.

The number following the designation describes the echo tail length in milliseconds. The echo tail length that is required depends on several factors, including the network configuration, local loop length, and line frequency response. Generally, 16ms is adequate for local loop and 32ms is a good minimum for network equipment.

Values	**g165EchoTL16**
	G.165 echo cancellation with echo tail length of 16ms (MALC only)

g168EchoTL48

G.168 echo cancellation with echo tail length of 48ms (BAN, Sechtor 100A, Z-Edge)

off

Echo cancellation is off.

Default **g165Echotl16 (MALC)**

g168Echotl48 (BAN, Sechtor 100A, Z-Edge)

Location **voice-dsp-default-profile**

echo-return-loss

The amount of loss between the transmitted signal and the reflected echo back from the hybrid where the 4-to-2 wire conversion takes place.

Values **0 dB, 6 dB**

MALC

0dB, 3dB, 6dB

BAN, Sechtor 100A, Z-Edge

Default **6 (MALC)**

3 (BAN, Sechtor 100A, Z-Edge)

Location **voice-dsp-profile**

Notes For the BAN and Sechtor 100A changes to the echo return loss take effect on the next call.

For the MALC and Z-Edge, changes to the echo return require the CID or the VCL to be brought down and up again, or the system rebooted.

Products BAN, MALC, Raptor, Sechtor 100A, Z-Edge

features

Enables voice features on a per subscriber basis.

Values **hookflash**

hookflash detection.

onhooksignaling

onhook signaling.

alwaysoffhook

call is established as soon as incoming call initiation is made.

+

This allows multiple settings. For example, **hookflash**+**onhooksignaling**.

Default **hookflash**+**onhooksignaling**

Access This parameter is read-write.

Location **subscriber-voice**

Products MALC, ZRG

hookflash-max-timer

Specifies the maximum timer that qualifies for a hookflash. Any loopopen more than this timer will be considered as a onhook.

Access This parameter is read-write.

Location **voice-system**

Products MALC

hookflash-min-timer

Specifies the minimum timer that qualifies for a hookflash. Any loopopen below this time will be ignored.

Access This parameter is read-write.

Location **voice-system**

Products MALC

huntgroup

Determines if this connection is part of a huntgroup.

Default **false**

Access This parameter is read-write.

Location **subscriber-voice**

Products MALC

hunt-group-index

The hunt group this subscriber is part of. Each subscriber can be part of 3 hunt groups.

Access This parameter is read-write.

Location **subscriber-voice-ds1, subscriber-voice-pots**

Products MALC

inter-arriv-jit-threshold

The inter-arrival jitter threshold in milliseconds per channel that is used as a trigger value to generate a trap when its value is passed. If the value is 0, the threshold monitoring is disabled for inter-arrival jitter.

Values	**0 to 100ms, inclusive.**
Default	**80ms**
Access	This parameter is read-write.
Location	**voice-dsp-default-profile**

jitter-buffer-size

The voice DSP jitter buffer size in milliseconds. It refers to the amount of memory usage that can store certain milliseconds of voice.

For the BAN and Sechtor 100A, changes to the jitter buffer take effect on the next call.

For the Z-Edge, changes to the jitter buffer require the CID or the VCL to be brought down and up again, or the system rebooted.

Values	**1 to 160**
	Note that changes to the jitter buffer are based on 5 ms frame sizes. For example:
	1 to 5 = 5 ms
	6 to 10 = 10 ms
	11 to 15 = 15 ms
	16 to 20 = 20 ms
	21 to 25 = 25 ms
	26 to 30 = 30 ms
	.....
	146 to 150 = 150 ms
	151 to 155 = 155 ms
	156 to 160 = 160 ms
Default	**10 (BAN, Sechtor 100A, Z-Edge)**
Location	**voice-dsp-default-profile**

jitter-buffer-type

The voice DSP channel jitter buffer defaults. The jitter buffer accommodates the cells/packets received, so that the inter-arrival jitter of the cells/packets received don't degrade the voice quality. Without a jitter buffer, some cells as inter-arrival jitter changes would be late, which would have the same effect as lost cells. The jitter buffer also reorders the out-of-order cells/packets received.

