

Zhone EtherXtend 30xx Series CLI Users Guide

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Z H O N E [™]

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2 ABOUT THIS GUIDE

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

Note: This document describes all the parameters and commands in the EtherXtend 30xx Series for Release 1.1.

The parameters and commands that appear on a particular system depend on the system software running and the hardware configuration of the device.

2.1 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.
<i>Fixed Bold Italic</i>	Used in code examples for variable text typed by users.
<i>Italic</i>	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.
<i>Command Syntax</i>	Commands that have to be typed as shown in the shell, filenames, code, and contents are preceded with a prompt. For example: EtherXtend > show system general-info.
	Vertical bars () separate alternative, mutually exclusive, elements.
	Braces ({ }) indicate a required choice.
	Square brackets ([]) indicate optional elements.
	Braces within brackets ([{ }]) indicate a required choice within an optional element.



2.2 ACRONYMS

The following acronyms appear throughout this manual:

Acronym	Description
ACL	Access List
CLI	Command Line Interface
CDL	Command Definition Language
XML	Extensible Markup Language
XSD	XML Schema Definition
10P	label to indicate “pertains to 10PASS-TS port-type”
10P/2B	label to indicate “pertains to 10PASS-TS and 2BASE-TL port-types”
2B	label to indicate “pertains to 2BASE-TL port-type”
2-PAM	two level pulse amplitude modulation
CO	central office
CPE	customer premises equipment
DSL	digital subscriber line
EFM	Ethernet in the first mile
LT	line termination
NT	network termination
OAM	operations, administration, and maintenance
PAF	PME aggregation function
PAM	pulse amplitude modulation
PME	physical medium entity
PMS-TC	physical media specific - transmission convergence
PSD	power spectral density
SHDSL	single-pair high-speed digital subscriber line
TC	transmission convergence
TTY	teletypewriter

2.3 RELATED DOCUMENTS

Refer to the documentation that came with your device for information about installing the EtherXtend access device. Other related documents for the EtherXtend CPE products can be obtained from www.zhone.com/support/manuals.



2.4 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

2.4.1 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	http://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.

2.4.2 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.



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3 BASIC CLI INTERFACE

The EtherXtend Command Line Interface provides the capability to:

- Change the operational characteristics of the device by setting configuration values
- Display system status
- Perform diagnostics

3.1 ACCESSIBILITY

The EtherXtend Command Line Interface is accessible through a directly connected serial console terminal (tty) session, through a Telnet client session, or through a SSH client session.

To access a EtherXtend unit through the directly connected serial console interface, the terminal emulation communications program, such as Microsoft® HyperTerminal or Linux Minicom, must be configured with the following serial port settings:

```
Port Rate (Bps) = 9600
Data bits= 8
Parity = None
Stop bits= 1
Hardware/Software Flow Control = Off
```

To access a EtherXtend unit through a Secure Shell (SSH) session, a SSH client that is compatible with the OpenSSH server 2.0 must be installed on your PC or workstation, such as the Windows compatible PuTTY® OpenSSH client. For details on how to install an OpenSSH client, go to <http://www.putty.nl/download.html>.

For more information on the OpenSSH client remote login program, go to <http://www.openssh.com>.

3.2 MODES OF OPERATION

Normally, all commands are executed from the root of the command line tree. This requires that the entire command be entered on one line. This is the preferred method for automated scripts. Some commands, such as configuration, will allow the user to step through the commands one token at a time. Each token enters a sub mode from the main command. This feature simplifies the configuration of interfaces that have numerous parameters.

3.3 COMMAND RECALL

The user can scroll through the command history by using the <up> and <down> arrows on the keyboard. In addition, the CLI provides a “history” command whereby the user can not only display the commands entered (which is useful for scripting purposes), but can also configure the number of commands that can be stored in the history buffer and save the history file to a remote tftp or http server.

3.4 COMMAND MODES

Many commands support a lower-level command mode of operation. Command modes allow the CLI user to configure or show a group or set of commands or command options without having to re-enter redundant command prefixes. For example, suppose a user would like to configure all of the vlan configuration options like port configuration, port default and QOS configuration options for a particular vlan. To do so, the user could enter the “config vlan” command mode as shown below:



```
config> vlan
  <enter>          - Enter command mode

  portdefaults    - Configure VLAN defaults for a port
  qosconfig       - Configure QOS settings for a VLAN
  vlanconfig      - Configure VLANs and VLAN port assignments
```

By typing “vlan <enter>”, a user could enter the “vlan” command mode and receive the following prompt:

```
vlan>
```

Once in the “vlan” command mode, the user can now configure the “vlanconfig”, “portdefaults” or “qosconfig” commands without having to prefix each command with “config vlan”.

3.5 COMMAND LINE ACCESS LEVELS

New user accounts can be added/deleted/modified by any CLI user that has access to the user-mgmt configuration commands. As new user accounts are configured, a user role for each user account must also be configured. Three types of user accounts, or user “roles” are supported:

su (Superuser) - User can exit to the busybox and execute all CLI commands

admin (Administrator) - User cannot exit to the busybox, but can execute all other CLI commands

user - User can only execute CLI “show” commands

The default **admin** account will have superuser access to CLI commands.

3.6 COMMAND LINE HELP

A description of every command and the command line options are available by typing in a “?”. For example, to obtain help with the “config admin-tools” command, execute:

```
EtherXtend> config admin-tools ?
```

```
<enter>          - Enter command mode
settings         - Configure Restore-Backup settings
save             - Save configuration
restore          - Restore configuration
```

For ease of use, a “tab” will also fill in the remainder of a command. For example, the execution of the command “config ad<tab>” will result in:

```
EtherXtend> config admin-tools
```

3.7 BUSYBOX ACCESS

The CLI supports the ability to switch user interface context between the CLI and the busybox. To enter into the busybox mode, execute the “**shell**” command. To exit from the busybox mode, type in “**exit**”.

The Busybox is provided for Zhone Global Service and Support (GSS) Personnel and should not be used unless requested by GSS Personnel.



3.8 ETHERXTEND INTERFACES

In the initial release, EtherXtend will support the following default interface names for the physical interfaces:

- **eth0** – 1, 2, or 4 port 2BaseTL (SHDSL.bis EFM) bonded aggregation interface group.
- **eth1** – 10/100 BaseT Internal Ethernet Switch device.
- **eth1:0** – 10/100 BaseT Ethernet access port 1 that can provide up to 5W of 48VDC 802.3af power for connecting local ethernet devices to the network.
- **eth1:1** – 10/100 BaseT Ethernet access port 2 that can provide up to 5W of 48VDC 802.3af power for connecting local ethernet devices to the network.
- **eth1:2** – 10/100 BaseT Ethernet access port 3 that can provide up to 5W of 48VDC 802.3af power for connecting local ethernet devices to the network.
- **eth1:3** – 10/100 BaseT Ethernet access port 4 that can provide up to 5W of 48VDC 802.3af power for connecting local ethernet devices to the network.

EtherXtend will also configure, by default, the following bridge and vlan logical interfaces:

- **br0** - default internal bridge interface.
- **brvlan1** – default bridge interface for vlan 1 for untagged, user traffic.
- **brvlan7** - default bridge interface for vlan 7 for tagged, management traffic.
- **eth0.1** – default vlan 1 interface for the SHDSL.bis EFM bonded group interface.
- **eth0.7** – default vlan 7 interface for the SHDSL.bis EFM bonded group interface.
- **eth1.0** – default vlan 0 interface for the 10/100 BaseT Internal Ethernet Switch device.
- **eth1.1** – default vlan 1 interface for the 10/100 BaseT Internal Ethernet Switch device.
- **eth1.7** – default vlan 7 interface for the 10/100 BaseT Internal Ethernet Switch device.
- **eth1:0.1** – default vlan 1 interface for 10/100 BaseT Ethernet access port 1.
- **eth1:1.1** – default vlan 1 interface for 10/100 BaseT Ethernet access port 2.
- **eth1:2.1** – default vlan 1 interface for 10/100 BaseT Ethernet access port 3.
- **eth1:3.1** – default vlan 1 interface for 10/100 BaseT Ethernet access port 4.



Below is a sample configuration for an EtherXtend ETHX-3024 with multiple VLANs:

		ETH1:3 (LAN4) I/F			
		format: PhysIF:SubIF.VLANID			
		ETH1:3.118			
		ETH1:3.119			
		ETH1:3.120			
		ETH1:3.121			
		ETH1:3.122			
		ETH1:3.123			
		ETH1:3.700			
		ETH1:2 (LAN3) I/F			
		format: PhysIF:SubIF.VLANID			
		ETH1:2.112			
		ETH1:2.113			
		ETH1:2.114			
		ETH1:2.115			
		ETH1:2.116			
		ETH1:2.117			
		ETH1:2.700			
		ETH1:1 (LAN2) I/F			
		format: PhysIF:SubIF.VLANID			
		ETH1:1.106			
		ETH1:1.107			
		ETH1:1.108			
		ETH1:1.109			
		ETH1:1.110			
		ETH1:1.111			
		ETH1:1.700			
ETH1:0 (LAN1) I/F					
format: PhysIF:SubIF.VLANID					
ETH1:0.100					
ETH1:0.101					
ETH1:0.102					
ETH1:0.103					
ETH1:0.104					
ETH1:0.105					
ETH1:0.700					
				ETH0 (DSL) Interface	
				Format: PhysIF.VLANID	
				ETH0.100	
				ETH0.101	
				ETH0.102	
				ETH0.103	
				ETH0.104	
				ETH0.105	
				ETH0.106	
				ETH0.107	
				ETH0.108	
				ETH0.109	
				ETH0.110	
				ETH0.111	
				ETH0.112	
				ETH0.113	
				ETH0.114	
				ETH0.115	
				ETH0.116	
				ETH0.117	
				ETH0.118	
				ETH0.119	
				ETH0.120	
				ETH0.121	
				ETH0.122	
				ETH0.123	
				ETH0.700	
				ETH0.701	

EtherXtend CPE

BR (Internal Bridge) Interface	BRVLAN (Mgt) Interface	
Format: LogicalPort (Untagged Traffic Only)	Format: LogicalPortVLANID	
BR0	BRVLAN700 (192.168.1.1)	ETH0.700
	BRVLAN701 (192.168.2.1)	ETH0.701

NOTE:
 Every configured VLAN will be assigned a bridge, creating a vlan bridge interface. The **Bridge Interfaces** status screen will display all configured VLAN bridge interfaces. The VLAN bridge interfaces that may be use for management access to the EtherXtend unit must have an IP address assigned to them. In this example, BRVLAN700 and BRVLAN701 are VLAN bridge interfaces that may be used to gain management access into the EtherXtend unit.



