XorPlus CLI User Guide and Reference Manual

Organization: Pica8

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Update: The latest working documents may be accessed individually online at XorPlus, or from the `docs` directory of the XorPlus distribution.

Dedication

For XorPlus CLI users and developers.

Table of Contents

1 Introduction

1.1 Overview

1.2 Intended Audience

This guide is intended for use by data center administrators, system administrators and customer support personnel responsible for monitoring or configuring the XorPlus Ethernet Switch via the command line interface. It assumes a basic familiarity with the following:

- Network administration
- Establishing and using a Telnet session
- Using a command line interface

1.3 Accessing the CLI

The CLI is accessed via: * Serial interface connected directly from a PC to the serial port of the switch * Telnet session * Secure Shell (SSH) session

The followings are the default settings of these interfaces. * Serial: initialized baud-rate 9600, 8 bit, no parity, and no flow control. By default the serial port is turned on. * Telnet: initialized to 192.168.0.2 port

23. By default the Telnet service is turned off. * SSH: initialized to 192.168.0.2 port 22. By default the SSH service is turned on.

1.3.1 Document Conventions

The following typographical conventions are used in command descriptions:

Table 1: Document Conventions

Convention	Use
bold type	keywords, to be typed verbatim
italic type	arguments for which the user must supply a value (the argument gives the name, range, or format of the information to be supplied by the operator; see Arguments below)
{ }	logical groupings
[ ]	optional arguments or keywords
|	separator for mutually exclusive options
<>	required arguments

1.4 CLI Command Structure

The CLI accepts two types of commands: asynchronous line-edit commands for navigating and editing input into the CLI and mode-based commands for monitoring and configuring the EFX 1000 Ethernet Switch. This section describes both types of commands and how they are organized and accessed.

1.4.1 Line-Edit Commands

Common line-editing and navigation commands are available for the user's convenience. The list is shown below, and can also be accessed through the CLI by using the help command.

Table 2: Line-Edit Commands

Key Combination	Action
<TAB>, <SPACE>	command-line completion
Exit	go to next lower command prompt
?	list choices

1.4.2 Mode-Based and Level-Based Structure

The XorPlus Ethernet Switch CLI command tree groups commands in modes which is default mode and configuration mode. Because the CLI is divided into two modes, the commands in one mode are not available until the operator switches to that mode.

The commands available to the operator at any point in time depend upon the mode. Entering a question mark (?) at the CLI prompt displays a list of the commands available at any point and provides brief descriptions of the commands.

Table 3: Mode Summary

Mode Name	Prompt	Description	Access	Exit
Default Mode	>	Basic show commands for viewing system information.	Log on to switch or use exit command from Enable Mode.	logout: ends session

Config Mode	#	Configuration commands for the switch.	Use config command in default Mode or exit command in the other configuration modes.	exit/end: returns to default Mode

1.5 Command Syntax

1.5.1 Order

Option tokens, arguments and other elements within a typed command must be entered in a specific order. The order is shown in the syntax section of each command description in this guide, but is also revealed one element at a time by typing '?' after entering a partial command in the CLI.

1.5.2 Arguments

- Arguments for which the operator must supply a value are displayed in this document in italic type; they must be replaced with a name or number.
- The information in brackets gives the name, range, or format of the information to be supplied by the operator.
- To use spaces as part of a name argument, enclose it in double quotes. For example, the expression "System Name with Spaces" forces the system to accept the spaces.
- Angle brackets < > indicate a mandatory parameter for which a value must be entered in place of the brackets and the text inside them.
- Square brackets [ ] indicate an optional parameter for which a value may be entered in place of the brackets and the text inside them.
- Vertical bars | separate alternative, mutually exclusive elements.
- Curly braces { } indicate that an element must be chosen from the list of choices.

1.5.3 Special Argument Types

- <1-4094>: takes an integer in the range specified.
- p_address: takes a valid IP address in the following format: a.b.c.d (e.g., 172.16.0.114)
- ac_address: takes a valid MAC address represented as six hexadecimal numbers separated by colons (e.g., 00:1A:F6:00:03:61)
- nit/slot/port: is used to identify a port - physical port on one oft the cards in the chassis (e.g., 1/1/2)
- hh:mm:ss>: takes a time value with two digits each for hours, minutes and seconds, separated by colons.

1.5.4 "delete" Form of Commands

The token **delete** can be used to reverse the action of many of the configuration commands in the CLI (the commands in the Config modes and in File Mode). The "delete" form generally reverses the action of a command or resets a parameter to its default value; in the case of configuration commands that enable something by default, the "delete" form disables (and vice versa).

1.5.5 Command Completion

The CLI can parse a command when enough letters have been typed to uniquely identify the command keyword. The command may then be executed by typing <enter>, or the command word may be completed by typing <tab> or <space bar>.

2 Operational Mode

2.1 Overview

The Default Mode provides basic show commands for viewing system information and simple network commands (ping, traceroute,).

2.1.1 Access

This mode is accessed by logging on to the switch, or by using the exit command in Config Mode.

2.1.2 Exit

To exit from this mode, use the logout command to end the CLI session.

2.2 Commands

clear	Clear information in the system
cls	Clear the terminal screen
configure	Switch to configuration mode
exit	Exit this command session
file	Perform file operations
help	Provide help with commands
ping	Ping remote target
quit	Quit this command session
request	Make system-level requests
set	Set parameters of the system
show	Show system information
ssh	Start secure shell on another host
start	Start shell
syslog	System logging
telnet	Telnet to another host
traceroute	Trace route to remote host

2.2.1 clear command

arp	Clear address resolution information
ethernet-switching	Clear ethernet switching information
interface	Clear interface information
ipv6-neighbors	Clear neighbor information for IPv6
lacp	Clear lacp information
lldp	Clear lldp information
log	Clear contents of log file
ospf4	Clear ospf information

spanning-tree	Clear Spanning-tree Protocol information

2.2.1.1 clear arp

Syntax	clear arp
Hierarchy Level	[operational]
Release Information	
Description	Clear the system arp entries.
Default	
Options	
Related Topics	

Example:

```
XorPlus> show arp
Address       HW Address          HW Type        Interface
------------ -----------------    --------       ---------
10.10.50.232 00:1E:C9:38:60:32    ether          eth0
10.10.50.183 00:1E:C9:4F:18:2F    ether          eth0

XorPlus> clear arp

XorPlus> show arp
Address       HW Address          HW Type        Interface
------------ -----------------    --------       ---------
```

2.2.1.2 clear ethernet-switching table

Syntax	clear ethernet-switching table < if-name | all>
Hierarchy Level	[operational]
Release Information	
Description	Clear the system dynamic fdb entries in the FDB table.
Default	
Options	If-name - Clear the specified interface's FDB entries all - Clear all FDB entries
Related Topics	

Example:

```
XorPlus> show ethernet-switching table
Total entries in switching table:   5
Static entries in switching table:  0
Dynamic entries in switching table: 5
VLAN    MAC address          Type     Age    Interfaces
----    ----------------     -------  ----   ----------
1       00:22:be:96:f2:87    Dynamic  300    ge-1/1/6
1       00:22:be:96:f2:8d    Dynamic  300    ge-1/1/13
1       00:22:be:96:f2:8e    Dynamic  300    ge-1/1/14
1       00:22:be:96:f5:8c    Dynamic  300    ge-1/1/6
```

```
XorPlus> clear ethernet-switching table all

XorPlus> show ethernet-switching table
Total entries in switching table:   0
Static entries in switching table:  0
Dynamic entries in switching table: 0
VLAN    MAC address          Type     Age    Interfaces
----    -----------------    -------  ----   ----------
```

2.2.1.3 clear interface statistics

Syntax	clear interface statistics < if-name | all >
Hierarchy Level	[operational]
Release Information	
Description	Clear the interface statistic of the system.
Default	
Options	if-name -Clear the statistics of the specified interface all - Clear all interfaces' statistics
Related Topics	

Example:

```
XorPlus>show interface gigabit-ethernet ge-1/1/1
Physical interface: ge-1/1/1, Disabled, Physical link is Up
Interface index: 1
Link-level type: Ethernet, MTU: 1514, Speed: 100Mb/s, Duplex: Full
Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled
Interface flags: Hardware-Down SNMP-Traps Internal: 0x0
CoS queues: 6 supported, 6 maximum usable queues
Current address: 00:c0:9f:01:02:03, Hardware address: 00:c0:9f:01:02:03
  Traffic statistics:
  Input Packets.............................0
  Output Packets............................39621
  Input Octets..............................0
  Output Octets............................15179730

XorPlus>clear interfaces interface statistics all

XorPlus>
```

2.2.1.4 clear ipv6-neighbors

Syntax	clear ipv6-neighbors [<IPv6>]
Hierarchy Level	[operational]
Release Information	
Description	Clear neighbor information for IPv6
Default	
Options	<IPv6> IPv6 address to clear

Related Topics	

Example:

```
XorPlus> clear ipv6-neighbors
XorPlus>
```

2.2.1.5 clear lacp statistics gigabit-ethernet

Syntax	clear lacp statistics gigabit-ethernet [if-name]
Hierarchy Level	[operational]
Release Information	
Description	Clear the LACP packets statistics of the system
Default	
Options	if-name -Clear the specified interface's LACP statistics
Related Topics	

Example:

```
XorPlus> clearlacp statistics gigabit-ethernet
All the statistics of the LACP packet will be cleared.
```

2.2.1.6 clear lldp entry

Syntax	clear lldp entry [if-name]
Hierarchy Level	[operational]
Release Information	
Description	Clear the LLDP neighbor entries in the system
Default	
Options	if-name - Clear the specified interface's LLDP entries
Related Topics	

Example:

```
XorPlus> show lldp neighbor ge-1/1/13
LLDP Remote Devices Information
LocalPort   ChassisId          PortId    Management Address
----------  -----------------  -------   ------------------
ge-1/1/1    00:22:BE:96:F2:8D  Gi0/13    10.10.50.32

XorPlus> clear lldp entry

XorPlus> show lldp neighbor ge-1/1/13
LLDP Remote Devices Information
LocalPort   ChassisId          PortId    Management Address
----------  -----------------  -------   ------------------
ge-1/1/1    N/A                          N/A
```

2.2.1.7 clear lldp statistics

Syntax	clear lldp statistics [if-name]
Hierarchy Level	[operational]
Release Information	
Description	Clear the LLDP packets statistics of the system
Default	
Options	if-name -Clear the specified interface's LLDP statistics
Related Topics	

Example:

```
XorPlus>show lldp statistics ge-1/1/1
Interface  Rec   Trans  Unknown-TLVs  With-Errors  Discarded
---------  ----  -----  ------------  -----------  ---------
ge-1/1/1    0    139    0             0             0

XorPlus>clear lldp statistics

XorPlus>show lldp statistics ge-1/1/1
Interface  Rec   Trans  Unknown-TLVs  With-Errors  Discarded
---------  ----  -----  ------------  -----------  ---------
ge-1/1/1    0    0      0             0             0
```

2.2.1.8 clear log

Syntax	clear log [<filename>|all]
Hierarchy Level	[operational]
Release Information	
Description	Clear contents of log file
Default	
Options	<filename> is the log file name to be cleared
Related Topics	

Example:

```
XorPlus> clear log all
XorPlus>
```

2.2.1.9 clear ospf4 database

Syntax	clear ospf4 database
Hierarchy Level	[operational]
Release Information	
Description	Clear LSA database
Default	
Options	

Related Topics	

Example:

```
XorPlus> clear ospf4 database
XorPlus>
```

2.2.1.10 clear snmp statistics

Syntax	clear snmp statistics
Hierarchy Level	[operational]
Release Information	
Description	Clear the SNMP packets statistics of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show snmp statistics
SNMP statistics:
Input:
Packets: 18, Bad versions: 0, Bad community names: 0,
Bad community uses: 0, ASN parse errors: 0,
Too bigs: 0, No such names: 0, Bad values: 0,
Read onlys: 0, General errors: 0,
Total request varbinds: 0, Total set varbinds: 0,
Get requests: 0, Get nexts: 0, Set requests: 0,
Get responses: 0, Traps: 0,
Silent drops: 0, Proxy drops 0
Output:
Packets: 0, Too bigs: 0, No such names: 0,
Bad values: 0, General errors: 0,
Get requests: 0, Get nexts: 0, Set requests: 0,
Get responses: 0, Traps: 0

XorPlus> clear snmp statistics
XorPlus> show snmp statistics
SNMP statistics:
Input:
Packets: 0, Bad versions: 0, Bad community names: 0,
Bad community uses: 0, ASN parse errors: 0,
Too bigs: 0, No such names: 0, Bad values: 0,
Read onlys: 0, General errors: 0,
Total request varbinds: 0, Total set varbinds: 0,
Get requests: 0, Get nexts: 0, Set requests: 0,
Get responses: 0, Traps: 0,
Silent drops: 0, Proxy drops 0
Output:
Packets: 0, Too bigs: 0, No such names: 0,
Bad values: 0, General errors: 0,
Get requests: 0, Get nexts: 0, Set requests: 0,
```

```
Get responses: 0, Traps: 0
```

2.2.1.11 clear spanning-tree statistics

Syntax	clear spanning-tree statistics [if-name]
Hierarchy Level	[operational]
Release Information	
Description	Clear the STP BPDU statistics of the system
Default	
Options	if-name -Clear the specified interface's RSTP BPDU statistics
Related Topics	

Example:

```
XorPlus>show spanning-tree statistics interface ge-1/1/1
Interface  BPDUs Sent  BPDUs Received
---------  ----------  --------------
ge-1/1/1   31          0

XorPlus>clear spanning-tree statistics

XorPlus>show spanning-tree statistics interface ge-1/1/1
Interface   BPDUs Sent  BPDUs Received
---------  ----------  --------------
ge-1/1/1    0           0
```

2.2.2 configure

Syntax	configure
Hierarchy Level	[operational]
Release Information	
Description	Enter configuration mode. When this command is entered without any optional keywords, everyone can make configuration changes and commit all changes made to the configuration.
Default	
Options	
Related Topics	

Example:

```
XorPlus> configure
There are no other users in configuration mode.
[edit]
XorPlus# set vlans vlan-id 2
[edit]
```

```
XorPlus#
```

2.2.3 exit

Syntax	exit
Hierarchy Level	[operational | config mode]
Release Information	
Description	Exit the current mode to previous mode
Default	
Options	
Related Topics	

Example:

```
XorPlus# exit
XorPlus>
```

2.2.4 file command

Syntax	file <archive | checksum | compare | copy | delete | list | rename | show | source address | sync | tftp>
Hierarchy Level	[operational]
Release Information	
Description	Archive files from the device, copy files to and from the router, calculate the file checksum, compare files,delete a file from the device, list files on the device, rename a file, show file contents, or show the localaddress to initiate a connection.
Default	
Options	Archive --Archives files from the system
	checksum -- Calculate file checksum compare -- Compare files copy -- Copy files (local or remote) delete -- Delete files from the system list -- List file information rename -- Rename files show -- Show file contents source-address -- Local address to use in originating the connection
Related Topics	

Example:

```
XorPlus> file show smple.src
It is a sample text file

XorPlus> file source-address
```

```
10.10.50.210
10.10.50.211

XorPlus> file list
drwxr-xr-x   3 root   root     2048 Apr 27  2010 bin
drwxr-xr-x   5 root   root     4096 Jan  1 00:00 cf_card
drwxrwxrwx   4 519    519      1024 Jan  1 01:24 etc
drwxrwxrwx   4 519    519      4096 Apr 27  2010 lib
drwxrwxrwx   7 519    519      1024 Apr 27  2010 pica
dr-xr-xr-x  47 root   root        0 Jan  1 00:00 proc
drwxr-xr-x   3 root   root     1024 Apr 27  2010 sbin
drwxrwxrwx   3 519    519      1024 Jan  1 01:24 tmp
drwxr-xr-x   7 root   root     1024 Jan  1 01:21 usr
drwxrwxrwx   7 519    519      1024 Apr 27  2010 var
```

2.2.5 help

Syntax	help <cli-string>
Hierarchy Level	[operational]
Release Information	
Description	Give the help information of the CLI commands
Default	
Options	
Related Topics	

Example:

```
    XorPlus> help set
    Set CLI properties, date/time, craft interface message

    XorPlus> help
    Help may be replace by a command by entering a question mark '?'.
If nothing matches, the help list will prompt 'syntax error' and you must
backup until entering a '?' shows the available options. Two styles of
help are provided: 1. Full help is available when you are ready to enter
a command argument (e.g. 'show vlans ?') and describes each possible argument.