Values	**static**
	A static jitter buffer does not allow the jitter buffer to grow and shrink in response to changes in jitter.

Default **static**

Access This parameter is read-write.

Location **voice-dsp-default-profile**

malicious-caller-uri

Incoming call from this URI will be rejected.

Access This parameter is read-create.

Location malicious-caller

pkts-lost-threshold

How many voice DSP channel packets are lost per minute threshold. A trap is generated when this value is exceeded. If this value is 0, threshold monitoring is disabled for lost packets.

Values **0 to 10000 packets per minute.**

Default **600**

Access This parameter is read-write.

Location **voice-dsp-default-profile**

redundancy-over-subscription-type

The voice DSP redundancy oversubscription method.

A resource is called active if it is in use and is called standby if it is in reserve in case the active resource fails. The standby resources in redundant configurations can be oversubscribed. The active resource is not used when standby resources are allocated, however, if the active resources are at maximum capacity, there will be no standby resources available to take over in case of failure.

Values **high**
    Implies infinite oversubscription.

low
    Implies 1:2 oversubscription.

medium
     Implies 1:4 oversubscription.

none
    Implies 1:1 (one to one) oversubscription. When a standby is allocated, the pool of available actives is depleted by one.

Default **none**

Access This parameter is read-write.

Location **voice-dsp-default-profile**

Products BAN

reject-enabled

Indicates whether the incoming call reject is enabled.

Default **true**

Access This is a read-create parameter.

Location **malicious-caller**

Products MALC

silence-suppression-type

Which silence suppression algorithm the voice DSP should use on a channel. Silence suppression stops voice packet generation during periods of silence.

The SID (silence descriptor) frame is generated at the start of a silence period, then periodically, and is used to characterize the power level of the background noise during the silence period on the encode side of the voice path. The SID frame is passed to the decode side through a packet encoding medium (AAL2 or RTP). The decode side then generates comfort noise at an equivalent power level dictated by the SID frame values.

Values **silSupOff**
Silence suppression is off.

silSupOnSidOn
An initial SID frame is sent and then transmission every 100 ms.

Default **silSupOff**

Access This parameter is read-write.

Location **voice-dsp-default-profile**

voice-aal2-cid

The ATM Adaption Layer 2 channel identifier (AAL2 CID) for the connection.

Location **subscriber-voice**

voice-aal2-line-group-id

The line group ID for this AAL2 connection.

Location **subscriber-voice**

voice-aal2-vci

The AAL2 VCI for this connection.

Location **subscriber-voice**

voice-aal2-vpi

The AAL2 VPI for this connection.

Location **subscriber-voice**

voice-access

Indicates whether the specified user has voice privileges.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

voice-connection-description

A text string describing this voice call entry.

A common use is to define the external or public phone number for this voice line as assigned by the class 5 switch.

Default **none**

Access This parameter is read-write.

Location subscriber-voice

Products MALC

voice-connection-type

This describes the connection type between the two voice endpoints. Where applicable the first endpoint refers to the line or premise side of the connection and the second endpoint refers to the central office side of the connection.

Voice connections are created with the **voice add** command.