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4 ETHERXTEND COMMAND SET

The structure of the CLI commands supported by EtherXtend is similar to a tree. There are major commands that define a set of similar commands. Upon entering a major command, the CLI will enter into that command node of the command tree and allow all the the sub-commands of the major command defined to be visible with the help '?' command.

4.1 COMMAND TREE

4.1.1 Top Level Command Tree

config	- Configure EtherXtend parameters
show	- Display EtherXtend parameters
test	- Test EtherXtend features
history	- Show / Save / Load CLI command history
alias	- Show defined aliases / Add an alias for a command
exec-replay	- Replay command from the file
exit	- Exit from the current tree and go to parent
where	- Show the path of the current module from the root
logout	- Log out from the current session
cli-settings	- Configure / Show CLI settings
tree	- Show module tree under the current module
previous-module	- Go to the previous module
alias-file	- Save current aliases to file/Load aliases from file

4.2 GLOBAL COMMANDS

exit	- Exit from the current tree and go to parent
where	- Show the path of the current module from the root
logout	- Log out from the current session
cli-settings	- Configure / Show CLI settings
tree	- Show module tree under the current module
previous-module	- Go to the previous module
alias-file	- Save current aliases to file/Load aliases from file

The global commands listed above are accessible at each major command level. For example, if the "config bridge" command is executed, the major command level for all "config bridge" is entered. All "config bridge" sub-commands and all global commands can be executed at this major command level.

4.2.1 exit

SYNTAX:	<code>exit</code>
DESCRIPTION:	Exit from the current tree and go back one level to the parent command module
EXAMPLE:	<code>settings> exit</code> <code>admin-tools></code>

4.2.2 where

SYNTAX:	<code>where</code>
DESCRIPTION:	Shows the path of the current module from the root module.
EXAMPLE:	<code>settings> where</code> <code>EtherXtend->config->admin-tools->settings</code>



4.2.3 logout

SYNTAX: `logout`

DESCRIPTION: Log out from the current cli session.

EXAMPLE: `settings> logout`
`EtherXtend>`

4.2.4 cli-settings

SYNTAX: `cli-settings more {enable | disable}`

DESCRIPTION: Enable or disable the CLI support for paginating command responses (i.e. the "more" feature)

EXAMPLE: `EtherXtend > cli-settings more enable`

4.2.5 history

SYNTAX: `history`

DESCRIPTION: Display the history of the CLI commands executed for the current session.

EXAMPLE: `settings> history`

```
0 2006-01-01 11:07:21 config
1 2006-01-01 11:10:51 admin-tools
2 2006-01-01 11:11:54 settings
3 2006-01-01 11:13:22 history
```

4.2.6 tree

SYNTAX: `tree [show-all]`

DESCRIPTION: Display all CLI modules under the current module.

EXAMPLE: `admin-tools> tree`

```
admin-tools
  -settings
  -save
  -restore
```

4.2.7 previous_module

SYNTAX: `previous_module`

DESCRIPTION: Go to the previous CLI module in the CLI history file.

EXAMPLE: `admin-tools> previous_module`

```
settings>
```

4.2.8 exec-replay

SYNTAX: `exec-replay <filename> [echo-off]`

<filename> - Name of the exec replay file (1-100 alph-numeric characters)
echo_off - Disables echo

DESCRIPTION: Execute the CLI commands in the specified file. Useful for scripting repetitive command sequences.

EXAMPLE: `admin-tools> exec-replay vlan_config_commands echo-off`



4.2.9 alias

SYNTAX: `alias <newname>=<oldname>`

<newname> - Enter name followed by "="
<oldname> - Enter value

DESCRIPTION: Creates a command alias "newname" for an existing command "oldname".

EXAMPLE: `admin-tools> alias back=exit`

4.2.10 alias-file

SYNTAX: `alias-file {save | load} <filename>`

<filename> - Alias file name

DESCRIPTION: Saves all command aliases to a file on the Flash File System, or loads command aliases from a file on the Flash File System.

EXAMPLE: `alias-file save /etc/alias.exec`



4.3 CONFIGURE COMMANDS

admin-tools	- Configuration options
vlan	- VLAN configuration
bridge	- Bridge and Bridge Port configuration
system	- System configuration
if	- Interface configuration
swupgrade	- Software Upgrade configuration
usrmgmt	- User Management configuration

4.3.1 Configure Administrative Tools

settings	- Configure Restore-Backup and History settings
save	- Save configuration
restore	- Restore configuration

4.3.1.1 Configure Administrative Tools Settings

history-size	- history size
tftp-server	- Configure tftp server
always-save-running-config	- always save running config

4.3.1.1.1 config admin-tools settings history-size

SYNTAX: `config admin-tools settings history-size <historysize>`

<historysize> - Enter history (buffer) size

DESCRIPTION: Configure the number of CLI commands that are stored in the history command file and displayed.

EXAMPLE: `settings> history-size 200`

4.3.1.1.2 config admin-tools settings tftp-server

SYNTAX: `config admin-tools settings tftp-server <server_ip_addr>`

<tftpserver> - Enter TFTP Server IP address

DESCRIPTION: Configure the IP Address of the TFTP server used for transferring files to/from the unit.

EXAMPLE: `settings> tftp-server 10.10.10.200`

4.3.1.1.3 config admin-tools settings always-save-running-config

SYNTAX: `config admin-tools settings always-save-running-config {enable | disable}`

DESCRIPTION: Enable/disable the ability to always save the configuration to permanent, non-volatile storage when a configuration change occurs.

EXAMPLE: `settings> always-save-running-config enable`

4.3.1.2 Configure Administrative Tools Save

running-config	- Save running configuration
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to-history	- Save configuration to history file
to-remote	- Save configuration to a remote history file

4.3.1.2.1 config admin-tools save running-configuration

SYNTAX: `config admin-tools save running-config`

DESCRIPTION: Save running configuration to permanent, non-volatile storage.

EXAMPLE: `admin-tools> save running-config`

4.3.1.2.2 config admin-tools save to-history

SYNTAX: `config admin-tools save to-history filename <filename> backupname <backupname>`

`<filename>` - Name of the file where the configuration will be stored
`<backupname>` - A name to distinguish between various backup configuration files

DESCRIPTION: Save running configuration to a history file on the unit's flash file system for use as a backup configuration file. Note the history size must be configured to be greater than 0 before a backup configuration file can be configured.

EXAMPLE: `admin-tools> save to-history filename saveit backupname 010106`

Editor's Note: This command essentially creates a zipped, tarball of all files under the /etc/np_device_config/saved directory and stores the file locally on the flash file under the /etc/np_device_config/history directory (e.g. /etc/np_device_config/history/saveit.tar.gz)

4.3.1.2.3 config admin-tools save to-remote

SYNTAX: `config admin-tools save to-remote filename <filename> remote-path <path> protocol {tftp|sftp|scp} remote-server-IP <ip-address> [User <username> password <password>]`

`<filename>` - File name to save configuration file to
`<remote-path>` - Path name of the file
`<ip-address>` - IP Address of remote tftp, sftp or scp server to store the configuration file
`<username>` - User name for remote login. This is optional for tftp servers.
`<password>` - Password for login. This is optional for tftp servers.

DESCRIPTION: Save running configuration to a history file for use as a backup configuration file.

EXAMPLE: `admin-tools> save to-remote filename Config_010106.tar.gz remote-path c:/EtherXtend/configs protocol tftp remote-server-IP 10.10.10.1`

4.3.1.3 Configure Administrative Tools Restore

factory-defaults	- Restore to factory default configuration
remote	- Restore remote configuration from tftp server
from-history	- Restore from history

4.3.1.3.1 config admin-tools restore factory-defaults

SYNTAX: `config admin-tools restore factory-defaults`

DESCRIPTION: Restore to factory default configuration.

EXAMPLE: `admin-tools> restore factory-defaults`



4.3.1.3.2 config admin-tools restore remote

SYNTAX: `config admin-tools restore remote remote-file <pathname> protocol {tftp|sftp|scp} remote-server-IP <ip-address> [User <username> password <password>]`

<remote-file> - Path and file name of the file stored on the remote server
<ip-address > - IP Address of remote tftp, sftp or scp server from which to retrieve the configuration file
<username> - User name for remote login. This is optional for tftp servers.
<password> - Password for login. This is optional for tftp servers.

DESCRIPTION: Restore running configuration from a backup configuration file stored on an external tftp/sftp/scp server. Note, if the configuration file was initially stored while running a different firmware revision, the request to restore the configuration using an incompatible configuration file will be rejected.

EXAMPLE: `admin-tools> restore remote remote-file c:/EtherXtend/configs/Config_010106.tar.gz protocol tftp remote-server-IP 10.10.10.1`

4.3.1.3.3 config admin-tools restore from-history

SYNTAX: `config admin-tools restore from-history <backupname>`

<backupname> - A name to distinguish between various backup configuration files

DESCRIPTION: Restore configuration from a backup configuration file.