Partial help is provided when an abbreviated argument is entered and you
want to know what arguments match the input(e.g. 'show v?'.)
```

2.2.6 ping

Syntax	ping <ip-address > [number]
Hierarchy Level	[operational]
Release Information	
Description	Ping the remote host
Default	
Options	ip-address -ip address of remote host number number -packet number user pings

Related Topics	

Example:

```
XorPlus> ping 10.10.50.1
64 bytes from 10.10.50.1: seq=0 ttl=64 time=3.055 ms
64 bytes from 10.10.50.1: seq=1 ttl=64 time=1.296 ms
64 bytes from 10.10.50.1: seq=2 ttl=64 time=1.319 ms
64 bytes from 10.10.50.1: seq=3 ttl=64 time=1.306 ms
64 bytes from 10.10.50.1: seq=4 ttl=64 time=1.325 ms

--- 10.10.50.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 1.296/1.660/3.055 ms

XorPlus>
```

2.2.7 quit

Syntax	quit
Hierarchy Level	[operational | config mode]
Release Information	
Description	Quit the current mode
Default	
Options	
Related Topics	

Example:

```
XorPlus# quit
XorPlus>
```

2.2.8 request system

Syntax	request system < halt | power-off | reboot | software >
Hierarchy Level	[operational]
Release Information	
Description	Reboot, halt, power-off the system
Default	
Options	halt -Halt the system power-off -Power off the system reboot -Reboot the system software -Reboot with the images under specified path
Related Topics	

Example:

```
XorPlus> request system reboot
Reboot the system….

XorPlus>
```

2.2.8.1 request system software boot_image

Syntax	request system software < boot_image image-path | verify_image >
Hierarchy Level	[operational]
Release Information	
Description	Specify the system image of next reboot, or verify the existing system image
Default	
Options	Image-name -- System image of system reboot. If you execute this command, the previous default boot-image will be replaced
Related Topics	

Example:

```
XorPlus> request system software boot_image/cf_card/my_image

XorPlus>  request system software verify_image /cf_card
Build is from version: svn3538
Created: Thu Jul 15 05:43:40 2010
```

2.2.9 set command

2.2.9.1 set cli

Syntax	set cli <{idle-timeout timeout } | { terminal ansi | linux | vt100 | xterm }>
Hierarchy Level	operational
Release Information	
Description	Configure the related parameter of the CLI
Default	
Options	timeout -- The timeout value of the CLI. After expired, the CLI will logout.
Related Topics	

Example:

```
XorPlus> set cli idle-timeout 2000
XorPlus>
```

2.2.9.2 set date

Syntax	set date <date>
Hierarchy Level	operational
Release Information	
Description	Configure the date of the system.
Default	
Options	date -- The date of the system.
Related Topics	

Example:

```
XorPlus> set date 072210152010
Thu Jul 22 10:15:00 UTC 2010
XorPlus> show host date
Thu Jul 22 10:16:13 UTC 2010
```

2.2.9.3 set management-ethernet-speed

Syntax	set management-ethernet-speed < eth0 | eth1> < 10 | 100 | 1000 | auto>
Hierarchy Level	operational
Release Information	
Description	Configure the management interface link speed.
Default	
Options	
Related Topics	

Example:

```
XorPlus> set management-ethernet-speed eth0 100
XorPlus>
```

2.2.10 show command

analyzer	Show port mirroring information
arp	Show arp information
cli	Show command-line interface settings
ethernet-switching	Show Ethernet switching information
host	Display information about the host
igmp	Display information about IGMP
interface	Show interfaces information

ipfix	Display information about IPFIX
ipv6-neighbors	Show neighbor information for ipv6
lacp	show lacp information
lldp	Show lldp information
log	Show contents of log file
mfea	Display information about IPv4 MFEA
mroute	Display the multicast routing table
ospf4	Display information about OSPFv2
pim	Display information about IPv4 PIM
policy	Show policy information
rip	Display information about RIP
route	Show routes
spanning-tree	Show spanning-tree information
system	System parameters
task	Show routing protocol per-task information
version	Display system version
vlan-interface	Show network interface information
vlans	Show vlan information

2.2.10.1 show analyzer

Syntax	show analyzer
Hierarchy Level	[Operational]
Release Information	
Description	Display the mirroring configuration of the system, including the input port and output port.
Default	
Options	
Related Topics	

Example:

```
XorPlus> show analyzer
Analyzer name: mirror1
Output interface: <ge-1/1/2>
Ingress monitored interfaces: <ge-1/1/3>
Egress monitored interfaces: <ge-1/1/1>

Analyzer name: mirror2
Output interface: <ge-1/1/5>
Ingress monitored interfaces: <ge-1/1/6> < ge-1/1/8>
```

```
Egress monitored interfaces: <ge-1/1/7>

XorPlus>
```

2.2.10.2 show arp

Syntax	show arp
Hierarchy Level	[Operational]
Release Information	
Description	Display the ARP entries in the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show arp
Address       HWtype  HWaddress          Flags Mask    Iface
------------  ------- ------------------ ----- ----    ------
10.10.50.123  ether   00:80:A3:24:8F:44       C       eth0
10.10.50.160  ether   00:05:5D:7A:2D:A5       C       eth0
10.10.50.186  ether   00:1E:C9:38:60:32       C       eth0
10.10.50.18   ether   00:1E:C9:4F:18:2F       C       eth0

XorPlus>
```

2.2.10.3 show cli

Syntax	show cli
Hierarchy Level	[Operational]
Release Information	
Description	Display the CLI configuration of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show cli
CLI complete-on-space is on
CLI idle-timeout disabled
CLI baud-rate is 38400
CLI screen-length is 57
CLI screen-width is 178
CLI terminal is vt100

XorPlus>
```

2.2.10.4 show ethernet-switching

Syntax	show ethernet-switching < {interface <interface> } | table >
Hierarchy Level	[Operational]
Release Information	
Description	Display all FDB entries of the system or by interface
Default	
Options	interface --Display the specified interface 802.1Q configuration, including the tagging or untagging, native VLAN, VLANs belong to. table -- Display all the FDB entries of the system
Related Topics	

Example:

```
XorPlus> show ethernet-switching table
Total entries in switching table:   1
Static entries in switching table:  1
Dynamic entries in switching table: 0
VLAN  MAC address          Type     Age     Interfaces
----  -----------------    -------  ----    ----------
1     22:22:22:22:22:22    static   200     ge-1/1/1

XorPlus> show ethernet-switching interfaces ge-1/1/2
Interface   State   Tagging   Native VLAN   VLAN members
---------   -----   --------  -----------   ----------------
ge-1/1/2    down    untagged  1             1
```

2.2.10.5 show host

Syntax	show host <date | name | os>
Hierarchy Level	[Operational]
Release Information	
Description	Display the host information, including date, host-name, operation system
Default	
Options	date -- Display the date of the system name -- Display the host name of the system os -- Display the operation system of the system
Related Topics	

Example:

```
XorPlus> show host date
Mon Apr  5 03:46:58 CST 2010

XorPlus> show host name
XorPlus
```

```
XorPlus> show host os
Linux bdc-sqa-03 2.6.23.1 #2 SMP Sat Apr 12 21:51:15 CST 2008 i686 i686 i386 GNU/Linux
```

2.2.10.6 show igmp

Syntax	show igmp [group | interface [address]]
Hierarchy Level	[Operational]
Release Information	
Description	Display information about IGMP
Default	
Options	group - Display information about IGMP group membership interface - Display information about IGMP interfaces
Related Topics	

Example:

```
XorPlus>show igmp group
```

2.2.10.7 show interface

Syntax	show interface [{aggregate-ethernet <aggregate-port> [detail | brief] }| { gigabit-ethernet <gigabit-port> [detail | brief]} | detail | brief | management-ethernet]
Hierarchy Level	[Operational]
Release Information	
Description	Display the interface information of the system
Default	
Options	none --Display all the information of the interfaces aggregate-port -- Display the information of the aggregate port gigabit-port -- Display the information of the gigabit port detail -- Display the detail information of all the interface brief -- Display the brief information of the interface management-ethernet -- Show information about the specified management-ethernet interface
Related Topics	

Example:

```
XorPlus> show interfaces gigabit-ethernet ge-1/1/1
Physical interface: ge-1/1/1, Enabled, Physical link is Down
Interface index: 1
Link-level type: Ethernet, MTU: 1514, Speed: 10Gb/s, Duplex: Full
Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled
Interface flags: Hardware-Down SNMP-Traps Internal: 0x0
CoS queues: 6 supported, 6 maximum usable queues
Current address: 00:19:e2:50:3f:41, Hardware address: 00:19:e2:50:3f:41
Traffic statistics:
Input Packets.........................0
```

```
Output Packets.........................0
Input Octets...........................0
Output Octets..........................0

XorPlus>
```

2.2.10.8 show ipfix

Syntax	show ipfix [collector | interfaces]
Hierarchy Level	[Operational]
Release Information	
Description	Display information about IPFIX
Default	
Options	collector --Display information about IPFIX collector interfaces --Display information about IPFIX interfaces
Related Topics	

Example:

```
XorPlus> show ipfix collector
    IPFIX Collector Address    UDP Port
    -----------------------    --------
    10.10.50.195               9996
    10.10.50.231               9996

XorPlus> show ipfix interfaces
    Interfaces  Direction  Max-entries  Min-time  Max-time  Max-idle-time  Sample-rate
    ----------  ---------  -----------  --------  --------  -------------  -----------
    ge-1/1/1    Ingress    8000         1         300       90             1
    ge-1/1/1    Egress     8000         1         300       90             1
    ge-1/1/2    Ingress    8000         1         300       90             1
```

2.2.10.9 show ipv6-neighbors

Syntax	show ipv6-neighbors
Hierarchy Level	[Operational]
Release Information	
Description	Show neighbor information for ipv6
Default	
Options	
Related Topics	

Example:

```
XorPlus>show ipv6-neighbors
    Address                                  HW Address          Interface
```

```
    ---------------------------------------     -----------------     ---------
```

2.2.10.10 show lacp

Syntax	show lacp <{internal < aggregate-interface aggregate-port | gigabit-interface gigabit-port>} | {neighbor <aggregate-interface aggregate-port |gigabit-interface gigabit-port>} | {statistics< aggregate-interface aggregate-port | gigabit-interface gigabit-port >} >
Hierarchy Level	[Operational]
Release Information	
Description	Display the LACP information of the system
Default	
Options	internal --Display the internal information of the LACP neighbor -- Display the neighbor information of the LACP statistics -- Display the statistics of the LACP packets aggregate-port -- Display the LACP information by aggregate-port gigabit-port -- Display the LACP information by gigabit-port
Related Topics	

Example:

```
XorPlus> show lacp neighbor aggregate-interface ae2
Aggregated interface:
Port Number   Partner System ID         Partner Port Num   Port Priority Admin Key   Oper Key   State
-----------   ----------------------    ----------------   ------------- ---------   --------   -----

XorPlus>
```

2.2.10.11 show lldp

Syntax	show lldp < {neighbor gigabit-port } | { statistics gigabit-port} | detail | local_info >
Hierarchy Level	[Operational]
Release Information	
Description	Display the LLDP information of the system
Default	
Options	neighbor --Display LLDP neighbor of specified interface statistics -- Display LLDP statistics of specified interface detail -- Display the detail information of LLDP including ad-interval, transmit-delay, hold-time. local_info -- Display the local information of the system including the chassis-ID, system-name, interface status
Related Topics	

Example:

```
XorPlus> show lldp local_info
LLDP Local configuration details
Chassis ID: 00:00:c2:85:c1:00
System name: Pica8 Switch
System description:
Interface     LLDP         State
----------    ---------    ---------
Ge-1/1/1      enable       tx_rx

XorPlus> show lldp detail
LLDP: Enable
Advertisement interval: 30
Re-initialization Delay: 2
Transmit Delay: 2
Hold timer: 120
Selected TLVs:
port_description
system_name
system_description
system_capabilities
management_address
port_vlan_id
mac_phy

XorPlus> show lldp statistics ge-1/1/5
Interface   Rece   Trans   Unknown   With-Err   Discarded
----------  ----   -----   -------   --------   ----------
ge-1/1/5    190    192     0         0          0
```

2.2.10.12 show log

Syntax	show log
Hierarchy Level	[Operational]
Release Information	
Description	Display the log of the switch system.
Default	
Options	
Related Topics	

Example:

```
XorPlus> show log

XorPlus> [00:00:26 xorp_rtrmgr] Boot file:=/pica/config.boot
[00:00:26 xorp_rtrmgr] Templates dir:= /etc/templates
[00:00:26 xorp_rtrmgr] Xrl targets directory      := /pica/bin/../xrl/targets
[00:00:26 xorp_rtrmgr] Execute Xrls               := true
[00:00:26 xorp_rtrmgr] Restart failed processes   := false
[00:00:26 xorp_rtrmgr] Print verbose information  := true
[00:00:29 xorp_rtrmgr] New module: login (system/pica_login)
[00:00:29 xorp_rtrmgr] New module: cardmgr (cardmgr/pica_cardmgr)
[00:00:29 xorp_rtrmgr] New module: interfaces (sif/pica_sif)
```

```
[00:00:29 xorp_rtrmgr] New module: lacp (lacp/pica_lacp)
[00:00:29 xorp_rtrmgr] New module: lldp (lldp/pica_lldp)
[00:00:29 xorp_rtrmgr] New module: rstp (rstp/pica_rstp)
[00:00:29 xorp_rtrmgr] New module: stat (stat/pica_stat)
[00:00:29 xorp_rtrmgr] New module: vlans (sif/pica_sif)
[00:00:29 xorp_rtrmgr] New module: vlan_interface
[00:00:29 xorp_rtrmgr] New module: rib (rib/xorp_rib)
[00:00:29 xorp_rtrmgr] New module: policy
[00:00:29 xorp_rtrmgr] New module: rip (rip/xorp_rip)
[00:00:29 xorp_rtrmgr] New module: static_routes
[00:00:29 xorp_rtrmgr] New module: ospf4 (ospf/xorp_ospfv2)
[00:00:29 xorp_rtrmgr] New module: snmp (snmp/pica_snmp)
[00:00:29 xorp_rtrmgr] New module: lcmgr (lcmgr/pica_lcmgr)
[00:00:29 xorp_rtrmgr] New module: chassis ()
```

2.2.10.13 show mfea

Syntax	show mfea [dataflow | interface]
Hierarchy Level	[Operational]
Release Information	
Description	Display information about IPv4 MFEA
Default	
Options	
Related Topics	

Example:

```
XorPlus> show mfea dataflow

XorPlus> show mfea interface address
    Interface    Addr            Subnet             Broadcast       P2Paddr
    vlan.1       11.11.50.10     11.11.0.0/18       11.11.63.255    0.0.0.0
```

2.2.10.14 show mroute

Syntax	show mroute
Hierarchy Level	[Operational]
Release Information	
Description	Display the multicast routing table
Default	
Options	
Related Topics	

Example:

```
XorPlus> show mroute

    Source IP and group             Incoming Interface      Outgoing Interfaces
    ------------------------------- ------------------      ------------------------
```

2.2.10.15 show ospf4 database

Syntax	show ospf4 database <area | asbrsummary | brief | detail | external | netsummayr | network | nssa | router | summayr>
Hierarchy Level	[Operational]
Release Information	
Description	Display the ospf route database of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show ospf4 database summary
Area 0.0.0.0
Externals:
XorPlus> show ospf4 database detail
   OSPF link state database, Area 0.0.0.0
XorPlus>
```

2.2.10.16 show ospf4 neighbor

Syntax	show ospf4 neighbor [all]
Hierarchy Level	[Operational]
Release Information	
Description	Display the ospf route neighbor of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show ospf4 neighbor
  Address     Interface      State     ID      Pri    Dead

XorPlus>
```

2.2.10.17 show pim

bootstrap	Display information about PIM IPv4 bootstrap routers
interface	Display information about PIM IPv4 interfaces
join	Display information about PIM IPv4 groups
mfc	Display information about PIM Multicast Forwarding Cache
mrib	Display MRIB IPv4 information inside PIM
neighbors	Display information about PIM IPv4 neighbors
rps	Display information about PIM IPv4 RPs
scope	Display information about PIM IPv4 scope zones

bootstrap

Syntax	show pim bootstrap [rps]
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM IPv4 bootstrap routers
Default	
Options	rps -- Display information about PIM IPv4 bootstrap RPs
Related Topics	

interface

Syntax	show pim interface [address]
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM IPv4 interfaces
Default	
Options	address -- Display information about addresses of PIM IPv4 interfaces
Related Topics	

join

Syntax	show pim join [all]
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM IPv4 groups
Default	
Options	all -- Display information about all PIM IPv4 groups
Related Topics	

mfc

Syntax	show pim mfc
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM Multicast Forwarding Cache
Default	
Options	
Related Topics	

mrib

Syntax	show pim mrib
Hierarchy Level	[Operational]
Release Information	
Description	Display MRIB IPv4 information inside PIM
Default	
Options	
Related Topics	

neighbors

Syntax	show pim neighbors
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM IPv4 neighbors
Default	
Options	
Related Topics	

rps

Syntax	show pim rps
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM IPv4 RPs
Default	
Options	

Related Topics	

scope

Syntax	show pim scope
Hierarchy Level	[Operational]
Release Information	
Description	Display information about PIM IPv4 scope zones
Default	
Options	
Related Topics	

2.2.10.18 show policy

Syntax	show policy < network4-list | policy-statement>
Hierarchy Level	[Operational]
Release Information	
Description	Display the policy of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show policy policy-statement
connected-to-rip  policy-statement connected-to-rip {
        term export {
                from {
                        protocol connected;
                }
                to {
                }
                then {
                        metric = 0;
                }
        }
}

XorPlus>
```

2.2.10.19 show rip peer

Syntax	show rip peer [statistics <vlan-interface | all>]

Hierarchy Level	[Operational]
Release Information	
Description	Display the rip peer information of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show rip peer
Address  Interface   State  HelloRx  HelloTx   Last Hello
There are no known peers.
XorPlus>
```

2.2.10.20 show rip statistics

Syntax	show rip statistics <vlan-interface | all>
Hierarchy Level	[Operational]
Release Information	
Description	Display the rip statistics information of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show rip statistics all

* RIP on vlan.5 vlan.5 10.10.90.1
  Status: enabled [gated by disabled FEA interface/address]

  Counter                                  Value
  -------------------------------- ----------------
  Requests Sent                              19
  Updates Sent                               18
  Triggered Updates Sent                      1
  Non-RIP Updates Sent                        0
  Total Packets Received                      0
  Request Packets Received                    0
  Update Packets Received                     0
  Bad Packets Received                        0
  Authentication Failures                     0
  Bad Routes Received                         0
  Non-RIP Requests Received                   0
```

```
XorPlus>
```

2.2.10.21 show rip status

Syntax	show rip status<vlan-interface | all>
Hierarchy Level	[Operational]
Release Information	
Description	Display the rip status information of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show rip status all

* RIP on vlan.5 vlan.5 10.10.90.1
  Status: enabled [gated by disabled FEA interface/address]

XorPlus>
```

2.2.10.22 show route table ipv4 unicast

Syntax	show route table ipv4 unicast < connected | final | ospf | rip | static >
Hierarchy Level	[Operational]
Release Information	
Description	Display the route information of the system
Default	
Options	connected --Show IPv4 routes from connected interfaces final -- Show IPv4 winning routes ospf -- Show routes from OSPFv2 rip -- Show routes from RIP static -- Show IPv4 static routes
Related Topics	

Example:

```
XorPlus> show route table ipv4 unicast final
10.10.51.0/24   [static(1)/1]
> to 10.10.61.20 via vlan.3/vlan.3
10.10.60.0/24   [connected(0)/0]
> via vlan.2/vlan.2
10.10.61.0/24   [connected(0)/0]
> via vlan.3/vlan.3
```

```
XorPlus>
```

2.2.10.23 show snmp statistics

Syntax	show snmp statistics
Hierarchy Level	[Operational]
Release Information	
Description	Display the SNMP statistics information of the system
Default	
Options	
Related Topics	

Example:

```
XorPlus> show snmp statistics
SNMP statistics:
Input:
Packets: 0, Bad versions: 0, Bad community names: 0,
Bad community uses: 0, ASN parse errors: 0,
Too bigs: 0, No such names: 0, Bad values: 0,
Read onlys: 0, General errors: 0,
Total request varbinds: 0, Total set varbinds: 0,
Get requests: 0, Get nexts: 0, Set requests: 0,
Get responses: 0, Traps: 0,
Silent drops: 0, Proxy drops 0
Output:
Packets: 0, Too bigs: 0, No such names: 0,
Bad values: 0, General errors: 0,
Get requests: 0, Get nexts: 0, Set requests: 0,
Get responses: 0, Traps: 0

XorPlus>
```

2.2.10.24 show spanning-tree

Syntax	show spanning-tree < { bridge [detail | brief]} | {interface [gigabit-port | detail | brief] }>
Hierarchy Level	[Operational]
Release Information	
Description	Display the spanning tree information of the system
Default	
Options	bridge -Display the spanning tree information of thee bridge, including the root-id, bridge-id interface - Display the spanning tree information of each interface, including the current spanning tree status, role, cost and etc

Related Topics	

Example:

```
XorPlus> show spanning-tree bridge
STP bridge parameters
Enabled protocol: STP
Root ID: 32768.0:22:be:96:f2:80
Hello time: 2 seconds
Maximum age: 20 seconds
Forward delay: 15 seconds
Number of topology changes: 0
Local parameters
Bridge ID:  32768.c8:a:a9:3:49:1f

XorPlus> show spanning-tree statistics
Interface   BPDUs Sent  BPDUs Received
----------  ----------  --------------
ge-1/1/5    2396        111
ge-1/1/6    2408        83
ge-1/1/7    2478        1221
ge-1/1/8    2445        1120
ge-1/1/11   2729        899
ge-1/1/12   2707        783
```

2.2.10.25 show system

Syntax	show system <boot-messages | connections | core-dumps | processes | rollback <rollback> | uptime | users>
Hierarchy Level	[Operational]
Release Information	
Description	Display the system
information	
Default	
Options	boot-messages- Display the boot information when system reboot. connections - Display the connection information of the system core-dumps - Display the core-dumps of the system processes - Display the processes of the system rollback - Display the possible rollback number of the system uptime - Display the running time from the system up
Related Topics	

Example:

```
XorPlus> show system uptime
01:39:40 up  1:39, load average: 1.31, 1.40, 1.01

XorPlus> root@PICA8> show system rollback
-rw-rw-r-- 1 root xorp 11141 Jan 1 01:22  /CONFIG/pica.conf
```

```
-rw-rw-r-- 1 root xorp 11137 Jan 1 01:20 /CONFIG/pica.conf.1
-rw-rw-r-- 1 root xorp 10288 Jan 1 01:13 /CONFIG/pica.conf.2
-rw-rw-r-- 1 root xorp 11210 Jan 1 01:12 /CONFIG/pica.conf.3
-rw-rw-r-- 1 root xorp 11158 Jan 1 01:12 /CONFIG/pica.conf.4

XorPlus> show system uptime
01:24:40 up  1:24, load average: 0.37, 0.65, 0.97

XorPlus> show system rollback compare to 2
--- /cf_card/CONFIG/pica.conf   Thu Jan  1 01:16:42 1970
+++ /cf_card/CONFIG/pica.conf.2 Thu Jan  1 00:27:02 1970
@@ -389,7 +389,7 @@
}
rstp {
enable: true
-        bridge-priority: 4096
+        bridge-priority: 16384
forward-delay: 15
@@ -417,10 +417,6 @@
}
vlans {
-    vlan-id 1000 {
description: ""
vlan-name: "default"
}
```

2.2.10.26 show task

Syntax	show task
Hierarchy Level	[Operational]
Release Information	
Description	Display the process names of the system, including the VLAN, LLDP, etc..
Default	
Options	
Related Topics	

Example:

```
XorPlus> show task
897 root     15704 S    pica_login
902 root     20880 S    pica_cardmgr
905 root     36788 S    pica_sif
908 root     25608 S    pica_lacp
911 root     28068 S    pica_lldp
914 root     26280 S    pica_rstp
917 root     28516 S    pica_stat
922 root     28216 S    xorp_fea
951 root     25180 S    xorp_rib
954 root     22596 S    xorp_policy
957 root     21780 S    xorp_rip
960 root     21108 S    xorp_static_routes
```

```
963 root     23208 S    xorp_ospfv2
966 root     69584 S    pica_snmp
975 root     53404 S    pica_lcmgr
999 root     37084 S    /pica/bin/pica_sh
1138 root     37120 R    /pica/bin/pica_sh

XorPlus>
```

2.2.10.27 show version

Syntax	show version
Hierarchy Level	[Operational]
Release Information	
Description	Display the system software version information
Default	
Options	
Related Topics	

Example:

```
XorPlus>  show version
Pica8  XorPlus  1.2
Copyright (C) 2009, 2010 Pica8, Inc.
Base ethernet MAC Address   : C8:0A:A9:AE:0A:66
Hardware model              : Pronto 3780
Revision ID                 : 5219

XorPlus>
```

2.2.10.28 show vlan-interface

Syntax	show vlan-interface [vlan-interface]
Hierarchy Level	[Operational]
Release Information	
Description	Display the information of the VLAN interface.
Default	
Options	
Related Topics	

Example:

```
XorPlus> show vlan-interface
vlan.1      Hwaddr C8:0A:A9:04:49:28, Vlan:1, State:UP
            Inet addr: 10.10.50.190/24

vlan.2      Hwaddr C8:0A:A9:04:49:28, Vlan:2, State:DOWN
            Inet addr: 10.10.60.1/24
```

```
vlan.3      Hwaddr C8:0A:A9:04:49:28, Vlan:3, State:UP
            Inet addr: 10.10.70.1/24

vlan.4      Hwaddr C8:0A:A9:04:49:28, Vlan:4, State:DOWN
            Inet addr: 10.10.80.1/24

vlan.5      Hwaddr C8:0A:A9:04:49:28, Vlan:5, State:UP
            Inet addr: 10.10.90.1/24

vlan.6      Hwaddr C8:0A:A9:04:49:28, Vlan:6, State:DOWN
            Inet addr: 10.10.100.1/24

XorPlus>
```

2.2.10.29 show vlans

Syntax	show vlans [brief | detail | vlan-id <vlan-id>]
Hierarchy Level	[Operational]
Release Information	
Description	Display the information of the VLANs, including the VLAN members, VIDs.
Default	
Options	brief - Display the brief information of the VLANs detail - Display the detail information of the VLANs vlan-id - Display the specified VLAN informationn including the tagged and members
Related Topics	

Example:

```
XorPlus> show vlans vlan-id 1
VLAN ID: 1
Description:
Number of member ports: 4
Tagged port: None
Untagged port:ge-1/1/1,ge-1/1/2,ge-1/1/3,ge-1/1/4,


XorPlus> show vlans vlan-id 2
VLAN ID: 2
Description:
Number of member ports: 4
Tagged port: None
Untagged port:ge-1/1/11,ge-1/1/12,ge-1/1/13,ge-1/1/14,
```

2.2.11 ssh

Syntax	ssh <ip-address >
Hierarchy Level	[Operational]

Release Information	
Description	SSH to a remote host.
Default	
Options	ip-address --The remote host IP address which want to SSH telnet.
Related Topics	

Example:

```
XorPlus> ssh 10.10.50.16
Host '10.10.50.16' is not in the trusted hosts file.
(fingerprint md5 b5:c5:d3:10:7a:7e:ed:97:4c:a9:57:4d:83:71:85:d2)
Do you want to continue connecting? (y/n) y
root@10.10.50.16's password:
Last login: Fri Jul 16 09:35:52 2010 from 10.10.50.16

[root@dev-16 ~]$
[root@dev-16 ~]$ exit

XorPlus>
```

2.2.12 start shell

Syntax	start shell
Hierarchy Level	[Operational]
Release Information	
Description	Enter the system'sshell, user must input the root password.
Default	
Options	bash - Enter the system's bash shell sh - Enter the system's shell
Related Topics	

Example:

```
XorPlus> start shell sh
Input password:

# ls -l
drwxr-xr-x   3 root   root     2048 Apr 27  2010 bin
drwxr-xr-x   5 root   root     4096 Jan  1 00:00 cf_card
drwxrwxrwx   4 519    519      1024 Jan  1 01:24 etc
drwxrwxrwx   4 519    519      4096 Apr 27  2010 lib
drwxrwxrwx   7 519    519      1024 Apr 27  2010 pica
dr-xr-xr-x  47 root   root        0 Jan  1 00:00 proc
drwxr-xr-x   3 root   root     1024 Apr 27  2010 sbin
drwxrwxrwx   3 519    519      1024 Jan  1 01:24 tmp
drwxr-xr-x   7 root   root     1024 Jan  1 01:21 usr
drwxrwxrwx   7 519    519      1024 Apr 27  2010 var

# exit
XorPlus>
```

2.2.13 syslog

Syntax	syslog monitor < on | off >
Hierarchy Level	[Operational]
Release Information	
Description	Configure the system log output to the terminal
Default	
Options	on - Thee syslog will be outputted to monitor off - The syslog will not be outputted to monitor
Related Topics	

Example:

```
XorPlus> syslog monitor on

[ 1970/01/01 01:48:35 INFO pica_lcmgr XifCardManager ] lcmgr_0_1_clear_fdb_by_port: port_id = 01/01/12, clear_static = 0
[ 1970/01/01 01:48:35 INFO pica_lcmgr XifCardManager ] lcmgr_0_1_send_packet

XorPlus> configure

XorPlus# exit
debug: len = 444
== Mac update event, count=10, len = 444 ==
[ 1970/01/01 01:48:42 INFO pica_lcmgr XifCardManager ] lcmgr_0_1_send_packet_by_port:
[ 1970/01/01 01:48:43 INFO pica_lcmgr XifCardManager ] lcmgr_0_1_send_packet_by_port:

XorPlus> syslog monitor off

XorPlus>
```

2.2.14 telnet

Syntax	telnet <ip-address >
Hierarchy Level	[Operational]
Release Information	
Description	Telnet a remote host
Default	
Options	ip-address --The remote host IP address which want to SSH telnet.
Related Topics	

Example:

```
XorPlus> telnet 10.10.50.16
root@10.10.50.16's password:
[root@dev-16 ~]$
[root@dev-16 ~]$ exit

XorPlus>
```

2.2.15 traceroute

Syntax	traceroute <host-ip >
Hierarchy Level	[Operational]

Release Information	
Description	Traceroute the specified host.
Default	
Options	host-ip -- Traceroute the specified host with IP address
Related Topics	

Example:

```
XorPlus> traceroute 10.10.51.54
traceroute to 10.10.51.54, 30 hops max, 40 byte packets

1  10.10.50.1  (10.10.50.1)   0.555 ms  0.559 ms  0.553 ms
2  10.10.51.54 (10.10.51.54)  0.512 ms  0.529 ms  0.559 ms

XorPlus>
```

3 Config Mode

3.1 Overview

The Config Mode provides a full set of configure commands.

3.1.1 Access

This mode is accessed by using the configure command in Operational Mode, or by using the top command in up-level Mode.

3.1.2 Exit

To exit from this mode, use the exit command to return to Operational Mode.

3.2 Commands

Table:

cls	Clear the terminal screen
commit	Commit the current set of changes
delete	Delete a configuration element
edit	Edit a sub-element
exit	Exit from this configuration level
help	Provide help with commands
load	Load configuration from a file
quit	Quit from this level
request	Execute command in the system
rollback	Roll back to previous committed configuration
run	Run an operational-mode command
save	Save configuration to a file
set	Set the value of a parameter or create a new element

show	Show the configuration (default values may be suppressed)
status	Show users currently editing configuration
top	Exit to top level of configuration
up	Exit one level of configuration

3.2.1 cls

3.2.2 commit

Syntax	commit
Hierarchy Level	[config mode]
Release Information	
Description	Commit the current user configuration to the system
Default	
Options	
Related Topics	

Example:

```
XorPlus# set vlans vlan-id 3
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.2.3 delete

The delete command can be used to delete subtrees from the configuration. The deletion will be visible in the results of the show command, but will not actually take place until the changes are committed. The "-" indicates parts of the configuration that has been deleted but not yet been committed.