Values **aal2togr303**
AAL2 VPI/VCI/CID to GR-303 interface group/CRV.

aal2tov52
AAL2 VPI/VCI/CID to V5.2 interface/user port.

voiptogr303
VOIP to GR-303. Requires the MALC Voice Gateway card.

elcpaal2tov52
Only supported on the Sechtor 100 and the BAN.

potstoaal2
POTS to ATM AAL2.

isdntoaal2
ISDN to ATM AAL2.

isdntov52
ISDN to V5.2 interface/user port

potstogr303
POTS to GR-303.

potstov5
POTS to V5.2.

voiptods1
VOIP to DS1.

siptogr303
SIP to GR-303. Requires the MALC Voice Gateway card.

voiptov52
VOIP to V5.2. Requires the MALC Voice Gateway card.

elcpaal2tov52
ELCP to V5.2. Requires the MALC Voice Gateway card.

isdntov52
ISDN to V5.2.

ebstogr303
Electronic business system (EBS) to GR-303.

voiptopots
VOIP to POTS.

isdnsigtovoip
ISDN PRI to VOIP. Supported on the Z-Edge 6200 only.

potstods1
POTS to DS1.

potstoclass5
POTS to a class 5 switch.

Location **subscriber-voice**

voice-ebs-line-group-id

The line group ID for the associated connection.

Default **none**

Access This parameter is read-write.

Location subscriber-voice-ebs

Products 6200

voice-endpoint1-addr-index

The index into the associated address table for this end point. EndPoint1 should describe the line or premise side of the connection where applicable.

Default **none**

Access This parameter is read-write.

Location subscriber-voice

Products MALC

voice-endpoint2-addr-index

The index into the associated address table for this end point. EndPoint2 should describe the central office side of the connection where applicable.

Default **none**

Access This parameter is read-write.

Location subscriber-voice

Products MALC

voice-ext-type

The external or public phone number for this voice line as assigned by the Class 5 switch. This value is not used by the system and is provided only for operator reference.

voice-GR303-ig-crv

The crv for the associated connection.

Default **none**

Access This parameter is read-write.

Location **subscriber-voice-gr303**

Products MALC

voice-GR303-ig-name

The IG name for the associated connection.

Default **none**

Access This parameter is read-write.

Location **subscriber-voice-gr303**

Products MALC

voice-pots-line-group-id

The line group ID for the associated connection.

Location **subscriber-voice-pots**

User

data-access

Indicates whether the specified user has data privileges.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

database-access

Indicates whether the specified user has database privileges.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

debug access

Indicates whether the specified user has debug privileges. This parameter is read-only.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

user-admin-access

Indicates whether the specified user has user-admin privileges that enable the user to create user accounts.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

user-id

Specifies the user ID for this user.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

user-name

Specifies the user name.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

user-pass

Specifies the password for this user.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **changepass** or **resetpass** commands to change user account passwords.

user-prompt

Specifies the user-prompt for this user.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

zhone-access

Indicates whether the specified user has Zhone privileges.

Access This parameter is read-only.

Location **user-profile**

Notes Use the **adduser** and **updateuser** commands to configure user accounts.

VOIP

destination-name

The name of the destination of the specified dial string.

Access This parameter is read-write.

Location **sip-dialplan**

dialplan-type

Indicates the type of dialplan used.

Values **normal**
Indicates normal dialing in use.

call park
Indicates dialing features such as call parking are used. Call parking places a call in a common holding or parking zone of the PBX so that any extension can retrieve the parked call.

Access This parameter is read-write.

Location **sip-dialplan**

directory-number

The directory number (phone number) assigned to this endpoint. Contains only digits.

Access This parameter is read-write.

Location **subscriber-voice-voip**

expires-invite-value

For user agent clients, this value in seconds is inserted into the Expires header. For proxy servers, if a received request contained an Expires header, then the value in the header takes precedence.

Access This parameter is read-write.

Location **sip-expires-timer-cfg**

expires-register-value

For user agent clients, this value in seconds is inserted into the Expires header. For proxy servers, if a received request contained an Expires header, then the value in the header takes precedence.

Access This parameter is read-write.

Location **sip-expires-timer-cfg**

expires-register-method

This convention is a bit map. Each bit represents a SIP method where the Expires header should be included. If a bit has value 1, then the requests corresponding to that SIP method must include an Expires header line. If a bit has value 0, then the Expires header line will not be added. Combinations of bits can be set when the Expires header line is required in multiple SIP methods.