EXAMPLE: `admin-tools> restore from-history 010106`

4.3.2 Configure VLAN Settings

portdefaults - Configure VLAN defaults for a port
qosconfig - Configure QOS settings for a VLAN
vlanconfig - Configure VLANs and VLAN port assignments

4.3.2.1 config vlan portdefaults

SYNTAX: `config vlan portdefaults vlanport <interface> pvid <pvid> priority <priority>`

<interface> - Specify an interface name for which the default priority is to be assigned (1-16 alpha-numeric characters).
<pvid> - Specify the default VLAN PVID (0-4095)
<priority> - Specify the default VLAN priority (0-7)

DESCRIPTION: Configure the default VLAN PVID and VLAN priority to be assigned for all untagged frames received for the specified interface

EXAMPLE: `config> vlan portdefaults vlanport eth1:1 pvid 500 priority 3`

4.3.2.2 Configure VLAN QOS Settings

set-ingress-map - Configure QOS settings for an ingress port
set-egress-map - Configure QOS settings for an egress port



The **set-egress-map** and **set-ingress-map** QOS commands allow for the configuration of the internal VLAN priority assigned to the ingress and egress ports, respectively. As traffic is received at a port, the VLAN priority in each packet is replaced with the internal ingress priority. The internal ingress priority is used to steer packets to the appropriate priority queue for the egress port.

There are four priority queues for each interface in the egress direction. The queue mapping is defined by the 802.1p standard as follows:

A packet with 802.1p priority of six or seven will go to the critical priority queue. The high priority queue is filled with packets that have an 802.1p priority of four or five. The medium priority queue is filled with packets having zero or three as their 802.1p priority, and the low priority queue is for packets with one or two as their 802.1p priority.

802.1p priority value	Internal Priority Queue
7	Critical
6	Critical
5	High
4	High
3	Medium
2	Low
1	Low
0	Medium

After the packets have been removed from the queue for transmitting out the DSL ports (Egress), the VLAN priority field can be optionally modified based upon the Egress Priority Map for that interface. This mapping is to change the value before the packet is transmitted out the DSL interface.

After the packets have been removed from the queue for transmitting out the LAN port (ingress), the VLAN priority field can be optionally modified based upon the Ingress Priority Map for that port. This mapping is to change the value before the packet is transmitted out the LAN port.

Refer to “Appendix B – VLAN Prioritization Capabilities” for more general information on VLANs and VLAN prioritization supported by the EtherXtend access device.

4.3.2.2.1 config vlan qosconfig set-ingress-map

```
SYNTAX:          config vlan qosconfig set-ingress-map vlanid <id> vlanport <interface>
                  skbpriority <skb> vlan_qos <qos>

<interface>     - Specify an interface name for which the default PVID is to be assigned (1-
                  16 alpha-numeric characters).
<id>            - Specify a VLAN PVID (0-4095) which is assigned to the specified VLAN
<skb>          - Specify the socket buffer (SKB) priority
<qos>          - Specify the Quality of Service (QOS) value (0-7)

DESCRIPTION:    Configure the QOS settings for a port such that inbound packets with the
                  specified VLAN QOS value should be queued according to the specified SKB
                  priority. The default skb-priority is 0.

EXAMPLE:        config> vlan qosconfig set-ingress-map vlanid 1 vlanport eth0 skbpriority 4
                  vlan_qos 512
```

4.3.2.2.2 config vlan qosconfig set-egress-map



SYNTAX: `config vlan qosconfig set-egress-map vlanid <id> vlanport <interface> skbpriority <skb> vlan_qos <qos>`

`<interface>` - Specify an interface name for which the default PVID is to be assigned (1-16 alpha-numeric characters).
`<id>` - Specify a VLAN PVID (0-4095) which is assigned to the specified VLAN
`<skb>` - Specify the socket buffer (SKB) priority
`<qos>` - Specify the Quality of Service (QOS) value (0-7)

DESCRIPTION: Configure the QOS settings for a port such that outbound packets with a particular skb-priority should be tagged with the particular vlan priority vlan_qos. The default vlan priority is 0.

EXAMPLE: `config> vlan qosconfig set-egress-map vlanid 1 vlanport eth0 skbpriority 4 vlan_qos 512`

4.3.2.3 Configure VLAN Port Settings

`addport` - Add a port to a VLAN
`addvlan` - Add VLAN by VLAN ID
`removeport` - Remove a port from a VLAN
`removevlan` - Remove specified VLAN

4.3.2.3.1 config vlan vlanconfig addport

SYNTAX: `config vlan vlanconfig addport interface <interface> vlanid <id> [tagged | untagged]`

`<interface>` - Specify an interface name that is to be assigned to a VLAN (1-16 alpha-numeric characters).
`<id>` - Specify a VLAN id of the VLAN which to assign the interface

DESCRIPTION: Add an interface (port) to the specified VLAN.

EXAMPLE: `config> vlan vlanconfig addport interface eth0.1 vlanid 4`

4.3.2.3.2 config vlan vlanconfig addvlan

SYNTAX: `config vlan vlanconfig addvlan vlan_name <name> vlanid <id>`

`<name>` - Specify a VLAN name for the new VLAN
`<id>` - Specify a VLAN id (1-4095) for the new VLAN

DESCRIPTION: Create a new VLAN and assign it a VLAN id.

EXAMPLE: `config> vlan vlanconfig addvlan vlan_name VLAN122 vlanid 122`

4.3.2.3.3 config vlan vlanconfig removeport

SYNTAX: `config vlan vlanconfig removeport interface <interface> vlanid <id>`

`<interface>` - Specify an interface name for which a vlan is to be removed (1-16 alpha-numeric characters).
`<id>` - Specify a VLAN id which is assigned to the specified VLAN

DESCRIPTION: Delete the specified VLAN from an interface.

EXAMPLE: `config> vlan vlanconfig removeport interface eth0.1 vlanid 4`



4.3.2.3.4 config vlan vlanconfig removevlan

SYNTAX: `config vlan vlanconfig removevlan vlanid <id>`

<id> - Specify a VLAN id which is assigned to the specified VLAN

DESCRIPTION: Delete the specified VLAN. Note that all ports assigned to a VLAN must first be removed from a VLAN before the VLAN can be removed. Execute the "config vlan vlanconfig removeport" command to remove ports assigned to a VLAN.

EXAMPLE: `config> vlan vlanconfig removevlan vlanid 4`

4.3.3 Configure Bridge and Bridge Port Settings

no - Delete bridge or bridgeport configuration setting
bridge - Bridge configuration
bridgeport - Bridge port configuration

4.3.3.1 Delete Bridge or Bridge Ports

bridge - Delete a bridge
bridgeport - Delete a port from a bridge

4.3.3.1.1 config bridge no bridge

SYNTAX: `config bridge no bridge <bridge-name>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)

DESCRIPTION: Delete the specified bridge

EXAMPLE: `bridge> no bridge br1`

4.3.3.1.2 config bridge no bridgeport

SYNTAX: `config bridge no bridgeport <if_name>`

<if_name> - Interface name (1-16 alpha-numeric characters)

DESCRIPTION: Delete the bridge port for the specified interface from the bridge

EXAMPLE: `bridge> no bridge eth1`

4.3.3.2 Configure Bridge

hello-time - Configure the hello-time interval
bridge-priority - Configure the bridge priority
stp - Enable or disable the Spanning Tree Protocol (STP)
forward-delay - Configure the forward delay
max-age - Configure the maximum time between hello frames
ageing - Configure time an entry will remain in forwarding-database (FDB)



4.3.3.2.1 config bridge bridge hello-time

SYNTAX: `config bridge bridge <bridge-name> hello-time <hello_time>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<hello_time> - Hello Time

DESCRIPTION: Configure the time, in seconds, between each bridge protocol data unit (BPDU) that is sent on a port. Periodically, a hello packet is sent out by the Root Bridge and the Designated Bridges to communicate information about the topology throughout the entire Bridged Local Area Network.

EXAMPLE: `bridge> bridge br0 hello-time 500`

4.3.3.2.2 config bridge bridge bridge-priority

SYNTAX: `config bridge bridge <bridge-name> bridge-priority <bridge-priority>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<bridge_priority> - Bridge Priority

DESCRIPTION: Configure the priority of the specified bridge. Each bridge has a relative priority and cost. Each interface is associated with a port (number) in the spanning-tree protocol (STP). Each interface has a priority and a cost that is used to decide which interface will provide the shortest path to forward a packet. If you have multiple bridges and interfaces, then you may need to adjust the priorities to achieve optimum performance.

EXAMPLE: `bridge> bridge br0 bridge-priority 1`

4.3.3.2.3 config bridge bridge stp

SYNTAX: `config bridge bridge <bridge-name> stp {yes | no}`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)

DESCRIPTION: Enable or disable the Spanning Tree Protocol for specified bridge. If you are running multiple or redundant bridges, then you need to enable the Spanning Tree Protocol (STP) to handle multiple hops and avoid cyclic routes. STP can be enabled for a bridge while adding or modifying a bridge row.

EXAMPLE: `bridge> bridge br0 stp no`

4.3.3.2.4 config bridge forward-delay

SYNTAX: `config bridge bridge <bridge-name> forward-delay <delay>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<delay> - Forward Delay

DESCRIPTION: Configure the time, in seconds, that is spent in the listening and learning state for specified bridge. Forwarding delay time is the time spent in each of the Listening and Learning states before the Forwarding state is entered. This delay is so that when a new bridge comes onto a busy network it looks at some traffic before participating.

EXAMPLE: `bridge> bridge br0 forward-delay 50`



4.3.3.2.5 config bridge max-age

SYNTAX: `config bridge bridge <bridge-name> max-age <max-age>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<max-age> - Maximum age for configuration information

DESCRIPTION: Configure the maximum amount of time, in seconds, the specified bridge port will wait for a hello packet before starting the Root Bridge takeover procedure. If another bridge in the spanning tree does not send out a hello packet for a long period of time, it is assumed to be dead.