Syntax	delete < configuration subtree path >
Hierarchy Level	[config mode]
Release Information	
Description	Delete an existing configuration of the system
Default	
Options	configuration subtree path - the configuration subtree or leaf node to be deleted
Related Topics	

Example:

```
XorPlus# delete vlans vlan-id 2
[edit]
XorPlus# commit
```

```
Commit OK.
Save done.
[edit]

XorPlus# show

    vlans {
        vlan-id 1 {
        }
XorPlus#
```

3.2.4 edit

You can change the current location in the configuration tree using the edit, exit, quit, top and up commands.

Syntax	edit < subtree path >
Hierarchy Level	[config mode]
Release Information	
Description	Enter into an configuration node of the system, if the configuration node isn't existed, system will create it automatically.
Default	
Options	subtree path - Specify the configuration subtree path to be edited
Related Topics	

Example:

```
XorPlus# edit vlans vlan-id 2
[edit vlans vlan-id 2]
XorPlus#
```

3.2.5 exit

Exit the edit or configuration mode.

3.2.6 help

Syntax	help < command >
Hierarchy Level	[config mode]
Release Information	
Description	Provide help with commands
Default	
Options	
Related Topics	

Example:

```
XorPlus# help rollback
Roll back to previous committed configuration
```

3.2.7 load

Syntax	load < file-name >
Hierarchy Level	[config mode]
Release Information	
Description	Load a configuration file to the system
Default	
Options	File-name - The file name of the configuration filew which is to be loaded to system.
Related Topics	

Example:

```
XorPlus#  load rollback.src

XorPlus#
```

3.2.8 quit

Syntax	quit
Hierarchy Level	[config mode]
Release Information	
Description	Quit this command session
Default	
Options	
Related Topics	

Example:

```
XorPlus#
ERROR: There are uncommitted changes.
Use "commit" to commit the changes, or "exit discard" to discard them.
```

3.2.9 reuqest stp mcheck

Syntax	reuqest stp mcheck
Hierarchy Level	[config mode]
Release Information	
Description	Reuqest stp mcheck, which will make the switch to RSTP again from the STP mode
Default	

Options	
Related Topics	

Example:

```
XorPlus# reuqest stp mcheck
XorPlus#
```

3.2.10 rollback

Syntax	rollback <number>
Hierarchy Level	[config mode]
Release Information	
Description	Rollback the configuration file with older configuration
files.	
Default	
Options	number - The number of the rollback configuration file.
Related Topics	

Example:

```
XorPlus# rollback 2
Load done.
[edit]
XorPlus#
```

3.2.11 run

Syntax	run <operational statements>
Hierarchy Level	[config mode]
Release Information	
Description	Run the operation CLIs in the config mode.
Default	
Options	operational statements - the operational statementss which is to be execute in the config mode
Related Topics	

Example:

```
XorPlus# run show vlans
VlanID   Tag        Interfaces
------   --------   ---------------------------------------
1        tagged
         untagged   ge-1/1/1, ge-1/1/2, ge-1/1/3, ge-1/1/4,  ge-1/1/5, ge-1/1/6,  ge-1/1/7, ge-1/1/8,  ge-1/1/9,  ge-1/1/10, ae2,
3        tagged
         untagged
XorPlus#
```

3.2.12 save

Syntax	save <file-name | default-to-startup | running-to-startup>
Hierarchy Level	[config mode]
Release Information	
Description	Save current configuration into a specified file.
Default	
Options	file-name - Specified the file name of the saved configure default-to-startup - Save default configuration to startup configuration running-to-startup - Save running configuration to startup configuration
Related Topics	

Example:

```
XorPlus# save backup.src
Save done.
[edit]
XorPlus#
```

3.2.13 set

set the value of the specified configuration node.

chassis	Chassis configuration
class-of-service	Class of service configuration
interface	Interface configuration
multicast-interface	Configure multicast interface
policy	Configure routing policies
protocols	Configure protocol parameters
system	System parameters
traceoptions	Configure the tracing options
vlan-interface	Configure network interfaces
vlans	Vlan configuration

3.2.14 show

The current configuration or parts of the configuration can be shown with the show command

<[Enter]>	Execute this command
all	Show the configuration (all values displayed)
chassis	Chassis configuration
interface	Interface configuration
multicast-interface	Configure multicast interface
policy	Configure routing policies
protocols	Configure protocol parameters

system	System parameters
vlan-interface	Configure network interfaces
vlans	Vlan configuration
	Pipe through a command

3.2.15 status

Syntax	status
Hierarchy Level	[config mode]
Release Information	
Description	Display the current level in the config mode
Default	
Options	
Related Topics	

Example:

```
XorPlus# status
There are no other users in configuration mode.
[edit]
XorPlus#
```

3.2.16 top

Syntax	top
Hierarchy Level	[config mode]
Release Information	
Description	Configure the current level to the top level in the config mode
Default	
Options	
Related Topics	

Example:

```
XorPlus# edit ethernet-switching-options analyzer mirror
[edit ethernet-switching-options analyzer mirror]

XorPlus#  status
There are no other users in configuration mode.
[edit ethernet-switching-options analyzer mirror]

XorPlus#  top
[edit]

XorPlus#  status
There are no other users in configuration mode.
[edit]
```

```
XorPlus#
```

3.2.17 up

Syntax	up
Hierarchy Level	[config mode]
Release Information	
Description	Configure the current level to the up level in the config mode
Default	
Options	
Related Topics	

Example:

```
XorPlus# edit ethernet-switching-options analyzer mirror
[edit ethernet-switching-options analyzer mirror]

XorPlus#  status
There are no other users in configuration mode.
[edit ethernet-switching-options analyzer mirror]

XorPlus#  up
[edit]

XorPlus#  status
There are no other users in configuration mode.
[edit ethernet-switching-options analyzer]
XorPlus#
```

3.3 Set Command

The set command can be used to set or change the value of a configuration option. The change does not actually take effect immediately - the commit command must be used to apply this and any other uncommitted changes.

chassis	Chassis configuration
class-of-service	Class of service configuration
interface	Interface configuration
multicast-interface	Configure multicast interface
policy	Configure routing policies
protocols	Configure protocol parameters
system	System parameters
traceoptions	Configure the tracing options
vlan-interface	Configure network interfaces
vlans	Vlan configuration

3.3.1 set chassis

This command is temporarily kept here for loading default config data.

3.3.2 set class-of-service

<[Enter]>	Execute this command
classifier	Classifier configuration
forwarding-class	Forwarding class configuration
interface	Gigabit-ethernet interface
traceoptions	Configure the tracing options

3.3.3 set interface

Refer to Interface Configuration for details.

aggregate-ethernet	Name of LAG interface (ae1..ae6)
ethernet-switching-options	Ethernet switching options
gigabit-ethernet	GigabitEthernet IEEE 802.3z
management-ethernet	Management ethernet
traceoptions	Configure the tracing options

3.3.4 set multicast-interface

disable	Disable the IPv4 multicast-interface
interface	Configure IPv4 multicast-interface on a network interface
traceoptions	Configure the tracing options

3.3.4.1 set multicast-interface interface

Syntax	set multicast-interface interface <interface-name> disable [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	Enable or disable the multicast function on the given interface
Default	
Options	<interface-name> the interface to apply the setting
Related Topics	

3.3.5 set policy

See Chapter 11 of XORP User Manual for more details.

```
An example of policy configuration tree is shown as following:

   policy {
      policy-statement "policy-test" {
          term "term-1" {
```

```
            from {
                metric: 2
                external-type: 2
                protocol: "static"
                network4: 1.1.1.0/24
                network4-list: "list-net"
            }
            to {
                metric: 2
                external-type: 1
                network4: 2.2.2.0/24
                network4-list: "net-2"
            }
            then {
                metric: 3
                external-type: 2
                accept {
                }
                reject {
                }
            }
        }
        then {
            accept {
            }
            reject {
            }
        }
    }
}
```

3.3.5.1 policy-statement

Syntax	set policy policy-statement <policy-name>
Hierarchy Level	[config mode]
Release Information	
Description	Set a policy statement for the routing protocol configuration, e.g rip, ospf. The configuration tree of the policy is as uppper
Default	
Options	policy-names -Name of one or more policies.
Related Topics	A policy statement is the user definition for a policy. Internally, it contains a list of terms. A term is the most atomic unit of execution of a policy. Each single term, if executed, will cause actions to be taken on a route. A policy statement should define a logical operation to be run on routes and this operation may involve multiple terms, which define simpler and

3.3.6 set protocols

See Protocol Configuration Section for how to configure the running parameters of each protocols.

igmp	Configure the IGMP protocol
igmp-snooping	Configure the igmp snooping
ipfix	Configure the IPFIX protocol
lacp	Link Aggregation Control Protocol
lldp	Link Layer Discovery Protocol 802.1AB
ospf4	Configure the OSPF protocol
ospf6	Configure the OSPF protocol
pimsm4	Configure the IPv4 PIM-SM protocol
rip	RIP configuration
ripng	RIPng configuration
rstp	Spanning Tree Protocol 802.1w
snmp	Simple network management protocol configuration
static	Configure static routes
vrrp	Configure VRRP

3.3.7 set system

hostname	This system's network name
login	Names and passwords for users
ntp-server-ip	Sync time with NTP server <IP>
services	System services
timezone	Set local time zone

3.3.7.1 hostname

Syntax	set system hostname < host-name >
Hierarchy Level	[config mode]
Release Information	
Description	Configure hostname of the system
Default	
Options	host-name - Configure the system host name
Related Topics	

Example:

```
XorPlus# set system hostname Switch-1021
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

Switch-1021#
```

```
Switch-1021#
```

3.3.7.2 login announcement

Syntax	set system login announcement < string >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the system announcement message (displayed after login)
Default	
Options	string - The display message when user login the system
Related Topics	

Example:

```
XorPlus# set system login announcement "hello, user!"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.7.3 login user

Syntax	set system login user < user > < {authentication plain-text-password passwd} | {class read-only| super-user} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure login user information of the system
Default	
Options	passwd - The password of the specified user
Related Topics	

Example:

```
XorPlus# set system login user ychen authentication plain-text-password ychen
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.7.4 ntp-server-ip

Syntax	set system ntp-server-ip < ip-add >
Hierarchy Level	[config mode]
Release Information	
Description	Configure NTP server IP address of the system
Default	
Options	ip-add - The IP address of the system NTP server
Related Topics	

Example:

```
XorPlus# set system ntp-server-ip 10.10.50.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.7.5 services ssh

Syntax	set system services ssh < {connection-limit con-limit} |{protocol-version v1|v2} | {rate-limit rate-limit} | {root-login allow|deny|deny-password} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure SSH configuration of the system
Default	
Options	con-limit - The maximum SSH connection for the system Range: [1..250] rate-limit - The maximum SSH connection rate for the system Range: [1..250]
Related Topics	

Example:

```
XorPlus# set system services ssh protocol-version v1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.7.6 services telnet

Syntax	set system services telnet < {connection-limit con-limit} |{rate-limit rate-limit} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure telnet configuration of the system
Default	
Options	con-limit - The maximum telnet connection for the system Range: [1..250] rate-limit - The maximum telnet connection rate for the system Range: [1..250]
Related Topics	

Example:

```
XorPlus# set system services telnet connection-limit 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.7.7 sntp server

Syntax	set system sntp server < ip-add >
Hierarchy Level	[config mode]
Release Information	
Description	Configure SNTP server IP address of the system
Default	
Options	ip-add - The IP address of the system SNTP server
Related Topics	

Example:

```
XorPlus# set system sntp server 10.10.50.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.7.8 syslog

Syntax	set system syslog < {file file-name} | {host ip-add} >

Hierarchy Level	[config mode]
Release Information	
Description	Configure system logged information of the system
Default	
Options	ip-add - The IP address of the host, which the syslogg will send to file-name - The file name of the syslogR
Related Topics	

Example:

```
XorPlus# set system syslog host 10.10.50.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.8 set traceoptions

Syntax	set traceoptions flag all disable [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	Enable or disable trace function of all modules
Default	
Options	
Related Topics	

3.3.9 set vlan-interface

Syntax	set vlan-interface interface <l3-interface>
Hierarchy Level	[config mode]
Release Information	
Description	This delimits the configuration for a particular l3-interface.
Default	
Options	l3-interface -The parameter is the name of thee interface, which must correspond to aninterface known to the router forwarding path.
Related Topics	

Example:

```
XorPlus# set vlan-interface interface vlan.10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.3.9.1 vlan-interface interface <if-name> address

Syntax	set vlan-interface interface <l3-interface> address <ipv4> prefix-length <netmask>
Hierarchy Level	[config mode]
Release Information	
Description	This specifies a new IP address for this interface.
Default	
Options	Ipv4-The parameter is either an IPv4 address. prefix-length -This gives the prefix length of thee subnet connected to this interface. For an IPv4 address, prefix-length must be between 4 and 32.
Related Topics	

Example:

```
XorPlus# set vlan-interface interface vlan.10 address 172.168.110.1 prefix-length 24
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.3.9.2 vlan-interface interface <if-name> disable

Syntax	set vlan-interface interface <l3-interface> diable <string>
Hierarchy Level	[config mode]
Release Information	
Description	This flag disables or enables the interface for routing and forwarding.
Default false	
Options	string-this flag disables or enables the interfacee for routing and forwarding. It takes the value true or false
Related Topics	

Example:

```
XorPlus# set vlan-interface interface vlan.10 address 172.168.110.1 prefix-length 24
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.3.10 set vlans