Values **bit 0**
INVITE method

bit 1
REGISTER method

Access This parameter is read-write.

Location **sip-expires-timer-cfg**

frames-per-packet

Indicates the number of voice frames per IP packet.

Default **4**

Access This parameter is read-write.

Location **subscriber-voice-voip**

g711-fallback

Indicates whether a subscriber may consume bandwidth by switching to g711, when a fax, modem, b-channel data session is detected.

Default **true**

Access This parameter is read-write.

Location **subscriber-voice-voip**

Products MALC

g726-byte-order

Indicates the byte order to be used when g.726 voice coding is in use. Cisco uses little endian byte order, whereas the g.726 standard calls for big endian byte order.

Default **bigEndian**

Access This parameter is read-write.

Location **subscriber-voice-voip**

Products MALC

interdigit-timeout

Indicates the duration, in seconds, that the device will wait after each digit is entered before assuming the user has finished entering digits.

Default **10**

Access This parameter is read-write.

Location **voip-system**

Products MALC

ip-interface-index

Interface Index of the LP Interface through which the SIP signalling and RTP traffic flow.

Access This parameter is read-write.

Location **subscriber-voice-voip**

ip-tos

The type of service (TOS) value that is set in the IP header for voice over IP traffic.

Default **0**

Location **voip-system**

Products MALC

keep-alive-timer

Specifies a timeout value in seconds for sending a keep alive message to MGCP servers.

Values **0 to 65535 seconds**
0 disables the timer.

Default **60 seconds**

Location **voice-system**

Notes • This parameter should be set to the same value as the MGCP server's Audit Endpoint (AUEP) interval.

• This parameter is only supported for Tekelec 6000 VoIP Application Server.

Products MALC

match-string

A dialstring against which collected digits are matched.

Access This parameter is read-write.

Location **sip-dialplan**

number-of-digits

The number of digits to wait for before initiating the call.

Access This parameter is read-write.

Location **sip-dialplan**

preferred-codec

Defines the preferred voice codec to be used for this subscriber.

Values **g711a**

g711mu

g723

g726

g729a

Default **g711mu**

Location **subscriber-voice-voip**

Products MALC

prefix-add

Specifies the string that is added to the beginning of the dialed digits before the call is initiated.

Access This parameter is read-write.

Location **sip-dialplan**

Products MALC

prefix-strip

Specifies the number of prefix digits to strip from the dialed digits.

Access This parameter is read-write.

Location **sip-dialplan**

Products MALC

protocol

The signalling protocol used for VOIP. Choices are SIP (Session Initiation Protocol) and MGCP (Media Gateway Control Protocol.

Default **SIP**

Access This parameter is read-write.

Location **voip-system**

Products MALC

rtcp-enabled

Indicates whether the Real-Time Control Protocol is enabled for the device.

Default **false**

Access This is a read-write parameter.

Location **voip-system**

Products MALC

rtcp-packet-interval

RTCP packet interval, in milleseconds. Range is 2500 to 10000 ms.

This object's value is only pertinent if RTCP has been enabled.

Default **5000**

Access This parameter is read-write.

Location **voip-system**

Products MALC

send-call-proceeding-tone

Indicates whether, on call originations destined to the PSTN, the device should play a call proceeding tone while waiting for ring-back tone from the switch.

Default **false**

Access This parameter is read-write.

Location **voip-system**

Products MALC

server-max-timer

Specifies the period between RSIP retry messages. For redundant MGCP servers, this the interval between RSIP messages to each server.

Values	**0 to 65535 seconds** 0 disables the timer.
Default	**20 seconds**
Location	**voice-system**

sip-ip-address

When a match is detected between the collected digits and the dial string in this SIP dialplan, this IP address is used for SIP negoitations to initiate the call.

Access	This parameter is read-write.
Location	**sip-dialplan**
Products	MALC

system-domain-name

The Universal Resource Identifier (URI) of the system.