EXAMPLE: `bridge> bridge br0 max-age 1000`

4.3.3.2.6 config bridge ageing

SYNTAX: `config bridge bridge <bridge-name> ageing <age-time>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<age_time> - Age time

DESCRIPTION: Configure the length of time, in seconds, the MAC address will be kept in the Forwarding Database (FD) after receipt of a packet from this MAC address. Failure to receive another packet from this MAC address before the time period expires will cause this entry to be deleted from the Forwarding Database.

EXAMPLE: `bridge> bridge br0 ageing 1000`

4.3.3.3 Config Bridge Bridgeport

path-cost - Configure the path cost
priority - Configure the bridge port priority

4.3.3.3.1 config bridge bridgeport path-cost

SYNTAX: `config bridge bridgeport <if-name> bridge <bridge-name> path-cost <cost>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<if-name> - Interface name (1-16 alpha-numeric characters)
<cost> - Path cost

DESCRIPTION: Configure the cost of the path from the bridge sending the configuration message to the root bridge. Each interface in a bridge could have a different speed and this value is used when deciding which link to use. Faster interfaces should have lower costs.

EXAMPLE: `bridge> bridgeport eth0 bridge br0 path-cost 10`

4.3.3.3.2 config bridge bridgeport priority

SYNTAX: `config bridge bridgeport <if-name> bridge <bridge-name> port-priority <port_priority>`

<bridge_name> - Enter Bridge Name (1-32 alpha-numeric characters)
<if-name> - Interface name (1-16 alpha-numeric characters)
<port_priority>- Port Priority



DESCRIPTION: Configure the priority of data sent/received over the specified interface for the bridge ports. Each bridge has a relative priority and cost. Each interface is associated with a port (number) in the STP code. Each has a priority and a cost that is used to decide which is the shortest path to forward a packet. The lowest cost path is always used unless the other path is down. If you have multiple bridges and interfaces then you may need to adjust the priorities to achieve optimum performance.

EXAMPLE: bridge> `bridgeport eth1 bridge br0 port-priority 1`

4.3.4 Configure System Settings

date	- Set date
time	- Set time
ntpserver	- Set Date/Time from NTP server
timezone	- Set time zone
reboot	- Reboot the device immediately
domain	- Configure domain name
host	- Configure host name
dns	- Configure name servers
auto-update-DNS	- Configure DNS auto-update
syslog	- Configure Syslog Parameters

4.3.4.1 config system date

SYNTAX: `config system date <date>`

`<date>` - Set date in mm-dd-yyyy format

DESCRIPTION: Configure the date in months-days-years for the system

EXAMPLE: config> `system date 8-20-2006`

4.3.4.2 config system time

SYNTAX: `config system time <time>`

`<time-str>` - Enter time in HH:MM:SS format

DESCRIPTION: Configure the time in hours:minutes:seconds for the system

EXAMPLE: config> `system time 11:05:00`

4.3.4.3 config system ntpserver

SYNTAX: `config system ntpserver {disable | <server_ip_address>}`

`<server>` - Enter NTP server (name or IP address)
`disable` - Disable ntpserver

DESCRIPTION: Enable or disable the acquisition of time from the specified address of an NTP Server

EXAMPLE: config> `system ntpserver 192.168.1.200`

4.3.4.4 config system dns primary

SYNTAX: `config system dns primary <pri-dns>`



<pri-dns> - Configure primary DNS server's IP address

DESCRIPTION: Configure the IP address primary Domain Name Server

EXAMPLE: config> system dns primary 192.168.1.200

4.3.4.5 config system timezone

SYNTAX: config system timezone <zone> {adjust-for-daylight-savings}

<zone>

(GMT-12:00) International Date Line West	- DateLine Standard Time
(GMT-11:00) Midway Island, Samoa	- Samoa Standard Time
(GMT-10:00) Hawaii	- Hawaiian Standard Time
(GMT-09:00) Alaska	- Alaskan Standard Time
(GMT-08:00) Pacific Time - US and Canada; Tijuana	- Pacific Standard Time
(GMT-07:00) Arizona	- US Mountain Standard Time
(GMT-07:00) Chihuahua, La Paz, Mazatlan	- Mexico Standard Time 2
(GMT-07:00) Mountain Time - US and Canada	- Mountain Standard Time
(GMT-06:00) Central America	- Central America Std Time
(GMT-06:00) Central Time - US and Canada	- Central Standard Time
(GMT-06:00) Guadalajara, Mexico City, Monterrey	- Mexico Standard Time
(GMT-06:00) Saskatchewan	- Canada Central Std Time
(GMT-05:00) Bogota, Lima, Quito	- SA Pacific Standard Time
(GMT-05:00) Eastern Time - US and Canada	- Eastern Standard Time
(GMT-05:00) Indiana (East)	- US Eastern Standard Time
(GMT-04:00) Atlantic Time - Canada	- Atlantic Standard Time
(GMT-04:00) Caracas, La Paz	- SA Western Standard Time
(GMT-04:00) Santiago	- Pacific SA Standard Time
(GMT-03:30) Newfoundland	- Newfoundland Standard Time
(GMT-03:00) Brasilia	- E.South America Std Time
(GMT-03:00) Buenos Aires, Georgetown	- SA Eastern Standard Time
(GMT-03:00) Greenland	- Greenland Standard Time
(GMT-02:00) Mid-Atlantic	- Mid-Atlantic Standard Time
(GMT-01:00) Azores	- Azores Standard Time
(GMT-01:00) Cape Verde Is.	- Cape Verde Standard Time
(GMT) Casablanca, Monrovia	- Greenwich Standard Time
(GMT) Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London	- GMT Standard Time
(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna	- W. Europe Standard Time
(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague	- Central Europe Std Time
(GMT+01:00) Brussels, Copenhagen, Madrid, Paris	- Romance Standard Time
(GMT+01:00) Sarajevo, Skopje, Warsaw, Zagreb	- Central European Std Time
(GMT+01:00) West Central Africa	- W. Central Africa Std Time
(GMT+02:00) Athens, Beirut, Istanbul, Minsk	- GTB Standard Time
(GMT+02:00) Bucharest	- E. Europe Standard Time
(GMT+02:00) Cairo	- Egypt Standard Time
(GMT+02:00) Harare, Pretoria	- South Africa Standard Time
(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius	- FLE Standard Time
(GMT+02:00) Jerusalem	- Jerusalem Standard Time
(GMT+03:00) Baghdad	- Arabic Standard Time
(GMT+03:00) Kuwait, Riyadh	- Arab Standard Time
(GMT+03:00) Moscow, St. Petersburg, Volgograd	- Russian Standard Time
(GMT+03:00) Nairobi	- E. Africa Standard Time
(GMT+03:30) Tehran	- Iran Standard Time
(GMT+04:00) Abu Dhabi, Muscat	- Arabian Standard Time
(GMT+04:00) Baku, Tbilisi, Yerevan	- Caucasus Standard Time
(GMT+04:30) Kabul	- Afghanistan Standard Time
(GMT+05:00) Ekaterinburg	- Ekaterinburg Standard Time
(GMT+05:00) Islamabad, Karachi, Tashkent	- West Asia Standard Time
(GMT+05:30) Chennai, Kolkata, Mumbai, New Delhi	- India Standard Time
(GMT+05:45) Kathmandu	- Nepal Standard Time
(GMT+06:00) Almaty, Novosibirsk	- N. Central Asia Std Time
(GMT+06:00) Astana, Dhaka	- Central Asia Standard Time
(GMT+06:00) Sri Jayawardenepura	- Sri Lanka Standard Time
(GMT+06:30) Rangoon	- Myanmar Standard Time
(GMT+07:00) Bangkok, Hanoi, Jakarta	- SE Asia Standard Time
(GMT+07:00) Krasnoyarsk	- North Asia Standard Time
(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi	- China Standard Time
(GMT+08:00) Irkutsk, Ulaan Bataar	- North Asia East Std Time
(GMT+08:00) Kuala Lumpur, Singapore	- Malay Peninsula Std Time
(GMT+08:00) Perth	- AUS Western Standard Time



(GMT+08:00) Taipei	- Taipei Standard Time
(GMT+09:00) Osaka, Sappora, Tokyo	- Tokyo Standard Time
(GMT+09:00) Seoul	- Korea Standard Time
(GMT+09:00) Yakutsk	- Yakutsk Standard Time
(GMT+09:30) Adelaide	- AUS Central Standard Time
(GMT+09:30) Darwin	- AUS Central Standard Time
(GMT+10:00) Brisbane	- AUS Eastern Standard Time
(GMT+10:00) Canberra, Melbourne, Sydney	- AUS Eastern Standard Time
(GMT+10:00) Guam, Port Moresby	- West Pacific Standard Time
(GMT+10:00) Hobart, Tasmania	- Tasmania Standard Time
(GMT+10:00) Vladivostok	- Vladivostok Standard Time
(GMT+11:00) Magadan, Solomon Is., New Caledonia	- Central Pacific Std Time
(GMT+12:00) Auckland, Wellington	- New Zealand Standard Time
(GMT+12:00) Fiji, Kamchatka, Marshall Is.	- Fiji Standard Time
(GMT+13:00) Nuku'alofa	- Tonga Standard Time
adjust-for-daylight-savings	- Adjust clock for daylight savings changes

DESCRIPTION: Configure the timezone and adjust the timezone automatically for daylight savings time.

EXAMPLE: config> system timezone GMT+01:00 adjust-for-daylight-savings

4.3.4.6 config system reboot

SYNTAX: config system reboot

DESCRIPTION: Reboot the system

EXAMPLE: config> system reboot

4.3.4.7 config system domain

SYNTAX: config system domain <domain-name>

<domain-name> - Enter domain name string (1-64 alpha-numeric characters)

DESCRIPTION: Configure the system domain name

EXAMPLE: config> system domain Largo-Lab

4.3.4.8 config system host

SYNTAX: config system host <host-name>

<host-str> - Enter host name (1-64 alpha-numeric characters)

DESCRIPTION: Configure the system host name

EXAMPLE: config> system host EtherXtend-NYC

4.3.4.9 config system latitude

SYNTAX: config system latitude <latitude>

<latitude String (-90) to (+90)> - Enter latitude, represented in degrees decimal. The format of the location's latitude is:
[+ | -]ddd.dddddd

where + indicates north
- indicates south

DESCRIPTION: Configure the latitudinal coordinate for the system.