3.3.10.1 description

Syntax	set vlans vlan-id < vlan-id > description < string >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the VLAN description
Default	
Options	string - Configure the description of the specified VLAN
Related Topics	

Example:

```
XorPlus# set vlans vlan-id 2 description "PICA SQA team"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show vlans vlan-id 2
VLAN ID: 2
Description: PICA SQA team
Number of member ports: 2
Tagged port: ge-1/1/2,  ge-1/1/3,
Untagged port: None

XorPlus#
```

3.3.10.2 vlan-name

Syntax	set vlans vlan-id < vlan-id > vlan-name < string >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the VLAN description
Default	
Options	string - Configure the name of the specified VLAN
Related Topics	

Example:

```
XorPlus# set vlans vlan-id 2 name "PICA SQA"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.3.10.3 l3-interface

Syntax	set vlans vlan-id < vlan-id > l3-interface < string >
Hierarchy Level	[config mode]
Release Information	
Description	Associate a Layer 3 interface with the VLAN.
Default	
Options	string -Associate a Layer 3 interface with an existing VLAN, allowed range: [vlan.1 ~ vlan.32]
Related Topics	

Example:

```
XorPlus# set vlans vlan-id 2 l3-interface vlan.2
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.4 Interface Configuration

aggregate-ethernet	Name of LAG interface (ae1..ae6)
ethernet-switching-options	Ethernet switching options
gigabit-ethernet	GigabitEthernet IEEE 802.3z
management-ethernet	Management ethernet
traceoptions	Configure the tracing options

3.4.1 set interface aggregate-ethernet

<[Enter]>	Execute this command
aggregated-ether-options	Aggregated Ethernet interface-specific options
disable	Disable the interface
family	Protocol family information

mtu	Maximum transmit packet size
static-ethernet-switching	Static Ethernet switching support
storm-control	Storm control configuration

3.4.1.1 aggregated-ether-options flow-control

Syntax	set interface aggregate-ethernet <lag-name> aggregated-ether-options < flow-control true |false >
Hierarchy Level [config mode]	
Release Information	
Description	Enable or disable the flow control in an aggregate-ethernet interface
Default	true
Options	if-name - Configure the interface lag-name - The specified aggregation interface which will be configured
Related Topics	

Example:

```
XorPlus# set interfaces aggregate-ethernet ae1 aggregated-ether-options flow-control true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.4.1.2 aggregated-ether-options lacp

Syntax	set interface aggregate-ethernet ae[1..6] aggregated-ether-options lacp <{enable true|false} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the LACP parameter of a aggregation interface.
Default	false
Options	enable - Enable the LACP in the specified LAG.
Related Topics	

Example:

```
XorPlus# set interface interface aggregate-ethernet ae1
aggregated-ether-options lacp enable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
```

```
XorPlus# run show lacp internal aggregate-ethernet ae1
LACP System ID: 32768, C8:0A:A9:03:49:1F
Aggregated interface: ae1
Port Number   Priority   Admin Key   Oper Key   State
-----------   --------   ---------   --------   -----
ge-1/1/1      128        0x35        0x01       0x05

XorPlus#
```

3.4.1.3 disable

Syntax	set interface aggregate-ethernet ae[1..6] disable [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	Disable the interface
Default	false
Options	enable - Enable the interface
Related Topics	

3.4.1.4 family

The sub command of ethernet-switching includes:

native-vlan-id	VLAN identifier to associate with untagged packets
port-mode	Types of switch ports
vlan	Bind an 802.1Q VLAN tag ID to a logical interface

3.4.1.5 native-vlan-id

Syntax	set interface aggregate-ethernet ae[1..6] family ethernet-switching native-vlan-id <vlan id>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the vlan parameter of a aggregation interface.
Default	
Options	
Related Topics	

3.4.1.6 native-vlan-id

Syntax	set interface aggregate-ethernet ae[1..6] family ethernet-switching port-mode [access|trunk]

Hierarchy Level	[config mode]
Release Information	
Description	Configure the port-mode of a aggregation interface.
Default	
Options	
Related Topics	

3.4.1.7 vlan

Syntax	set interface aggregate-ethernet ae[1..6] family ethernet-switching vlan members <vlan id>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the vlan memebr
Default	
Options	
Related Topics	

3.4.1.8 mtu

Syntax	set interface aggregate-ethernet ae[1..6] mtu [64..9216]
Hierarchy Level	[config mode]
Release Information	
Description	Configure the MTU parameter of a aggregation interface.
Default	
Options	
Related Topics	

3.4.1.9 static-ethernet-switching

Syntax	set interface aggregate-ethernet ae[1..6] static-ethernet-switching mac-address <mac address>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the static mac of a aggregation interface.
Default	
Options	

Related Topics	

3.4.1.10 storm-control

Syntax	set interface aggregate-ethernet ae[1..6] storm-control [broadcast|multicast|unicast] pps <max packet number>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the storm-control parameter of a aggregation interface.
Default	
Options	
Related Topics	

3.4.2 set interface ecmp_path_max

Syntax	set interface ecmp_path_max <path_num>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the maximum ecmp route paths in system. Configuration will be available after reboot.
Default	4
Options	path_num -- Configure the maximum ecmp route paths. Range: [2,4,8,16,32]
Related Topics	

Example:

```
XorPlus# set interface ecmp_path_max 8
[edit]
XorPlus# commit
Waiting for merging configuration.
Commit OK.
Save done.
[edit]
XorPlus# save running-to-startup
Save done.
[edit]
XorPlus# run request system reboot
```

3.4.3 set interface ethernet-switching-options

<[Enter]>	Execute this command
analyzer	Port mirroring, shall consist of letters and numerals

mac-table-aging-time	MAC aging time

3.4.3.1 analyzer

In current system, the output port of each analyzer is limited to 1. The mirror configuration tree is shown as following:

```
ethernet-switching-options {
   analyzer name{
              input {
               ingress {
                 interface (interface-name);
                  }
                 egress {
                     interface (interface-name);
              }
            }
         output {
           interface interface-name;
          }
        }
}
```

Syntax	set ethernet-switching-options analyzer <mirror-name>
Hierarchy Level	[config mode]
Release Information	
Description	Create a analyzer in the system
Default	
Options	mirror-name -- Configure the name of the mirror
Related Topics	

Example:

```
XorPlus# set ethernet-switching-options analyzer mirr1 output interface ge-1/1/3
[edit]

XorPlus# set ethernet-switching-options analyzer mirr1 input egress interface ge-1/1/1
[edit]
```

```
XorPlus# set ethernet-switching-options analyzer mirr1 input ingress interface ge-1/1/2
[edit]

XorPlus# commit
Commit OK.
Save done.
[edit]

[edit]
XorPlus#
```

3.4.3.2 set interface ethernet-switching-options analyzer mirror input

Syntax	input < ingress interface if-name | egress interface if-name >
Hierarchy Level	[config mode, edit ethernet-switching-options analyzer mirror]
Release Information	

Description	Configure the input(source) interface of the specified mirroring
	ethernet-switching-options {
	analyzer name{
	input {
	ingress {
	interface (interface-name);
	}
	egress {
	interface (interface-name);
	}
	}
	output {
	interface interface-name;
	}
	}
	}

Default	
Options	if-name - Configure the interface of the mirror
Related Topics	

Example:

```
XorPlus# edit ethernet-switching-options analyzer mirror
[edit ethernet-switching-options analyzer mirror]

XorPlus# set input ingress interface ge-1/1/5
[edit ethernet-switching-options analyzer mirror]

XorPlus#
```

3.4.3.3 set interface ethernet-switching-options analyzer mirror output

Syntax	output interface <if-name>
Hierarchy Level	[config mode, edit ethernet-switching-options analyzer mirror]
Release Information	

Description	Configure the output(destination) interface of the specified mirroring
	ethernet-switching-options {
	analyzer name{
	input {
	ingress {
	interface (interface-name);
	}
	egress {
	interface (interface-name);
	}
	}
	output {
	interface interface-name;
	}
	}
	}

Default	
Options	if-name - Configure the interface of the mirror
Related Topics	

Example:

```
XorPlus# edit ethernet-switching-options analyzer mirror
[edit ethernet-switching-options analyzer mirror]

XorPlus# set output nterface ge-1/1/5
[edit ethernet-switching-options analyzer mirror]

XorPlus#
```

3.4.4 set interface ethernet-switching-options mac-table-aging-time

Syntax	set interface ethernet-switching-options mac-table-aging-time <aging-time>
Hierarchy Level	[config mode]
Release Information	

Description	Configure the current level to the up level in the config mode
	ethernet-switching-options {
	mac-table-aging-time: aging-time
	}

Default	300 seconds
Options	aging-time - Configure the aging time of the FDB
Related Topics	

Example:

```
XorPlus# set interface ethernet-switching-options mac-table-aging-time 100
[edit]

XorPlus# show ethernet-switching table
Total entries in switching table:   5
Static entries in switching table:  0
Dynamic entries in switching table: 5
VLAN    MAC address          Type       Age     Interfaces
----    -----------------    -------    ----    ----------
1       00:22:be:96:f2:8d    Dynamic    100     ge-1/1/13
1       00:22:be:96:f2:8e    Dynamic    100     ge-1/1/14
1       00:22:be:96:f5:82    Dynamic    100     ge-1/1/26
```

3.4.5 set interface gigabit-ethernet

Syntax	set interface < gigabit-ethernet interface-name >
Hierarchy Level	[config mode]
Release Information	

Description	Configure the interface or aggregate interface
	
	gigabit-ethernet "ge-1/1/1" {
	mtu: 200
	ether-options {
	flow-control: false
	802.3ad: "ae1"
	}
	static-ethernet-switching {
	mac-address 22:22:22:22:22:22 {
	vlan 1
	}
	}
	family {
	ethernet-switching {
	port-mode: "trunk"
	vlan {
	members 1
	members 2
	}
	}
	}
	aggregate-ethernet ae1 {
	mtu: 200
	disable: true
	aggregated-ether-options {
	lacp {
	periodic: "slow"
	enable: true
	}
	flow-control: false
	}
	static-ethernet-switching {

	mac-address 22:22:22:33:33:33 {
	vlan 2
	}
	}
	family {
	ethernet-switching {
	native-vlan-id: 2
	port-mode: "trunk"
	vlan {
	members 3
	}
	}
	}
	}

Default	
Options	interface-name - Configure the specified ethernet interface. aggregate-name - Configure the specified aggregate interface
Related Topics	

Example:

```
XorPlus# set interface  gigabit-ethernet ge-1/1/1  family
ethernet-switching port-mode trunk
[edi|t]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show ethernet-switching interfaces ge-1/1/1
Interface   State   Tagging   Native VLAN   VLAN members
---------   -----   -------   -----------   ---------------
ge-1/1/1    up      tagged    1             1

XorPlus#
```

3.4.5.1 disable

Syntax	set interface gigabit-ethernet <if-name> disable <true | false>
Hierarchy Level	[config mode]
Release Information	
Description	Enable or disable the interface.
Default false	
Options	if-name - Configure the interface
Related Topics	

Example:

```
XorPlus# set interfaces gigabit-ethernet ge-1/1/1 disable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show interfaces interface gigabit-ethernet ge-1/1/1 brief is
participatePhysical interface: ge-1/1/1, Disabled, Physical link is Down
Interface index: 1
Link-level type: Ethernet, MTU: 1514, Speed: Auto, Duplex: Full
Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled
Interface flags: Hardware-Down SNMP-Traps Internal: 0x0

XorPlus#
```

3.4.5.2 ether-options

Syntax	set interfaces gigabit-ethernet <if-name> ether-options <{flow-control bool} | {802.3ad lag-name} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the ether options of the specified interface, including the flow-control and 802.3ad link aggregation.
Default	flow-control : true
Options	if-name - Configure the interface lag-name - The specified aggregation interface whichh the interface will be added in.
Related Topics	

Example:

```
XorPlus# set interfaces gigabit-ethernet ge-1/1/1 ether-options flow-control true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show interfaces interface gigabit-ethernet ge-1/1/1 brief is
participatePhysical interface: ge-1/1/1, Disabled, Physical link is Down
Interface index: 1
Link-level type: Ethernet, MTU: 1514, Speed: Auto, Duplex: Full
Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled
Interface flags: Hardware-Down SNMP-Traps Internal: 0x0

XorPlus#
```

3.4.5.3 mtu

Syntax	set interfaces gigabit-ethernet <if-name> mtu < mtu >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the maximum transmit unit (mtu) of the interface.
Default	1518
Options	if-name - Configure the interface mtu - Confiture the MTU of the interface.
Related Topics	

Example:

```
XorPlus# set interfaces gigabit-ethernet ge-1/1/1 mtu 200
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show interfaces interface gigabit-ethernet ge-1/1/1 brief is
participatePhysical interface: ge-1/1/1, Disabled, Physical link is Down
Interface index: 1
Link-level type: Ethernet, MTU: 200, Speed: Auto, Duplex: Full
Source filtering: Disabled, Flow control: Enabled, Auto-negotiation: Enabled
Interface flags: Hardware-Down SNMP-Traps Internal: 0x0

XorPlus#
```

3.4.5.4 static-ethernet-switching mac-address

Syntax	set interface gigabit-ethernet <if-name> static-ethernet-switching mac-address <mac> vlan <vid>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the static mac entry for specified interface
Default	
Options	if-name - Configure the interface mac - Configure the MAC address of the static MAC entry vid - Configure the VLAN-ID of the static
Related Topics	

Example:

```
XorPlus# set interfaces interface gigabit-ethernet ge-1/1/1
static-ethernet-switching mac-address 22:22:22:22:22:22 vlan 1
[edit]
XorPlus# commit
Commit OK.
Save done.
```

```
[edit]

XorPlus# run show ethernet-switching table
Total entries in switching table:   1
Static entries in switching table:  1
Dynamic entries in switching table: 0
VLAN    MAC address          Type       Age     Interfaces
----    -----------------    -------    ----    ----------
1       22:22:22:22:22:22    Static     300     ge-1/1/1

XorPlus#
```

3.4.5.5 family ethernet-switching

Syntax	set interfaces gigabit-ethernet <if-name> family ethernet-switching <{native-vlan-id vid} | {port-mode trunk | access} | {vlan members <vid>} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure VLAN parameter of specified interface, including the native VLAN ID, port mode and the VLANs which is belonged to.
Default	Port-mode : access Native-vlan-id :1
Options	if-name - Configure the interface vid - The VLAN ID port-mode - If a interface is configured as ACCESS mode, it can only forward the untagged frames. If a interface is configured as TRUNK mode, it can only forward the tagged frames.
Related Topics	

Example:

```
XorPlus# set interfaces interface gigabit-ethernet ge-1/1/1  family
ethernet-switching vlan members 1000
[edit]

XorPlus# set interfaces interface gigabit-ethernet ge-1/1/1  family
ethernet-switching port-mode trunk

XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show vlans vlan-id 1000
VLAN ID: 1000
Description:
Number of member ports: 1
Tagged port: ge-1/1/1
Untagged port: None
```

```
XorPlus#
```

3.4.6 set interface management-ethernet

include the following three sub config

address	Configure an IPv4 address and prefix length, for example: 192.168.1.2/24
dhcp	Enable or disable dhcp
gateway	Configure the gateway

3.4.6.1 set interface management-ethernet address

Syntax	set interfaces management-ethernet eth[0..1] address <addr>
Hierarchy Level	[config mode]
Release Information	
Description	set the management port address
Default	
Options	
Related Topics	

3.4.6.2 set interface management-ethernet dhcp

Syntax	set interfaces management-ethernet eth[0..1] dhcp [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	set the management port dhcp mode
Default	
Options	
Related Topics	

3.4.6.3 set interface management-ethernet gateway

Syntax	set interfaces management-ethernet eth[0..1] gateway <addr>
Hierarchy Level	[config mode]
Release Information	
Description	set the management port gateway
Default	
Options	
Related Topics	

3.4.7 set interfaces traceoptions

Syntax	set interfaces traceoptions flag all
Hierarchy Level	[config mode]
Release Information	
Description	Enable the debug information of the interface
Default	false
Options	
Related Topics	

Example:

```
XorPlus# set interfaces traceoptions flag all
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5 Protocol Configuration

igmp	Configure the IGMP protocol
igmp-snooping	Configure the igmp snooping
ipfix	Configure the IPFIX protocol
lacp	Link Aggregation Control Protocol
lldp	Link Layer Discovery Protocol 802.1AB
ospf4	Configure the OSPF protocol
ospf6	Configure the OSPF protocol
pimsm4	Configure the IPv4 PIM-SM protocol
rip	RIP configuration
ripng	RIPng configuration
rstp	Spanning Tree Protocol 802.1w
snmp	Simple network management protocol configuration
static	Configure static routes
vrrp	Configure VRRP

3.5.1 igmp

disable	Disable the IGMP protocol
interface	Configure IGMP on a network interface
traceoptions	Configure the tracing options

The following parameters could be configured by the user for the interface running igmp.

disable	Disable IGMP on an interface
enable-ip-router-alert-option-check	Enable the IP Router Alert option check
query-interval	Set the query interval (in seconds)
query-last-member-interval	Set the last member query interval (in seconds)
query-response-interval	Set the query response interval (in seconds)
robust-count	Set the robustness variable count
version	Set the IGMP protocol version

3.5.1.1 disable

Syntax	set protocols igmp interface <interface> disable [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	determines whether IGMP is disabled on this interface
Default	false
Options	
Related Topics	

3.5.1.2 enable-ip-router-alert-option-check

Syntax	set protocols igmp interface <interface> enable-ip-router-alert-option-check [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	this directive specifies whether the router should check that the link-local protocol packets received on this interface have the IP Router Alert option in them
Default	
Options	
Related Topics	

3.5.1.3 query-interval

Syntax	set protocols igmp interface <interface> query-interval [1..1024]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the interval (in seconds) between general queries sent by the querier on this interface
Default	125
Options	
Related Topics	

3.5.1.4 query-last-member-interval

Syntax	set protocols igmp interface <interface> query-last-member-interval [1..1024]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the maximum response time inserted into group-specific queries sent in response to leave group messages on this interface
Default	1
Options	
Related Topics	

3.5.1.5 query-response-interval

Syntax	set protocols igmp interface <interface> query-response-interval [1..1024]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the maximum response time inserted into the periodic general queries on this interface
Default	10
Options	
Related Topics	

3.5.1.6 robust-count

Syntax	set protocols igmp interface <interface> query-interval [1..1024]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the robustness variable count that allows tuning for the expected packet loss on a subnet on this interface
Default	2
Options	
Related Topics	

3.5.1.7 version

Syntax	set protocols igmp interface <interface> version [1..3]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the protocol version for this interface
Default	1

Options	
Related Topics	

3.5.2 igmp-snooping

enable	Enable the igmp-snooping module
last-member-query-count	Configure the last-member-query-count
last-member-query-interval	Configure the last-member-query-interval
max-response-time	Configure the max-response-time
query-interval	Configure the query-interval
report-suppression	Configure report suppression
robustness-variable	Configure the robustness-variable
router-aging-time	Configure the router-aging-time
traceoptions	Configure the tracing options
vlan-id	Configure the igmp-snooping in the VLAN

3.5.2.1 enable

Syntax	set protocols igmp-snooping enable [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	enable or disable igmp-snooping
Default	false
Options	
Related Topics	

3.5.2.2 last-member-query-count

Syntax	set protocols igmp-snooping last-member-query-count [1..7]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the query count for the last memeber
Default	2
Options	
Related Topics	

3.5.2.3 last-member-query-interval

Syntax	set protocols igmp-snooping last-member-query-interval [1..32]
Hierarchy Level	[config mode]

Release Information	
Description	specifies the the query internal for the last member
Default	2
Options	
Related Topics	

3.5.2.4 max-response-time

Syntax	set protocols igmp-snooping max-response-time [1..25]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the max response time
Default	10
Options	
Related Topics	

3.5.2.5 query-interval

Syntax	set protocols igmp-snooping query-interval [1..18000]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the query internal in seconds
Default	60
Options	
Related Topics	

3.5.2.6 report-suppression

Syntax	set protocols igmp-snooping report-suppression [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	enable or disable report suppression
Default	false/disable
Options	
Related Topics	

3.5.2.7 robustness-variable

Syntax	set protocols igmp-snooping robustness-variable [2..4]

Hierarchy Level	[config mode]
Release Information	
Description	specifies the robustness variable
Default	2
Options	
Related Topics	

3.5.2.8 router-aging-time

Syntax	set protocols igmp-snooping router-aging-time [1..1000]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the router aging time
Default	260
Options	
Related Topics	

3.5.2.9 traceoptions

Syntax	set protocols igmp-snooping traceoptions flag [all|config|input|output|state-machine] disbale [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	enable or disable the component tracing
Default	1
Options	
Related Topics	

3.5.2.10 vlan-id

Syntax	set protocols igmp-snooping vlan-id [1..4094]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the vlan id
Default	
Options	
Related Topics	

3.5.3 ipfix

collector	IPFIX collector address
interfaces	Configure IPFIX on interfaces
traceoptions	Configure the tracing options

3.5.3.1 collector

Syntax	set protocols ipfix collector <IPv4>
Hierarchy Level	[config mode]
Release Information	
Description	specifies the collector IP address
Default	
Options	
Related Topics	

3.5.3.2 interfaces

max-entries	Maximum number of flow entry collected for this interface
max-idle-time	Flow will be exported and terminated if idle for more than max-idle-time seconds
max-time	Flow will not be exported unless being established for less than max-time seconds
min-time	Flow will not be exported unless being established for more than min-time seconds
sample-rate	Collect one packet info for every sample-rate packets

max-entries

Syntax	set protocols ipfix interfaces [egress|ingress] max-entries [128..8000]
Hierarchy Level	[config mode]
Release Information	
Description	Specify the max number of flow entry collected for this interface
Default	
Options	
Related Topics	

max-idle-time

Syntax	set protocols ipfix interfaces [egress|ingress] max-idle-time [1..300]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the max idle time in seconds for this interface
Default	
Options	

Related Topics	

max-time

Syntax	set protocols ipfix interfaces [egress|ingress] max-time [1..300]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the flow to be exported should be less than the max-time
Default	
Options	
Related Topics	

min-time

Syntax	set protocols ipfix interfaces [egress|ingress] min-time [1..300]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the flow to be exported should be more than the min-time
Default	
Options	
Related Topics	

sample-rate

Syntax	set protocols ipfix interfaces [egress|ingress] sample-rate [1..1000000]
Hierarchy Level	[config mode]
Release Information	
Description	specifies the sample rate
Default	
Options	
Related Topics	

3.5.3.3 traceoptions

Syntax	set protocols ipfix traceoptions flag all disbale [true|false]
Hierarchy Level	[config mode]
Release Information	
Description	enable or disable the trace option
Default	
Options	
Related Topics	

3.5.4 lacp

3.5.4.1 lacp priority

Syntax	set protocols lacp priority < priority >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the global LACP priority of the system
Default	32768
Options	priority - Configure the global LACP priority of all interfaces
Related Topics	

Example:

```
XorPlus# set protocols lacp priority 1000
[edit]
XorPlus# commit
Commit OK.
Save done.

[edit]
XorPlus# run show lacp internal aggregate-ethernet ae1
LACP System ID: 1000,C8:0A:A9:03:49:1F
Aggregated interface: ae1
Port Number   Priority   Admin Key   Oper Key   State
-----------   --------   ---------   --------   -----
ge-1/1/1      128        0x35        0x01       0x05

XorPlus#
```

3.5.4.2 gigabit-interface <if-name> priority

Syntax	set protocols lacp gigabit-interface < if-name > priority < priority >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the LACP priority for a specified interface
Default	128
Options	priority - Configure the LACP priority for a specified interfaces
Related Topics	

Example:

```
XorPlus# set protocols lacp gigabit-interface ge-1/1/1 priority 100
[edit]
root@bdc-sqa-03# commit
Commit OK.
Save done.
[edit]
```

```
XorPlus# run show lacp internal aggregate-ethernet ae1
LACP System ID: 32768,C8:0A:A9:03:49:1F
Aggregated interface: ae1
Port Number   Priority   Admin Key   Oper Key   State
-----------   --------   ---------   --------   -----
ge-1/1/1      100        0x35        0x01       0x05

XorPlus#
```

3.5.5 lldp

3.5.5.1 lldp advertisement-interval

Syntax	set protocols lldp advertisement-interval < interval >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the advertisement of the LLDP interval
Default	30
Options	interval - Configure the LLDP PDU advertisement interval range: [5..32768]
Related Topics	

Example:

```
XorPlus# set protocols lldp advertisement-interval 100
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

    XorPlus# run show lldp detail
    LLDP: Enable
    Advertisement interval: 100
    Re-initialization Delay: 2
    Transmit Delay: 2
    Hold timer: 120
    Selected TLVs:
    port_description
    system_name
    system_description
    system_capabilities
    management_address
    port_vlan_id
    mac_phy

    XorPlus#
```

3.5.5.2 enable

Syntax	set protocols lldp enable < true | false >
Hierarchy Level	[config mode]
Release Information	
Description	Enable or disable the LLDP protocol.
Default true	
Options	
Related Topics	

Example:

```
XorPlus# set protocols lldp enable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show lldp detail
LLDP: Enable
Advertisement interval: 100
Re-initialization Delay: 2
Transmit Delay: 2
Hold timer: 120
Selected TLVs:
  port_description
  system_name
  system_description
  system_capabilities
  management_address
  port_vlan_id
  mac_phy

XorPlus#
```

3.5.5.3 hold-time-multiplier

Syntax	set protocols lldp hold-time-multiplier <multiplier>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the LLDP hold time multiplier. The LLDP neighbor entry expired timer will be calculated by: hold-time-multiplier * advertisement-interval
Default	4
Options	
Related Topics	

Example:

```
XorPlus# set protocols lldp hold-time-multiplier 20
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show lldp detail
LLDP: Enable
Advertisement interval: 30
Re-initialization Delay: 2
Transmit Delay: 2
Hold timer: 600
Selected TLVs:
  port_description
  system_name
  system_description
  system_capabilities
  management_address
  port_vlan_id
  mac_phy

XorPlus#
```

3.5.5.4 interface <if-name> status

Syntax	set protocols lldp interface <if-name> status <disabled | tx_only |rx_only | tx_rx >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the specified interface's LLDP admin status
Default	tx_rx
Options	Disable - The LLDP will be disabled in this interface. tx_only - The interface will only send out the LLDPP PDU and will not accept any LLDP PDU rx_only - The interface will only accept the LLDP PDUU and will not send out any LLDP PDU tx_rx - The interface will send out and accept thee LLDP PUD both.
Related Topics	

Example:

```
XorPlus# set protocols lldp interface ge-1/1/1 status tx_rx
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show lldp local_info
LLDP Local configuration details
Chassis ID: c8:a:a9:3:49:1f
```

```
System name: Pica8 Switch
System description: Pica8 Switch
Interface     LLDP         State
----------    ---------    ---------
ge-1/1/1      Enable       tx_rx
ge-1/1/2      Enable       tx_rx
ge-1/1/3      Enable       tx_rx
ge-1/1/4      Enable       tx_rx

XorPlus#
```

3.5.5.5 reinit-delay

Syntax	set protocols lldp reinit-delay < delay-time >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the LLDP delay time after the LLDP initial.
Default	2
Options	delay-time - Configure the delay time when LLDP initial
Related Topics	

Example:

```
XorPlus# set protocols lldp reinit-delay 3
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show lldp detail
LLDP: Enable
Advertisement interval: 30
Re-initialization Delay: 3
Transmit Delay: 2
Hold timer: 120
Selected TLVs:
  port_description
  system_name
  system_description
  system_capabilities
  management_address
  port_vlan_id
  mac_phy

XorPlus#
```

3.5.5.6 tlv-select

Syntax	set protocols lldp tlv-select <mac-phy-cfg | management-address |port-description | port-vlan | system-capabilities | system-description |system-name > <bool>

Hierarchy Level	[config mode]
Release Information	
Description	Configure the LLDP tlv-select which will be included in the LLDP PDU.
Default	true
Options	mac-phy-cfg - Interface parameter in MAC and physical management-address - The system management address,, usually, it is the IP address of the system. port-description - The description of the interface. port-vlan - The VLAN IDs which include the interface system-capabilities - The capabilities of the system,, including router,switch, VoIP Phone, etc. system-description - The description of the system. system-name -- The name of the system
Related Topics	

Example:

```
XorPlus# set protocols lldp tlv-select mac-phy-cfg false
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show lldp detail
LLDP: Enable
Advertisement interval: 30
Re-initialization Delay: 2
Transmit Delay: 2
Hold timer: 120
Selected TLVs:
  port_description
  system_name
  system_description
  system_capabilities
  management_address
  port_vlan_id

XorPlus#
```

3.5.5.7 transmit-delay

Syntax	set protocols lldp transmit-delay < delay-time >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the LLDP PDU delay time when the system need to send a new LLDP PDU.
Default	2 second
Options	delay-time - The delay time before the system send a new LLDP PDU

Related Topics	

Example:

```
XorPlus# set protocols lldp transmit-delay 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show lldp detail
LLDP: Enable
Advertisement interval: 30
Re-initialization Delay: 10
Transmit Delay: 2
Hold timer: 120
Selected TLVs:
  port_description
  system_name
  system_description
  system_capabilities
  management_address
  port_vlan_id
  mac_phy

XorPlus#
```

3.5.6 ospf4

```
An example of OSPF configuration tree is shown as following:


ospf4 {
               router-id: IPv4
               rfc1583-compatibility: bool;
               ip-router-alert: bool
               traceoptions {
                   flag {
                       all {
                           disable: bool
                       }
                   }
                }
               area IPv4 {
               area-type: text
               default-lsa {
                   disable: bool
                   metric: uint(0..0xffffff)
               }
               summaries {
                   disable: bool
               }
               area-range IPv4Net {
                   advertise: bool
               }
               virtual-link IPv4 {
                   transit-area: ipv4
                   hello-interval: uint(1..65535)
                   router-dead-interval: uint(1..65535)
                   retransmit-interval: uint(1..65535)
                   transit-delay: uint(0..3600)
                   authentication {
                       simple-password: text
                       md5 uint(0..255) {
                           password: text
                           start-time: text("YYYY-MM-DD.HH:MM")
                           end-time: text("YYYY-MM-DD.HH:MM")
                           max-time-drift: uint(0..65535)
                       }
                   }
               }
               interface text {
                   link-type: text
                   address IPv4 {
                       priority: uint(0..255)
                       hello-interval: uint(1..65535)
                       router-dead-interval: uint(1..4294967295)
                       interface-cost: uint(1..65535)
                       retransmit-interval: uint(1..65535)
                       transit-delay: uint(0..3600)
                       authentication {
                           simple-password: text
                           md5 uint(0..255) {
```

```
                            password: text
                            start-time: text("YYYY-MM-DD.HH:MM")
                            end-time: text("YYYY-MM-DD.HH:MM")
                            max-time-drift: uint(0..65535)
                        }
                    }
                    passive {
                        disable: bool
                        host: bool
                    }
                    neighbor IPv4{
                        router-id: IPv4
                    }
                    disable: bool
                }
            }
            import: text
            export: text
        }
```