Default	**none**
Access	This parameter is read-write.
Location	**voip-system**
Products	MALC

voip-password

Authentication string needed for call originations through a SIP/MGCP Server.

Access	This parameter is read-write.
Location	**subscriber-voice-voip**
Products	MALC

voip-plar

The subscriber PLAR (private line automatic ringdown) subscriber. If true we immediately send a INVITE instead of play dial tone.

Default	**false**
Access	This parameter is read-write.

Location	**subscriber-voice-voip**
Notes	This parameter applies to only SIP signaling.
Products	MALC

voip-plar-dest-ipaddr

The destination IP address or domain name of the device to send INVITE to in case the subscriber is PLAR (private line automatic ringdown).

Access	This parameter is read-write.
Location	**subscriber-voice-voip**
Notes	This parameter applies to only SIP signaling. To use this setting, the voip-plar parameter must be set to true.
Products	MALC

voip-plar-dest-ipaddrtype

The type of address contained in the associated instance of VoipPlarDestIpAddr.

Default	**ipv4**
Access	This parameter is read-write.
Location	**subscriber-voice-voip**
Products	MALC

voip-server-entry-index

Specfied in the SIP dialplan and when the viop-server-entry index is created, this number is used to associate dialplans and VOIP registration servers.

Access	This parameter is read-write.
Location	sip-dialplan

voip-udp-port

Specifies the UDP Port number for the VOIP Setup messages. 5060 is the IANA Registered SIP port.

Default	**5060**
Access	This parameter is read-write.
Location	**subscriber-voice-voip**
Products	MALC

voip-username

A unique string that identifies the VOIP user in the system.

Default **none**

Access This parameter is read-write.

Location **subscriber-voice-voip**

Products MALC

zhoneVoipServerAddr

The address of a VOIP server this user agent will use to proxy/redirect calls.

Default **none**

Access This parameter is read-write.

Location **voip-system**

Products MALC

zhoneVoipServerAddrType

The type of address

Default **ipv4**

Access This parameter is read-write.

Location **voip-system**

Products MALC

zhoneVoipServerUdpPortNumber

Specifies the UDP Port number for the MGCP Gateway. 2427 is the IANA Registered MGCP Gateway port.

Default **2427**

Access This parameter is read-write.

Location **voip-system**

Products MALC

ZMS

ackedseqno

Acknowledged trap sequence number. This field is set by the ZMS in order to acknowledge a trap sent by the device. There will be only one trap outstanding on the acknowledged flow at one time so this is the last sequence number sent. If not, it is ignored.

Location **trap-destination**

resendseqno

This is set by the ZMS in order to have the device resend saved traps because one or more were lost in transmission. The device will resend traps starting at this sequence number.

This is used only on the unacknowledged trap flow. This is the only indication of whether any traps have been acknowledged.

Location **trap-destination**

Notes Due to resource constraints not all traps may be available to be resent. The first trap that the device resends indicates whether or not any traps were deleted or lost.

zmsconnectionstatus

The status of the connection between this device and the Zhone Management System, if one exists. This value can either be set directly by ZMS or by the device internally when a SNMP request is processed from the ZMS. Devices not being proxied by another entity, since they are not being polled by ZMS, will set this state according to the communication channel state between this device and the connected entity.

Values **active**

inactive

Default **inactive**

Location **system**

zmsexists

Indicates whether or not this device is being managed by the Zhone Management System. This is can be set only by the ZMS.

Management operations depend on this setting. For example, if this device is not managed by ZMS, no configuration synchronization processing is performed on behalf of the device.

Values   **true**
> The device is managed by the ZMS.

false
> The device is not managed by the ZMS.

Default   **no**

Location   **system**

zmsipaddress

The ZMS IP address for which configuration synchronization messages and any other special handling is performed. This can be set either via CLI or ZMS.

Location   **system**

Parameters

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