EXAMPLE: config> system latitude -77.111



4.3.4.10 config system longitude

SYNTAX: `config system longitude <longitude>`

<longitude String (-180) to (+180)> - Enter longitude, represented in degrees decimal. The format of the location's longitude is:
[+ | -]ddd.ddddddd
where + indicates east
- indicates west

DESCRIPTION: Configure the longitudinal coordinate for the system.

EXAMPLE: `config> system longitude +128.555666`

4.3.4.11 Configure System Syslog

service	- Configure syslog service
size	- Configure syslog file size
remote-logging	- Configure remote logging
exit	- Exit from the current tree and go to parent
where	- Show the path of the current module from the root
logout	- Log out from the current Session
cli-settings	- Configure cli settings
tree	- Show all modules under the current module

4.3.4.11.1 config system syslog service

SYNTAX: `config system syslog service {enable | disable}`

DESCRIPTION: Enable or disable the logging of messages to a system log file

EXAMPLE: `config> system syslog service enable`

4.3.4.11.2 config system syslog size

SYNTAX: `config system syslog size <max_log_size> num-rotated-logs <num-logs>`

<max_log_size> - Maximum file size (KB) before rotate (1-500)
<num-logs> - Maximum number of log files (1-10)

DESCRIPTION: Configure the maximum size of the log file before entries in the file are rotated to another log file, and the maximum number of log files maintained.

EXAMPLE: `config> system syslog size 500 num-rotated-logs 5`

4.3.4.11.3 config system syslog remote-logging

SYNTAX: `config system syslog remote-logging {enable <server> [port <port> local-logging {enable | disable}]} | {disable}`

<server> - Enter remote syslog host (name or IP address)
<port> - Configure the port for which syslog messages will be sent to on the specified remote syslog server

DESCRIPTION: Enable or disable the logging of system messages to a remote syslog server

EXAMPLE: `config> system syslog remote-logging enable 192.168.1.254 port 1012 local-logging enable`



4.3.5 Configure Interface Settings

route-add - Add route
route-del - Delete route
interface-state - Set interface administrative state
interface - Interface parameter configuration

4.3.5.1 config if route-add

SYNTAX: `config if route-add destination {default gw-addr <gw-ip> [metric <metric>] } | {<dest-ip> <dest-mask> gw-addr <gw-ip> [metric <metric>] }`

<dest-ip> - Enter Destination IP Address of route destination
<dest-mask> - Enter Network Mask for route destination
<gw-ip> - Enter Gateway to reach destination
<metric> - Enter Metric (ie. cost for the destination)

DESCRIPTION: Add a default route for all destinations, or add a single route for the specified destination

EXAMPLE: `config> if route-add destination 10.10.10.10 255.255.255.0 gw-addr 10.110.10.254 metric 10`

4.3.5.2 config if route-del

SYNTAX: `config if route-del destination {default} | {<dest-ip> <dest-mask>}`

<dest-ip> - Enter Destination IP Address of route destination
<dest-mask> - Enter Network Mask for route destination

DESCRIPTION: Delete the default route for all destinations, or delete the single route for the specified destination

EXAMPLE: `config> if route-del destination 10.10.10.10 255.255.255.0`

4.3.5.3 config if interface-state

SYNTAX: `config if interface-state <if_name> {enable | disable | disableip }`

<if_name> - Interface name (1-16 alpha-numeric characters)

DESCRIPTION: Enable/disable the specified interface, or set the IP address of the specified interface to 0.0.0.0.

EXAMPLE: `config> if interface-state eth1 disable`

4.3.5.4 config if interface

SYNTAX: `config if interface <if_name> ip <ipaddr> mask <mask> broadcast <addr> [mtu <size>]`

<if_name> - Interface name (1-16 alpha-numeric characters)
<ipaddr> - Configure the IP Address for the specified interface
<mask> - Configure the subnet mask for the specified interface
<addr> - Configure the broadcast address for the specified interface
<size> - Enter maximum transfer unit, in bytes



DESCRIPTION: Configure the IP address, network mask, broadcast address and optional MTU size for the specified interface

EXAMPLE: `config> if interface brvlan7 ip 10.10.10.10 netmask 255.255.255.0 broadcast 100.100.100.100 mtu 512`

4.3.6 Configure Software Upgrade Settings

`url` - Configure the URL of the host where the software files reside
`autoUpgrade` - Configure the automatic upgrade of software

4.3.6.1 config swupgrade url

SYNTAX: `config swupgrade url <url_string>`

<url_string> - URL of the host where software upgrade files reside

DESCRIPTION: Block or unblock access to the specified host for the specified protocol.

EXAMPLE: `config> swupgrade url tftp://192.168.1.254/`

4.3.6.2 config swupgrade autoupgrade

SYNTAX: `config swupgrade autoupgrade {enable | disable } forceupgrade {enable | disable} time <time> interval <interval> url <url_string>`

<time> - Auto upgrade time string
<interval> - Auto upgrade interval
<url_string> - URL of the host where software upgrade files reside

DESCRIPTION: Enable or disable the automatic software upgrade feature. If enabled, this command will configure the access device to automatically check for software upgrades periodically from the specified file server. This command can also be used to force an upgrade even when the firmware version has not changed.

EXAMPLE: `config> swupgrade autoupgrade enable forceupgrade disable time 24:00 url tftp://www.zhone.com/`

4.3.7 Configure User Management Settings

`delete-user` - Delete an existing user account
`change-password` - Change the password for a user account
`add-user` - Add a new user account
`edit-user-info` - Modify the account settings for a user account.

4.3.7.1 config usrmgmt delete-user

SYNTAX: `config usrmgmt delete-user <username>`

<username> - User name (1-32 alpha-numeric characters)

DESCRIPTION: Delete the user name from the list of users that can access the management services of the system

EXAMPLE: `config> usrmgmt delete-user hacker`



4.3.7.2 config usrmgmt add-user

SYNTAX: `config usrmgmt add-user <username> passwd <passwd> confirm-passwd <confrmpasswd> role {su | admin | user} [usr-description <usrdesc>] [e-mail <email>] [useraddress <useraddress>]`

<username> - Enter user name (1-32 alpha-numeric characters).
<passwd> - Enter password (5-50 alpha-numeric characters).
<confrmpasswd> - Enter password (5-50 alpha-numeric characters).
<usrdesc> - Enter description for user (5-50 alpha-numeric characters). To Enter with spaces put into double quotes.
<email_addr> - Enter user email address (5-50 alpha-numeric characters). Do not use special characters other than @.
<usraddr> - Enter the user address (5-50 alpha-numeric characters). To Enter with spaces put into double quotes.

DESCRIPTION: Add the user name to the list of users that can access the management services of the system and configure the account information for the new user. Note that a user role (or access level) must be defined for the new user. The supported roles are:

su (superuser) - Users configured at this level have access to all commands.
admin (administrative) - Users configured at this level have access to all commands.
user - Users configured at this level have access to show commands, but cannot alter the configuration of the access device.

EXAMPLE: `config> usrmgmt add-user nohacker passwd abc123 confirm-passwd abc123 role su`

4.3.7.3 config usrmgmt change-password

SYNTAX: `config usrmgmt change-password <username> old-password <passwd> new-password <passwd>`

<username> - Enter user name (1-32 alpha-numeric characters).
<passwd> - Enter password (5-50 alpha-numeric characters). Press Enter after password key word to put echo off.

DESCRIPTION: Change the user password for the specified user

EXAMPLE: `config> usrmgmt change-password nohacker old-password abc123 new-password xyz123`

4.3.7.4 config usrmgmt edit-user-info

SYNTAX: `config usrmgmt edit-user-info username <username> [usr-description <usrdesc>] [email <email_addr>] [useraddress <usraddr>]`

<username> - Enter user name (1-32 alpha-numeric characters).
<usrdesc> - Enter description for user (5-50 alpha-numeric characters). To Enter with spaces put into double quotes.
<email_addr> - Enter user email address (5-50 alpha-numeric characters). Do not use special characters other than @.
<usraddr> - Enter the user address (5-50 alpha-numeric characters). To Enter with spaces put into double quotes.

DESCRIPTION: Configure the user information for the specified user

EXAMPLE: `config> usrmgmt edit-user-info username nohacker email <user@zhone.com> useraddress <"7001 Oakport Street Oakland, California">`



4.4 SHOW COMMANDS

```
admin-tools - Show administrative configuration options
vlan        - Show VLAN configuration
bridge      - Show bridge configuration
system      - System configuration
if          - Show Interface Parameters, Statistics, Status
swupgrade   - Show Software Upgrade configuration
usrmgmt     - Show User Management configuration
efm         - Show EFM configuration and statistics
alarms      - Show system alarms
```

4.4.1 Show Administrative Tools

```
settings - Show Restore-Backup settings
backup-history - Show the backup history
```

4.4.1.1 Show Administrative Tools Settings

```
history-size - Show number of history backups
tftp-server - Show TFTP server settings
always-save-runningconfig - Always save running config
```

4.4.1.1.1 Show Administrative Tools Settings History-Size

```
SYNTAX: show system history-size

DESCRIPTION: Display the history-size setting for the system.

EXAMPLE: show> admin-tools settings history-size

Max History Size - 1
```

4.4.1.1.2 Show Administrative Tools Settings Always-Save-Runningconfig

```
SYNTAX: show system settings always-save-runningconfig

DESCRIPTION: Display the setting for the "always-save-running" configuration option for the system.

EXAMPLE: show> admin-tools settings always-save-runningconfig

Always Save Running Config - disable
```

4.4.1.1.3 Show Administrative Tools Settings Backup-History

```
SYNTAX: show admin-tools backup-history

DESCRIPTION: Display the backup history files that have been stored on the local flash file system.

EXAMPLE: show> admin-tools backup-history
```

```
-----
|Name                |URL                |Backup Date      |
|-----|-----|-----|
|testit1             |history/testit_file.|12-31-2006 19:55|
|                    |tar.gz             |                  |
|-----|-----|-----|
```



4.4.2 Show VLAN Settings

- vlan - Show VLAN names and IDs
- portdefaults - Show default PVID and VLAN priority for VLAN ports
- vlanport - Show VLAN port assignments
- vlan-ingress-map - Show ingress QOS mapping
- vlan-egress-map - Show egress QOS mapping

4.4.2.1 Show VLANs

SYNTAX: `show vlan vlans [vlanid <vlan#>]`

<vlan#> - vlan ID

DESCRIPTION: Display the names and VLAN IDs for all vlans configured or for the specified vlan ID.