3.5.6.1 router-id

Syntax	set protocols ospf4 router-id <router-id>
Hierarchy Level	[config mode]
Release Information	
Description	Configure an router-id for ospf protocol.
Default	
Options	router-id -This is a unique four octet ID within thee Autonomous System. The numerically smallest IP address of an interface belonging to the router is a good choice. The required format of the router-id is a dotted-decimal IPv4 address
Related Topics	

Example:

```
XorPlus# set protocols ospf4 router-id 172.168.10.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.2 area

Syntax	set protocols ospf4 area <area-id>
Hierarchy Level	[config mode]

Release Information	
Description	Specify the area identifier for this router to use when participating in OSPF routing. All routers in an area must use the same area identifier to establish adjacencies. Specify multiple area statements to configure the router as an area border router. An area border router does not automatically summarize routes between areas; use the area-range statement to configureroute summarization. By definition, an area border router must be connected to the backbone area either through a physical link or through a virtual link. To create a virtual link, include the virtual-link statement.
Default	
Options	area-id -Area identifier. The identifier can be up too 32 bits. It is common to specify the area number as a simple integer oran IP address. Area number 0.0.0.0 is reserved for the OSPF.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.3 area-type

Syntax	set protocols ospf4 area <area-id > area-type <normal|nssa|stub>
Hierarchy Level	[config mode]
Release Information	
Description	This is the type of the area.
Default	The default is noraml
Options	normal -OSPF normal area,ospf default area type. nssa -An NSSA allows external routes to be floodedd within the area. These routes are then leaked into other areas. stub -Specify that this area not be flooded with ASs external link-state advertisements. You must include the stub statement when configuring all routers that are in the stub area. The backbone cannot be configured as a stub area.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 area-type normal
[edit]
XorPlus# commit
Commit OK.
```

```
Save done.
[edit]
XorPlus#
```

3.5.6.4 default-lsa

Syntax	set protocols ospf4 area <area-id > default-lsa <disablel|metric>
Hierarchy Level	[config mode]
Release Information	
Description	On area border routers only, for NSSA or stub, inject a default LSA with a specified metric value into the area. The default route matches any destination that is not explicitly reachable from within the area.
Default	
Options	disable -This takes the value true or false. Thee default setting is false it can be set to true to disable the sending of thedefault-lsa. metric -Cost of the route. Range: 1 through 65,535.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 default-lsa disable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.5 summaries

Syntax	set protocols ospf4 area <area-id > summaries <disable>
Hierarchy Level	[config mode]
Release Information	
Description	Configure whether area border routers advertise summary routes into NSSA or stub.
Default	
Options	disable -This takes the value true or false. • false -Flood summary LSAs into the NSSA. • true -Prevent area border routers from advertisingsu summaries into an NSSA or stub.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 summaries disable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.6 area-range

Syntax	set protocols ospf4 area <area-id > area-range < network/mask-length > advertise <true|false>
Hierarchy Level	[config mode]
Release Information	
Description	For an area, summarize a range of IP addresses when sending summary link advertisements.
Default	
Options	network -IP address. You can specify one or more IP addresses. mask-length -Number of significant bits in the network mask. false -(Optional) Do not advertise the configuredd summary. This hides all routes that are contained within the summary, effectively creating a route filter. true -(Optional) Summarization of a route iss advertised only when an exact match is made with the configured summary range.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 area-range 172.168.10.0/24 advertise true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.7 virtual-link

Syntax	set protocols ospf4 area <area-id > virtual-link <router-id>
Hierarchy Level	[config mode]
Release Information	

Description	For backbones only, create a virtual link to use in place of an actual physical link. All area border routers and other routers on the backbone must be contiguous. If this is not possible and there is a break in OSPF connectivity, use virtual links to create connectivity to the OSPF backbone. When configuring virtual links, you must configure links on the two routersthat form the end points of the link, and both these two routers must be area border routers. You cannot configure links through stub areas.
Default	
Options	router-id -IP address of the router at the remote endd of the virtual link.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 area-range 172.168.10.0/24 advertise true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.8 interface

Syntax	set protocols ospf4 area <area-id > interface <if-name > <address|link-type>
Hierarchy Level	[config mode]
Release Information	
Description	Enable OSPF routing on a router interface. You must include at least one interface statement in the configuration to enable OSPF on the router.
Default	
Options	if-name -The parameter is the name of the interface.R Range [vlan.1..vlan.32] address -This specifies an IPv4 address that should bee used by OSPF for routing. link-type -The software chooses the correct interfacee type based on the type of physical interface. • broadcast -broadcast multi-access interface. • p2m -Point-to-multipoint interface. • p2p -Point-to-point.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1
[edit]
XorPlus# commit
Commit OK.
Save done.
```

```
[edit]
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 link-type broadcast
```

3.5.6.9 transit-area

Syntax	set protocols ospf4 area <area-id > virtual-link <router-id> transit-area <area-id>
Hierarchy Level	[config mode]
Release Information	
Description	This is the transit area through which the virtual link is formed.
Default	
Options	area-id -Area identifier of the area through which thee virtual link transits. Virtual links are not allowed to transit the backbone area
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 virtual-link 172.168.10.1 transit-area 0.0.0.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.10 priority

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> priority <number>
Hierarchy Level	[config mode]
Release Information	
Description	Specify the router's priority for becoming thee designated router. The router that has the highest priority value on the logical IP network or subnet becomes the network's designated router. Youu must configure at least one router on each logical IP network or subnet to be the designated router. You also should specify a router's priority forr becoming the designated router on point-to-point interfaces.
Default	Default:128
Options	number -Router's priority for becoming the designeded router. A priority value of 0 means that the router never becomes the designated router. A value of 1 means that the router has the least chance of becoming a designated router. Range: 0 through 255.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 priority 32
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.11 hello-interval

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> hello-interval <seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Specify how often the router sends hello packets out the interface. The hello interval must be the same for all routers on a shared logical IP network.
Default	Default:10 seconds
Options	seconds -Time between hello packets, in seconds. Range: 1 through 255 seconds
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 hello-interval 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.12 router-dead-interval

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> router-dead-interval <seconds>
Hierarchy Level	[config mode]
Release Information	
Description	This is the time in seconds to wait before considering a neighbor dead.
Default	Default:40 seconds
Options	seconds -Hold-time value. Range: 1 through 65,535 seconds
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 router-dead-interval 40
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.13 interface-cost

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> interface-cost <cost>
Hierarchy Level	[config mode]
Release Information	
Description	Specify the cost of an OSPF interface. The cost is a routing metric that is used in the link-state calculation.
Default	
Options	cost -Cost of the route. Range: 1 through 65,535
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 interface-cost 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.14 retransmit-interval

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> retransmit-interval <seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Specify how long the router waits to receive a link-state acknowledgment packet before retransmitting link-state advertisements to an interface's neighbors.
Default	Default: 5 seconds
Options	seconds -Interval to wait. Range: 1 through 65,535 seconds
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 retransmit-interval 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.15 transit-delay

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> transit-delay <seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Set the estimated time required to transmit a link-state update on the interface. When calculating this time, make sure to account for transmission and propagation delays. You should never have to modify the transit delay time.
Default	Default: 1 seconds
Options	seconds -Estimated time, in seconds. Range: 1 through 65,535 seconds
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 transit-delay 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.16 passive

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> passive <disable|host>
Hierarchy Level	[config mode]
Release Information	
Description	Advertise the direct interface addresses on an interface without actually running OSPF on that interface. A passive interface is one for which the address information is advertised as an internal route in OSPF, but on which the protocol does not run
Default	
Options	disable -This takes the value true or false. The default is false. host -This takes the value true or false. The defaultt is to send a network not a host route, setting host to true will send ahost route.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 transit-delay 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.17 neighbor

Syntax	set protocols ospf4 area <area-id > interface <if-name> address <ipv4> neighbor <ipv4> router-id <router-id>
Hierarchy Level	[config mode]
Release Information	
Description	For p2m or p2p interfaces only, specify neighboring routers.
Default	
Options	ipv4 -The parameter is the IPv4 address of the neighbor. router-id -The router-id of the neighbor must also be configured.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 neighbor 192.168.10.2 router-id 10.1.1.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.18 disable

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> disable <true|false>
Hierarchy Level	[config mode]
Release Information	
Description	Disable OSPF, an OSPF interface.
Default	
Options	The configured object is enabled (operational) unless explicitly disabled.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 disable true
[edit]
XorPlus# commit
Commit OK.
```

```
Save done.
[edit]
XorPlus#
```

3.5.6.19 authentication md5

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> authentication md5 <key-id> <end-time|password|start-time>
Hierarchy Level	[config mode]
Release Information	
Description	Configure an authentication key (password). Neighboring routers use the password to verify the authenticity of packets sent from this interface
Default	
Options	key-id -Use the MD5 algorithm to create an encodedd checksum of the packet. The encoded checksum is included in the transmitted packet. The receiving router uses the authentication key to verify the packet, discarding it if the digest does not match. This algorithm provides a more secure authentication scheme. end-time -this specifies the end time when the keyy becomes inactive. The format is "---------MM-DD.HH:MM". If it is empty, then the key should never expire. start-time -this specifies the start time when the keyy becomes active. The format is "---------MM-DD.HH:MM". If it is empty, then the key should become active immediately. password -Authentication password. If the password does not match, the packett is rejected.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 authentication md5 1 password rippassword
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.20 authentication simple-password

Syntax	set protocols ospf4 area <area-id > interface <if-name > address <ipv4> authentication simple-password < simple-password >
Hierarchy Level	[config mode]
Release Information	
Description	Configure an authentication key (password). Neighboring routers use the password to verify the authenticity of packets sent from this interface
Default	
Options	simple-password -Use a simple password. The passwordd is included in the transmitted packet, which makes this method of authentication relatively insecure

Related Topics	

Example:

```
XorPlus# set protocols ospf4 area 0.0.0.0 interface vlan.10 address 192.168.10.1 authentication simple-password rippassword
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.21 export

Syntax	set protocols ospf4 export <policy-name>
Hierarchy Level	[config mode]
Release Information	
Description	Apply one or more policies to routes being exported from the routing table into OSPF.
Default	
Options	policy-names -Name of one or more policies.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 export rip
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.6.22 import

Syntax	set protocols ospf4 import <policy-name>
Hierarchy Level	[config mode]
Release Information	
Description	Filter OSPF routes from being added to the routing table.
Default	
Options	policy-names -Name of one or more policies.
Related Topics	

Example:

```
XorPlus# set protocols ospf4 import test
[edit]
XorPlus# commit
Commit OK.
Save done.
```

```
[edit]
XorPlus#
```

3.5.7 ospf6

Please refer to ospf4 for more details.

3.5.8 pimsm4

bootstrap	Configure the IPv4 Bootstrap mechanism
disable	Disable the IPv4 PIM-SM protocol
interface	Configure IPv4 PIM-SM on a network interface
static-rps	Configure the set of static RPs
switch-to-spt-threshold	Configure the shortest-path switch threshold
traceoptions	Configure the tracing options

3.5.8.1 bootstrap

cand-bsr	Configure this router as a Candidate-BSR
cand-rp	Configure this router as a Candidate-RP
disable	Disable the IPv4 Bootstrap mechanism

cand-bsr scope-zone <IPv4Net>

bsr-priority	Configure the Candidate-BSR priority
cand-bsr-by-vif-addr	Specify the virtual interface's address to use as the Candidate-BSR
cand-bsr-by-vif-name	Specify the virtual interface with the address of the Candidate-BSR
hash-mask-len	Configure the hash mask length for the hash function
is-scope-zone	Flag to indicate a scoped or global zone

cand-rp group-prefix <IPv4Net>

cand-rp-by-vif-addr	Specify the virtual interface's address to use as the Candidate-RP
cand-rp-by-vif-name	Specify the virtual interface with the address of the Candidate-RP
is-scope-zone	Flag to indicate a scoped or global zone
rp-holdtime	Configure the Candidate-RP holdtime (in seconds)
rp-priority	Configure the Candidate-RP priority

disable Disable the bootstrap function

3.5.8.2 disable

Enable or disable PIM-SM

3.5.8.3 interface

alternative-subnet	Fake a subnet to appear directly-connected
disable	Disable IPv4 PIM-SM on an interface

dr-priority	Set the Designated Router election priority
hello-period	Set the Hello messages period (in seconds)
hello-triggered-delay	Set the randomized triggered delay of the Hello messages (in seconds)

3.5.8.4 static-rps

3.5.8.5 switch-to-spt-threshold

bytes	The bandwidth threshold (in bytes) per interval
disable	Disable the shortest-path switching
interval	The frequency of measuring the bandwidth threshold (sec)

3.5.8.6 traceoptions

3.5.9 rip

Syntax	static {
	route IPv4-addr/netmask_length {
	next-hop: IPv4-addr
	metric: uint
	qualified-next-hop IPv4-addr {
	metric: uint
	}
	}
	interface-route IPv4-addr/netmask_length {
	next-hop-interface: text
	next-hop-router: IPv4-addr
	metric: uint
	qualified-next-interface text {
	next-hop-router: IPv4-addr
	metric: uint
	}
	}
	}

Hierarchy Level	[config mode]
Release Information	

Description	This delimits the RIP configuration part of the XorPlus router configuration.
	rip {
	targetname: text
	export: text
	interface text {
	address IPv4 {
	metric: uint
	horizon: text
	disable: bool
	passive: bool
	accept-non-rip-requests: bool
	accept-default-route: bool
	route-timeout: uint
	deletion-delay: uint
	triggered-delay: uint
	triggered-jitter: uint
	update-interval: uint
	update-jitter: uint
	request-interval: uint
	interpacket-delay: uint
	authentication {
	simple-password: text
	md5 uint(0..255) {
	password: text
	start-time: text("-------MM-DD.HH:MM")
	end-time: text("-------MM-DD.HH:MM")
	}
	}
	}
	}
	}

Default	
Options	
Related Topics	

Example:

```
TODO: Please add output here.
```

3.5.9.1 export

Syntax	set protocols rip export <text>
Hierarchy Level	[config mode]
Release Information	
Description	Filters act upon routes just before they are advertised by a routing protocol.
Default	
Options	text-Export policy name.
Related Topics	

Example:

```
XorPlus# set protocols rip export connect
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.2 interface

Syntax	set protocols rip interface <l3-interface> address <ipv4>
Hierarchy Level	[config mode]
Release Information	
Description	This specifies a network interface that should be used by RIP for routing.
Default	
Options	l3-interface-The parameter is the name of the interface. Ipv4-This specifies an IPv4 address that should be used by RIP for routing.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.3 address

Syntax	set protocols rip interface <l3-interface> address <ipv4>
Hierarchy Level	[config mode]
Release Information	
Description	This specifies an IPv4 address that should be used by RIP for routing.
Default	
Options	Ipv4-An IPv4 address.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
```

```
XorPlus#
```

3.5.9.4 metric

Syntax	set protocols rip interface <l3-interface> address <ipv4> metric <metric>
Hierarchy Level	[config mode]
Release Information	
Description	This specifies the metric or cost associated with routes received on this address.
Default	
Options Related Topics	metric-The metric is added to the cost in routes received beforee deciding between best routes to the same destination subnet. metric should be an integer between 1 and 15. Note that 15 is regarded as infinity as far as RIP is concerned. The sum of all the metrics across the entire RIP domain should be less than 15. Rang:[1..15]

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 metric 10
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.5 horizon

Syntax	set protocols rip interface <l3-interface> address <ipv4> horizon <horizon>
Hierarchy Level	[config mode]
Release Information	
Description	this specifies how RIP deals with eliminating routes quickly after a path has failed.
Default	split-horizon-poison-reverse
Options	none- No horizon type split-horizon- Split horizon split-horizon-poison-reverse- Split horizon with poisoned reverse
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 horizon none
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
```

```
XorPlus#
```