EXAMPLE: `show> vlan vlans`

VLAN Info Table

VLAN Name	VLAN ID
Default_Native_Vlan	0
Default_Data_Vlan	1
Default_Mgmt_Vlan	7
vlan9	9
vlan10	10
vlan2	2
vlan11	11

4.4.2.2 Show VLAN Port Defaults

SYNTAX: `show vlan portdefaults [vlanid <vlan#>]`

<vlan#> - vlan ID

DESCRIPTION: Display the default PVID and VLAN priority values for all vlans in the system or for the specified vlan.

EXAMPLE: `show> vlan portdefaults`

Default VLAN Port	Default Port PVID	Default Port Priority
eth1	0	0
eth0	1	0
eth1:0	1	0
eth1:1	1	0
eth1:2	1	0
eth1:3	1	0



4.4.2.3 Show VLAN Ports

SYNTAX: `show vlan vlanport [vlanid <vlan#>]`

<vlan#> - vlan ID

DESCRIPTION: Display the ports configured for all vlans in the system or for the specified vlan.

EXAMPLE: `show> vlan vlanport`

VLAN Port Table

VLAN ID	Port Name	Tagging
2	eth0	tagged
7	eth1	untagged
7	eth0	tagged
9	eth0	tagged
10	eth0	tagged
2	eth1:0	untagged
2	eth1:1	untagged
3	eth1:2	untagged
3	eth1:3	untagged

4.4.2.4 Show VLAN Ingress Map

SYNTAX: `show vlan vlan-ingress-map [vlanid <vlan#>] [vlanport <port>]`

<vlan#> - vlan ID

<port> - interface name

DESCRIPTION: Display the mapping of 802.1Q priority to SKB priority on the vlan ingress side for the specified vlan or vlan port or for all vlans in the system.

EXAMPLE: `show> vlan vlan-ingress-map vlanid 10`

VLAN ID	VLAN Port	VLAN 802.1q priority	VLAN SKB Priority
10	eth0	0	0
10	eth0	1	1
10	eth0	2	2
10	eth0	3	3
10	eth0	4	4
10	eth0	5	5
10	eth0	6	6
10	eth0	7	7



4.4.2.5 Show VLAN Egress Map

SYNTAX: `show vlan vlan-egress-map [vlanid <vlan#>] [vlanport <port>]`

<vlan#> - vlan ID
<port> - interface name

DESCRIPTION: Display the mapping of 802.1Q priority to SKB priority on the vlan egress side for the specified vlan or vlan port or for all vlans in the system.

EXAMPLE: `show> vlan vlan-egress-map vlanport eth1`

VLAN ID	VLAN Port	VLAN 802.1q priority	VLAN SKB Priority
2	eth1	0	0
2	eth1	1	1
2	eth1	2	2
2	eth1	3	3
2	eth1	4	4
2	eth1	5	5
2	eth1	6	6
2	eth1	7	7

4.4.3 Show Bridge Settings

bridge - Show bridge configuration
bridgeport - Show bridge port configuration
bridgefdb - List Forwarding Database entries

4.4.3.1 Show Bridge Configuration

SYNTAX: `show bridge bridge [<bridge_name>]`

<bridge_name> - bridge name

DESCRIPTION: Display the bridge settings for the specified bridge or for all bridge interfaces in the system.

EXAMPLE: `show> bridge bridge brvlan1`

Bridge Details

Bridge Name - brvlan1
Hardware Address - 00:19:15:06:bb:98
Bridge Priority - 10
Stp status - no
Ageing time - 298
Stp Forwarding delay - 0
Stp Hello Time - 19
Stp Max age - 0

4.4.3.2 Show Bridge Port

SYNTAX: `show bridge bridgeport [<bridge_name>]`



<bridge_name> - bridge name

DESCRIPTION: Display the bridge port configuration for the specified bridge or for all bridge interfaces in the system.

EXAMPLE: show> bridge bridgeport

Bridge Port Details

Parent Bridge	Port Name	Port Priority	Port State	Path Cost	Designated Root id	Designated Bridge id	Designated Port
brvlan1	eth0.1	0	forwarding	19	000a.00191506bb98	000a.00191506bb98	32769
brvlan7	eth1.7	0	forwarding	19	000a.0039e0ffff39	000a.0039e0ffff39	32769
brvlan7	eth0.7	0	forwarding	19	000a.0039e0ffff39	000a.0039e0ffff39	32770
brvlan9	eth0.9	0	forwarding	19	000a.00191506bb98	000a.00191506bb98	32769
brvlan10	eth0.10	0	forwarding	19	000a.00191506bb98	000a.00191506bb98	32769
brvlan2	eth0.2	0	forwarding	19	000a.00191506bb98	000a.00191506bb98	32769
brvlan2	eth1.2	0	forwarding	19	000a.00191506bb98	000a.00191506bb98	32770

4.4.3.3 Show Bridge FDB

SYNTAX: show bridge fdb [bridge_name <bridge_name>]

<bridge_name> - bridge name
<port#> - bridge port number

DESCRIPTION: Display the bridge forwarding database table for the specified bridge or bridge port number, or for all bridge interfaces in the system.

EXAMPLE: show> bridge bridgefdb bridge-name brvlan2

FDB table

Bridge Name	Port No	Port mac address	Is Local	Ageing timer
brvlan2	3	00:19:15:06:bb:98	yes	0
brvlan2	0	00:00:00:00:00:00	no	10520
brvlan2	0	00:00:06:8e:00:00	no	0
brvlan2	1	00:10:4b:87:35:05	no	114
brvlan2	0	00:00:00:00:00:00	no	37931

4.4.4 Show System Settings

- general-info - Show general system information and settings
- model-info - Show model information
- board-info - Show circuit board information
- pld-info - Show circuit board PLD information
- timezone - Show Time Zone (TZ)
- ntpserver - Show ntpserver
- service-status - Show status of various services
- autoupdate-DNS-status - Autoupdate DNS from DHCP status



4.4.4.1 show system general-info

SYNTAX: `show system general-info`

DESCRIPTION: Display the general information for the system.

EXAMPLE: `show> system general-info`

```
Firmware version      - 1.1.3
Serial number         - HGT8W
Host name             - Central-Park
Domain name           - EtherXtendDomain
Primary DNS           - 192.168.1.213
Secondary DNS         - 0.0.0.0
Date                  - 05-14-2007
Time                  - 15:21:55
Uptime                - 29 days, 47 min
```

4.4.4.2 show system model-info

SYNTAX: `show system model-info`

DESCRIPTION: Display the model information for the system.

EXAMPLE: `show> system model-info`

```
Model Number          - ETHX-3014
Power Supply Type     - dc
Base MAC Address      - 00:e0:39:ff:ff:39
Number of MAC Addresses - 2
```

4.4.4.3 show system board-info

SYNTAX: `show system board-info`

DESCRIPTION: Display the board information for the system.

EXAMPLE: `show> system board-info`

```
Board ID              - 0
Board Name            - Main
Board Part Number     - 860-54678-20
Board Serial Number   - GVN032
Board Revision        - 01
```

4.4.4.4 show system pld-info

SYNTAX: `show system pld-info`

DESCRIPTION: Display the PLD information for the system.

EXAMPLE: `show> system pld-info`

```
PLD ID                - 0
PLD Name              - Main
PLD Revision          - 0.2
```



4.4.4.5 show system timezone

SYNTAX: `show system timezone`

DESCRIPTION: Display the timezone information for the system.

EXAMPLE: `show> system timezone`

```
Time Zone           - (GMT-05:00) Eastern Time - US and Canada
Daylight Saving     - enable
```

4.4.4.6 show system ntpserver

SYNTAX: `show system ntpserver`

DESCRIPTION: Display the ntpserver information for the system.

EXAMPLE: `show> system ntpserver`

```
NTP Server Status   - enable
NTP Server          - 172.16.23.5
```

4.4.4.7 show system DNS autoupdate status

SYNTAX: `show system autoupdate-DNS-status`

DESCRIPTION: Display the autoupdate-DNS-status information for the system.

EXAMPLE: `show> autoupdate-DNS-status`

```
autoupdate DNS status - enable
```

4.4.4.8 show system timezone

SYNTAX: `show system timezone`

DESCRIPTION: Display the timezone information for the system.

EXAMPLE: `show> system timezone`

4.4.4.9 Show System Syslog Settings

```
system-log          - Show syslog messages
remote-logging     - Show remote logging details
settings           - Show Syslog settings
```

4.4.4.9.1 show system syslog system-log

SYNTAX: `show system syslog system-log`

DESCRIPTION: Display the system log settings for the system.

EXAMPLE: `show> system syslog system-log`

```
Jan 1 00:00:00 (none) syslog.info System log daemon exiting.
Jan 1 00:00:00 (none) syslog.info syslogd started: BusyBox v1.00
(2007.05.13-15:12+0000)
Jan 1 00:00:01 (none) syslog.info System log daemon exiting.
Jan 1 00:00:01 Central-Park syslog.info syslogd started: BusyBox v1.00
(2007.05.13-15:12+0000)
```



```
Jan 1 00:00:01 Central-Park syslog.info System log daemon exiting.
Jan 1 00:00:01 Central-Park syslog.info syslogd started: BusyBox v1.00
(2007.05.13-15:12+0000)
Jan 1 00:00:01 Central-Park syslog.info System log daemon exiting.
Jan 1 00:00:01 Central-Park syslog.info syslogd started: BusyBox v1.00
(2007.05.13-15:12+0000)
Jan 1 00:00:01 Central-Park syslog.info System log daemon exiting.
Jan 1 00:00:01 Central-Park syslog.info syslogd started: BusyBox v1.00
(2007.05.13-15:12+0000)Jan 1 00:00:01 Central-Park syslog.info System log
daemon exiting.
Jan 1 00:00:01 Central-Park syslog.info syslogd started: BusyBox v1.00
(2007.05.13-15:12+0000)
Jan 1 00:02:58 Central-Park kern.info passwd[4870]: password for `admin'
changed by user `root'
```

4.4.4.9.2 show system syslog remote-logging

SYNTAX: `show system syslog remote-logging`

DESCRIPTION: Display the system log settings for the logging events to a remote Syslog server.

EXAMPLE: `show> system syslog remote-logging`

```
Remote Syslog Server      - 192.168.1.200
Remote Logging            - enable
Local Logging              - enable
Remote Syslog Server Port - 514
```

4.4.4.9.3 show system syslog settings

SYNTAX: `show system syslog settings`

DESCRIPTION: Display the system log settings for the system.

EXAMPLE: `show> system syslog settings`

```
Size (KB)                  - 100
Num of rotated logs        - 2
Syslog                      - enable
```

4.4.5 Show Interface Settings

interface - Interface parameters
interface-stats - Interface Statistics
route - Show routes

4.4.5.1 show if interface

SYNTAX: `show if interface <if_name>`

<if_name> - interface name (1-16 alpha-numeric characters)

DESCRIPTION: Display the interface settings for the specified interface or for all interfaces in the system.

EXAMPLE: `show> if interface brvlan7`

```
Total Interfaces: 1

IfName      - brvlan7
IfAlias      - Bridge / VLAN 7
Type        - ethernet
HWAddress    - 00:39:e0:ff:ff:34
```




```
IpAddress          - 192.168.1.1
Netmask            - 255.255.255.0
BroadcastAddr      - 192.168.1.255
MTU                - 1500
RemoteAddr         - 192.168.1.1
OpStatus           - enable
Scope             - lan
BridgeScope        - bridge
```

4.4.5.2 show if interface statistics

SYNTAX: `show if interface-stats <if_name>`

`<if_name>` - interface name (1-16 alpha-numeric characters)

DESCRIPTION: Display the interface statistics for the specified interface or for all interfaces in the system.

EXAMPLE: `show> if interface-stats eth1.7`

```
Total Interfaces: 1

Interface Name      - eth1.7
Rx Packets          - 11479
Rx Errors           - 0
Rx Dropped          - 0
Rx Overruns         - 0
Rx Bytes            - 13179412
Tx Packets          - 9536
Tx Errors           - 0
Tx Dropped          - 0
Tx Overruns         - 0
Tx Bytes            - 2368096
```

4.4.5.3 show if route

SYNTAX: `show if route [destination default | <ip_address>]`

`<ip_address>` - destination ip address

DESCRIPTION: Display the entire routing table or the routing table entry for the specified destination.

EXAMPLE: `show> if route`

```
Total Routes: 4

Destination Addr    - 10.108.14.0
Destination Mask    - 255.255.255.0
Gateway Addr        - 0.0.0.0
Metric              - 0

Destination Addr    - 192.168.1.0
Destination Mask    - 255.255.255.0
Gateway Addr        - 0.0.0.0
Metric              - 0

Destination Addr    - 10.108.1.0
Destination Mask    - 255.255.255.0
Gateway Addr        - 0.0.0.0
Metric              - 0

Destination Addr    - 0.0.0.0
Destination Mask    - 0.0.0.0
Gateway Addr        - 10.108.14.254
Metric              - 0
```



4.4.6 Show Software Upgrade Settings and Status

```
history          - Show software upgrade history
auto-upgrade-details - Show auto-upgrade parameters
image_info      - Show information about the current and backup images
```

4.4.6.1 show upgrade history

SYNTAX: `show upgrade history`

DESCRIPTION: Display the history of all software upgrade file transfers since the last system reboot.

EXAMPLE: `show> swupgrade history`

```
-----
| Sequ|Date Time |Status      |Message
|ence|          |            |
| Num |          |            |
|----|-----|-----|-----
| NULL|NULL      | NULL      | NULL
-----
```

4.4.6.2 show upgrade auto-upgrade-details

SYNTAX: `show upgrade auto-upgrade-details`

DESCRIPTION: Display the history of all software upgrade file transfers since the last system reboot.

EXAMPLE: `show> swupgrade auto-upgrade-details`

```
enableAuto      - disable
upgradeUrl      - file:///tmp/swupgrade.img
upgradeTime     - 00:00:00
upgradeInterval - 7
enableForce     - enable
```

4.4.7 Show User Management Settings

```
show-user-info - Show all information for specified user
show-all-user-info - Shows information for all users
roles          - Show all user roles
```

4.4.7.1 show usrmgmt show-user-info

SYNTAX: `show usrmgmt show-user-info [user-name <name>]`

<name> - user name (1-32 alpha-numeric characters)

DESCRIPTION: Display the user account settings for the specified user.

EXAMPLE: `show> usrmgmt show-user-info user-name admin`

```
Name          - admin
Description   - Default administrative account
Address       - Undefined
E-mail Address - Undefined
Role          - su
```



4.4.7.2 show usrmgmt show-all-user-info

SYNTAX: `show usrmgmt show-all-user-info`
DESCRIPTION: Display the user account settings for all users configured.
EXAMPLE: `show> usrmgmt show-all-user-info`

```
Name          - admin
Description   - Default administrative account
Address       - Undefined
Email         - Undefined
Role          - su

Name          - hacker
Description   - Known hacker (aka John Smith)
Address       - 123 Elm St.
Email         - hacker@zhone.com
Role          - user
```

4.4.7.3 show usrmgmt roles

SYNTAX: `show usrmgmt roles`
DESCRIPTION: Display the user account roles supported by the system.
EXAMPLE: `show> usrmgmt roles`

```
-----
|User Roles      |
|-----|
|su              |
|.....|
|admin           |
|.....|
|user            |
|-----|
```

4.4.8 Show EFM

shdsl-group-status - Display the EFM SHDSL group status
shdsl-line-config - Display the EFM SHDSL line configuration
shdsl-line-status - Display the EFM SHDSL line status

4.4.8.1 show efm shdsl-group-status

SYNTAX: `show efm shdsl-group-status`
DESCRIPTION: Display the EFM Copper 2BASE-TL group and statistics information
EXAMPLE: `show> efm sdsl-group-status`

```
Fault Status Bits      - noPeer,lowRate
Port Side              - subscriber
Number of SHDSL Lines  - 4
Aggregate In Errors    - 0
Aggregate In Small Fragments - 12
Aggregate In Large Fragments - 20
Aggregate In Bad Fragments - 0
Aggregate In Lost Fragments - 5
Aggregate In Lost Starts - 0
Aggregate In Lost Ends - 0
Aggregate In Overflows - 0
```



4.4.8.2 show efm shdsl-line-config

SYNTAX: `show efm shdsl-line-config`

DESCRIPTION: Display the EFM Copper 2BASE-TL SHDSL line configuration settings

EXAMPLE: `show> efm shdsl-line-config`

```
Port Number - 1
Group Remote Discovery Code - 0e:39:a7:28:63:c4
Line Administrative Sub-type - ieee2BaseTLR
Line Attenuation Threshold (dB) - (-)10
Line SNR Margin Threshold (dB) - 50
Line Attenuation Crossing Enabled - false
Line SNR Margin Crossing Enabled - true
Line Fault Enabled - false
Line Config Initialization Failure Enabled - false
Line Protocol Initialization Failure Enabled - false

Port Number - 2
Group Remote Discovery Code - 0e:39:a7:28:63:c5
Line Administrative Sub-type - ieee2BaseTLR
Line Attenuation Threshold (dB) - 20
Line SNR Margin Threshold (dB) - 20
Line Attenuation Crossing Enabled - false
Line SNR Margin Crossing Enabled - true
Line Fault Enabled - false
Line Config Initialization Failure Enabled - false
Line Protocol Initialization Failure Enabled - false
```

4.4.8.3 show efm shdsl-line-status

SYNTAX: `show efm shdsl-line-status`

DESCRIPTION: Display the EFM Copper 2BASE-TL SHDSL port status and statistics information

EXAMPLE: `show> efm shdsl-line-status`

```
Port Number - 1
Line Operational Status - up
Line Port Rate (kbps) - 1540
Current/Last Link Fault Status - snrMgnDefect
Line Operational Sub-type - ieee2BaseTLR
Current Line SNR Margin (dB) - 30
Current Line Attenuation (dB) - 40
Line TC Coding Errors - 0
Line TC CRC Errors - 0

Port Number - 2
Line Operational Status - downReady
Line Port Rate (kbps) - 0
Current/Last Link Fault Status - noFault
Line Operational Sub-type - ieee2BaseTLR
Current Line SNR Margin (dB) - 0
Current Line Attenuation (dB) - 0
Line TC Coding Errors - 0
Line TC CRC Errors - 0
```

4.4.9 Show Alarms

SYNTAX: `show alarms all`

DESCRIPTION: Display all alarms for the system.



```
EXAMPLE:      show> alarms  
  
Interface     - eth0  
Severity      - major  
Description   - interfaceDown
```



5 APPENDIX A – QUICK START GUIDE

Initial installation of an EtherXtend device may require changes to the default configuration settings in order to access your EtherXtend device from within your network. Complete installation instructions can be found in the EtherXtend Installation Guide at www.zhone.com/support/manuals.

Below are a sample set of CLI commands necessary to configure a custom management connection to your EtherXtend device. Once the management connection is established, data-path connections can be configured.

Note that you must be connected to the local COM port on your EtherXtend device port to execute the CLI commands necessary to create a custom management connection.

5.1 CREATING A CUSTOM MANAGEMENT CONNECTION

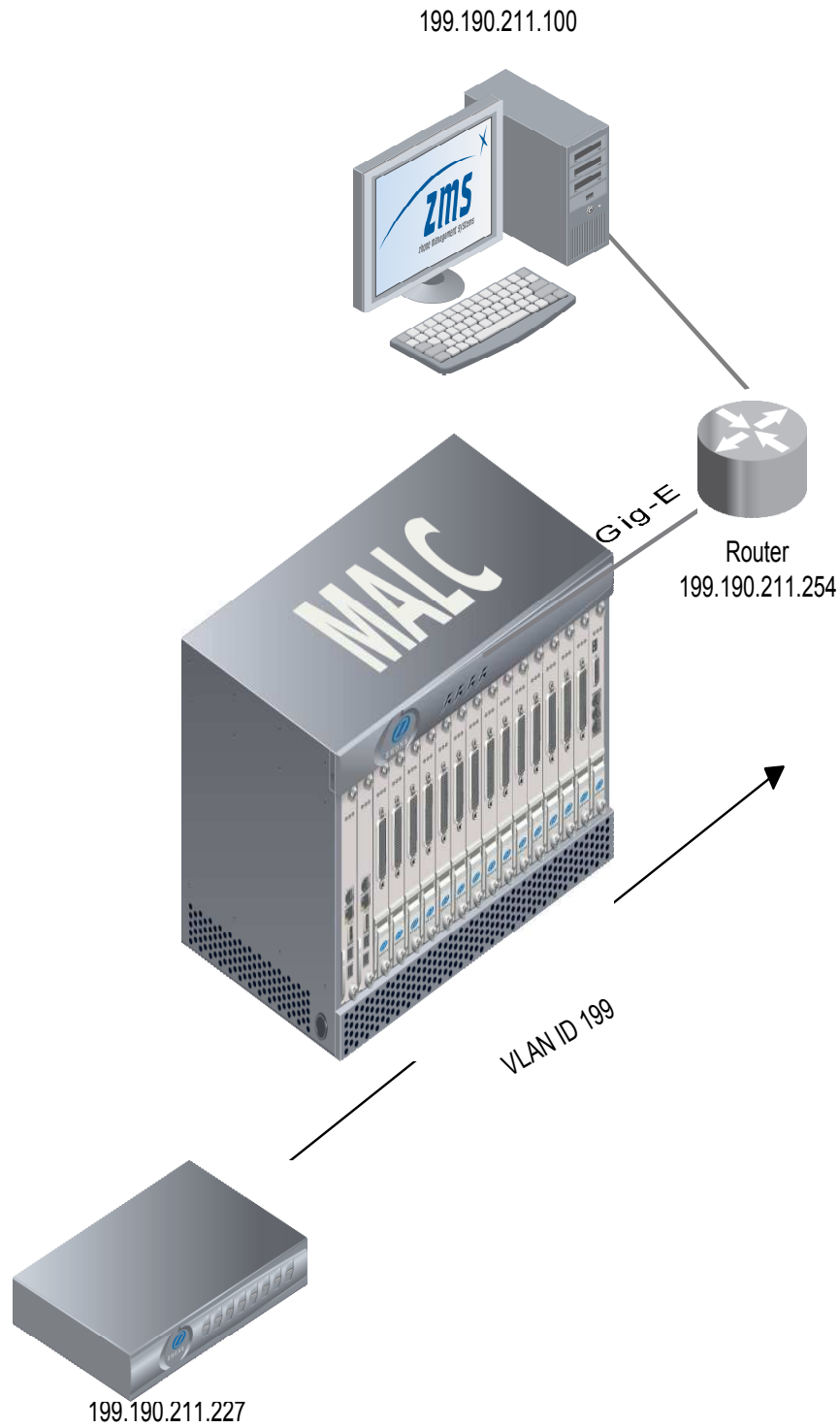
In the diagram below, a management connection between the ZMS system (IP Address = 199.190.211.15) and the EtherXtend device (IP Address = 199.190.211.227) must be created in order to manage the EtherXtend device. Below are the CLI commands required to create this management connection.

Step 1: Create a Tagged Management VLAN (brvlan199) with VLAN ID = 199

```
config vlan vlanconfig addvlan vlan_name brvlan199 vlanid 199
```

Step 2: Add the EFM SHDSL Interface (eth0) as a Member of the new Management VLAN

```
config vlan vlanconfig addport interface eth0 vlanid 199 tagged
```





Step 3: Assign an IP Address to the new Management VLAN

```
config if interface brvlan199 ip 199.190.211.227 mask 255.255.255.0 broadcast  
199.190.211.255
```

Step 4: Configure the default destination gateway

```
route-add destination default gw-addr 199.190.211.254
```

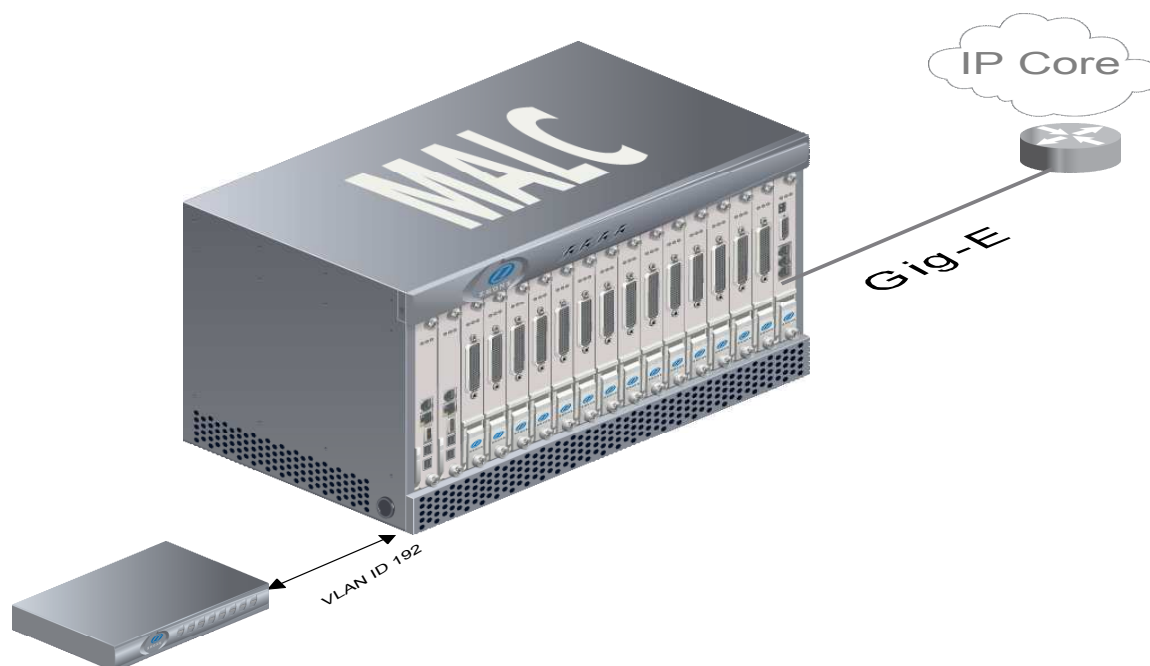
Step 5: Save the configuration so the Management Connection is automatically re-established following a power-cycle.

```
config admin-tools save running-config
```




5.2 CREATING A CUSTOM DATA CONNECTION

In the diagram below, a data connection for all ethernet traffic over the SHDSL EFM interface must be created over VLAN ID 192. Below are the CLI commands required to create this data connection.



Step 1: Create a Tagged User-Data VLAN (brvlan192) with VLAN ID = 192

```
config vlan vlanconfig addvlan vlan_name brvlan192 vlanid 192
```

Step 2: Add the EFM SHDSL Interface (eth0) as a Member of the new User-Data VLAN

```
config vlan vlanconfig addport interface eth0 vlanid 192 tagged
```

Step 3: Add Ethernet Port Interface(s) as a Member of the new User-Data VLAN

```
config vlan vlanconfig addport interface eth1:1 vlanid 192 tagged  
config vlan vlanconfig addport interface eth1:2 vlanid 192 tagged
```

Step 4: Save the configuration so the Data Connection is automatically re-established following a power-cycle.

```
config admin-tools save running-config
```



6 APPENDIX B – VLAN PRIORITIZATION CAPABILITIES

The EtherXtend ETHX-30x4 series of products support four Ethernet ports.

Each Ethernet port can be configured to apply a VLAN ID and a VLAN Priority to incoming untagged traffic. The VLAN ID and/or the VLAN Priority can be configured independently for each port. For example, if one port is connected to a VoIP IAD, that traffic could be tagged by the EtherXtend access device with a higher priority level than the untagged traffic received on the remaining 3 Ethernet ports.

Each Ethernet port can also be configured to allow tagged traffic to pass through unaffected. This allows the customer to provision multiple VLANs end to end through the network and pass them through a single port on the EtherXtend device. If the EtherXtend device is not provisioned properly, data will not pass through. The end user must specify which VLANs are to be used and the Service Provider must configure the EtherXtend device to allow those VLANs to pass through the device.

There are four priority levels supported by the EtherXtend device. In the upstream direction, strict priority queuing is used at the SHDSL EFM egress point to ensure the highest priority traffic is transmitted ahead of the lower priority traffic. In the downstream direction, tagging, prioritization, and queuing occur in the DSLAM. Once the frames arrive on the SHDSL EFM link to the EtherXtend device, they will be forwarded to the correct Ethernet egress port. The VLAN ID and VLAN Priority will be removed for the VLAN that is provisioned as an untagged member of that port, while all VLANs that are configured as tagged members of that Ethernet port will pass through unmodified.