3.5.9.6 disable

Syntax	set protocols rip interface <l3-interface> address <ipv4> disable <disable>
Hierarchy Level	[config mode]
Release Information	
Description	Determines whether RIP will exchange routes via this address.
Default	The default is false
Options	this takes the value true or false. Setting this to true allows routes received via an address to be temporarily removed without deleting the configuration. The default is false.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 disable false
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.7 passive

Syntax	set protocols rip interface <l3-interface> address <ipv4> passive <passive>
Hierarchy Level	[config mode]
Release Information	
Description	Determines whether RIP runs in passive mode on this address.
Default	The default is false
Options	This takes the value true or false. Setting this to true allows routes received via an In passive mode, RIP will accept routes received on this address, but will not advertise any routes to neighbors via this address. The default is false.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 passive false
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.8 accept-non-rip-requests

Syntax	set protocols rip interface <l3-interface> address <ipv4> accept-non-rip-requests < accept-non-rip-requests>
Hierarchy Level	[config mode]
Release Information	
Description	Normal RIPv2 requests for routing updates are multicast to all neighbors and sourced from the RIP port. However for monitoring purposes RIP also allows requests to be unicast, and then they can be sourced from non-RIP ports. When this option is true, RIP will accept RIP requests from any UDP port.
Default	The default is true
Options	This takes the value true or false. The default is true.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 accept-non-rip-requests true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.9 accept-default-route

Syntax	set protocols rip interface <l3-interface> address <ipv4> accept-default-route < accept-default-route>
Hierarchy Level	[config mode]
Release Information	
Description	indicates whether RIP should accept a default route if it receives one from a RIP neighbor
Default	The default is false.
Options	This takes the value true or false. The default is false.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 accept-default-route true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.10 route-timeout

Syntax	set protocols rip interface <l3-interface> address <ipv4> route-timeout < seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the route timeout interval for RIP.
Default	Default: 180 seconds.
Options	seconds -If no periodic or triggered update of a routee from this neighbor has been received for this time interval, the route is considered to have expired. Range: 60 through 360 seconds.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 route-timeout 240
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.11 deletion-delay

Syntax	set protocols rip interface <l3-interface> address <ipv4> deletion-delay < seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the deletion delay interval for RIP.
Default	Default: 120 seconds.
Options	seconds -After a route has expired (the route has ann infinite metric), a router must keep a copy of it for a certain time so it can have a reasonably confidence that it has told its neighbors that the route has expired 4. This time interval determines how long the router maintains expird routes after their metric has reached infinity. Range: 60 through 360 seconds.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 deletion-delay 280
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.12 triggered-delay

Syntax	set protocols rip interface <l3-interface> address <ipv4> triggered-delay < seconds>
Hierarchy Level	[config mode]

Release Information	
Description	Configure the triggered delay interval for RIP.
Default	Default: 3 seconds.
Options	seconds -When a router receives a modified route fromm a neighbor, it does not have to wait until the next periodic update to tell the other neighbors, but instead sends a triggered update. After a triggered update is sent, a timer is set for a random interval between (triggered-delay - triggered-delay * triggered-jitter / 100) and (triggered-delay+ triggered-delay * triggered-jitter / 100). If other changes occur that would trigger updates before the timer expires, a single update is triggered when the timer expires. Thedefault value of triggered-delay is 3 second, and should not normally need to be changed. Range: 1 through 180 seconds.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 triggered-delay 5
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.13 triggered-jitter

Syntax	set protocols rip interface <l3-interface> address <ipv4> triggered-jitter < percent>
Hierarchy Level	[config mode]
Release Information	
Description	Configure the triggered jitter for RIP.
Default	Default: 66
Options	seconds -See triggered-delay for details. The defaultt is 66 percents(i.e.,triggered-delay would be inthe interval [1..5] seconds), and should not normally need to be changed. Range: 0 through 100.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 triggered-jitter 100
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.14 update-interval

Syntax	set protocols rip interface <l3-interface> address <ipv4> update-interval < seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Configure an update time interval to periodically send out routes learned by RIP to neighbors.
Default	Default: 30 seconds
Options	seconds -A RIP router will typically tell itss neighbors its entire routing table every 30 seconds. Toavoid self-synchronization of routing updates, the precise time interval between telling each neighborabout routing updates is randomly jittered, with the delay chosen uniformly at random between (update-interval - update-interval * update-jitter/ 100) and (update-interval + update-interval * update-jitter / 100). The default for update-interval is 30 seconds, and should not normally need to be changed. Range: 10 through 60 seconds.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 update-interval 20
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.15 update-jitter

Syntax	set protocols rip interface <l3-interface> address <ipv4> update-jitter < percent>
Hierarchy Level	[config mode]
Release Information	
Description	Configure an update jitter to periodically send out routes learned by RIP to neighbors.
Default	Default: 16
Options	seconds -See update-interval for details. The defaultt is 16 percents,(i.e.,update-jitter would be in the interval [25..35] seconds), and should not normally need to be changed. Range: 0 through 100.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 update-jitter 20
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.16 request-interval

Syntax	set protocols rip interface <l3-interface> address <ipv4> update-interval < seconds>
Hierarchy Level	[config mode]
Release Information	
Description	Configure an request time interval to periodically send to request for a route update by RIP to neighbors.
Default	Default: 30 seconds
Options	seconds -When a RIP router has no neighbors on aa address, it may periodically send a request for a route update in case a neighbor appears 7. This timer determines how often such a request is re-sent. The default value is 30 seconds. If the timer's value is 0, then the periodic requests are not sent. Range: 0 through 10000 seconds.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 request-interval 40
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.17 interpacket-interval

Syntax	set protocols rip interface <l3-interface> address <ipv4> interpacket-interval < milliseconds>
Hierarchy Level	[config mode]
Release Information	
Description	Configure an minimum delay between outbound RIP packets.
Default	Default: 50 milliseconds
Options	milliseconds -This specifies the default delay betweent back-to-back RIP packets when an update is sent that requires multiple packets to be sent 8. The default is 50 milliseconds, and should not normally need to be changed. Range: 0 through 10000 milliseconds.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 interpacket-interval 100
[edit]
XorPlus# commit
Commit OK.
Save done.
```

```
[edit]
XorPlus#
```

3.5.9.18 authentication md5

Syntax	set protocols rip interface <l3-interface> address <ipv4> authentication md5 <key-id> <end-time|password|start-time>
Hierarchy Level	[config mode]
Release Information	
Description	Configure require authentication md5 for RIP route queries received on an interface.
Default	
Options	key-id -Use the MD5 algorithm to create an encodedd checksum of the packet. The encoded checksum is included in the transmitted packet. The receiving router uses the authentication key to verify the packet, discarding it if the digestdoes not match. This algorithm provides a more secure authentication scheme. end-time -this specifies the end time when the keyy becomes inactive. The format is "---------MM-DD.HH:MM". If it is empty, then the key should never expire. start-time -this specifies the start time when the keyy becomes active. The format is "---------MM-DD.HH:MM". If it isempty, then the key should become active immediately. password -Authentication password. If the passwordd does not match, the packet is rejected.
Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 authentication md5 1 password rippassword
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.9.19 authentication simple-password

Syntax	set protocols rip interface <l3-interface> address <ipv4> authentication simple-password <simple-password>
Hierarchy Level	[config mode]
Release Information	
Description	Configure require authentication simple-password for RIP route queries received on an interface.
Default	
Options	simple-password -Use a simple password. The passwordd is included in the transmitted packet, which makes this method of authentication relatively insecure

Related Topics	

Example:

```
XorPlus# set protocols rip interface vlan.10 address 172.168.10.1 authentication simple-password rippassword
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.10 ripng

Please refer to RIP section for details

3.5.11 rstp

3.5.11.1 enable

Syntax	set protocols rstp enable < true | false >
Hierarchy Level	[config mode]
Release Information	
Description	Enable or disable the Spanning Tree Protocol.
Default	enable
Options	
Related Topics	

Example:

```
XorPlus# set protocols rstp enable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.11.2 bridge-priority

Syntax	set protocols rstp bridge-priority < priority >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the RSTP local bridge priority
Default	32768
Options	Priority - Configure the local spanning tree bridge priority Range: [0..61440]
Related Topics	

Example:

```
XorPlus# set protocols rstp bridge-priority 6000
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show spanning-tree bridge
STP Bridge Parameters
Enabled Protocol: RSTP
Root ID: 6000.c8:0a:a9:03:49:1f
Hello Time: 2 seconds
Maximum Age: 20 seconds
Forward Delay: 15 seconds
Number of Topology changes: 0
Local Parameters
Bridge ID:  6000.c8:0a:a9:03:49:1f

XorPlus#
```

3.5.11.3 force-version

Syntax	set protocols rstp force-version < 0 | 1 >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the Spanning tree protocol as STP or RSTP
Default	1
Options	version - 0 as the STP, 1 as the RSTP
Related Topics	

Example:

```
XorPlus# set protocols rstp force-version 0
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show spanning-tree bridge
STP Bridge Parameters
  Enabled Protocol: STP
  Root ID: 32768.c8:0a:a9:03:49:1f
  Hello Time: 2 seconds
  Maximum Age: 20 seconds
  Forward Delay: 15 seconds
  Number of Topology changes: 0
Local Parameters
  Bridge ID:  32768.c8:0a:a9:03:49:1f
```

```
XorPlus#
```

3.5.11.4 forward-delay

Syntax	et protocols rstp forward-delay < forward-delay >
Hierarchy Level	[config mode]
Release Information	
Description	onfigure the forward delay time of the spanning tree
Default	15
Options	forward-delay - The forward delay time of the RSTP ange: [4..30]
Related Topics	

Example:

```
XorPlus# set protocols rstp forward-delay 20
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show spanning-tree bridge
STP Bridge Parameters
  Enabled Protocol: STP
  Root ID: 32768.c8:0a:a9:03:49:1f
  Hello Time: 2 seconds
  Maximum Age: 20 seconds
  Forward Delay: 20 seconds
  Number of Topology changes: 0
Local Parameters
  Bridge ID:  32768.c8:0a:a9:03:49:1f

XorPlus#
```

3.5.11.5 hello-time

Syntax	set protocols rstp hello-time < hello-time >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the hello time of the spanning tree
Default	2
Options	hello-time - The interval of BPDU which is sent by system Range: [1..10]
Related Topics	

Example:

```
XorPlus# set protocols rstp hello-time 5
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show spanning-tree bridge
STP Bridge Parameters
  Enabled Protocol: STP
  Root ID: 32768.c8:0a:a9:03:49:1f
  Hello Time: 5 seconds
  Maximum Age: 20 seconds
  Forward Delay: 15 seconds
  Number of Topology changes: 0
Local Parameters
  Bridge ID:  32768.c8:0a:a9:03:49:1f

XorPlus#
```

3.5.11.6 interface <if-name>

Syntax	set protocols rstp interface <if-name> <{bpdu-filter true|false} | {bpdu-guard ture|false} | {cost cost} | {disable true|false} | {edge true|false} | {port-priority priority} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the spanning tree protocol parameter of specified interface
Default	Edge : false
Options	bpdu-filter - If the the specified interface enable the bpdu-filter and is configured as edge port, this interface will work as a normal RSTP status when receiving a BPDU. bpdu-guard -If the the specified interface enable thee bpdu-guard and is configured as edge port, this interface will shut-down when receiving a BPDU. cost - configure the port cost of the interface. Range: [1..200000000], 10Gbit is 2000, 1Gbit is 20000 default disable - If the disable the spanning tree protocoll in special interface, the interface will not send and receive any BPUDs. edge - If the configure the interface as edgee interface, it will not send any BPDU and enter into forwarding status immediately when this interface linkup. port-priority - Configure the spanning tree priority of the interface. Range: [0..240]
Related Topics	

Example:

```
XorPlus# set protocols rstp interface ge-1/1/1 port-priority 100
[edit]
XorPlus# set protocols rstp interface ge-1/1/1 edge true
[edit]
XorPlus# set protocols rstp interface ge-1/1/1 bpdu-guard true
[edit]
XorPlus# commit
```

```
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.11.7 max-age

Syntax	set protocols rstp max-age < max-age >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the max-age the spanning tree
Default	20
Options	max-age - The max-age parameter of the BPDU field Range: [6..40]
Related Topics	

Example:

```
XorPlus# set protocols rstp max-age 30
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus# run show spanning-tree bridge
STP Bridge Parameters
  Enabled Protocol: STP
  Root ID: 32768.c8:0a:a9:03:49:1f
  Hello Time: 5 seconds
  Maximum Age: 30 seconds
  Forward Delay: 15 seconds
  Number of Topology changes: 0
Local Parameters
  Bridge ID:  32768.c8:0a:a9:03:49:1f

XorPlus#
```

3.5.11.8 traceoptions flag

Syntax	set protocols rstp traceoptions flag < all | bridge-detection-machine | configuration | events | message-in | message-out | port-information-machine | port-migration-machine | port-receive-machine | port-role-selection-machine | port-state-transition-machine | port-transmit-machine | state-machine-variables | timers | topology-change-machine >
Hierarchy Level	[config mode]
Release Information	

Description	Display the debug information of the RSTP protocol
Default	false
Options	all - display all the debug information of RSTP bridge-detection-machine - display the debugi information of bridge-detection-machine configuration - display the debug information when configure RSTP events - display the debug information of RSTP events message-in - display the debug information when receive the BPDU message-out - display the debug information when send the BPDU port-information-machine - display the debug information when port-information-machine change port-migration-machine - display the debug information when port-migration-machine change port-receive-machine - display the debug information whenn port-receive-machine change port-role-selection-machine - display the debug information whenn port-role-selection-machine change port-state-transition-machine - display the debug information whenn port-state-transition-machine change port-transmit-machine - display the debug information whenn port-transmit-machine change state-machine-variables - display the debug information whenn state-machine-variables change timers - display the debug information when timers expired. topology-change-machine - display the debug information whenn topology-change-machine change
Related Topics	

Example:

```
XorPlus# set protocols rstp traceoptions flag topology-change-machine disable true
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.12 snmp

community	Configure SNMP community information
contact	SNMP contact
description	SNMP description
location	SNMP location
name	SNMP name
traceoptions	Configure the tracing options
trap-group	SNMP trap group

3.5.12.1 community

Syntax	set protocols snmp community public < {clients ip-add} | {authorization read-only} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure the public community parameter
Default	
Options	ip-add - The IP address of SNMP client
Related Topics	

Example:

```
XorPlus# set protocols snmp community public clients 10.10.50.125
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.12.2 contact

Syntax	set protocols snmp contact < email-add >
Hierarchy Level	[config mode]
Release Information	
Description	Configure contact information of the system
Default	
Options	email-add - The contact information of the system
Related Topics	

Example:

```
XorPlus# set protocols snmp contact "test@pica8.net"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.12.3 description

Syntax	set protocols snmp description < description >
Hierarchy Level	[config mode]
Release Information	
Description	Configure description information of the system

Default	
Options	description - The description information of the system
Related Topics	

Example:

```
XorPlus# set protocols snmp description "XorPlus Switch"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.12.4 location

Syntax	set protocols snmp location < location >
Hierarchy Level	[config mode]
Release Information	
Description	Configure location information of the system
Default	
Options	location - The location information of the system
Related Topics	

Example:

```
XorPlus# set protocols snmp location "pica_lab"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.12.5 name

Syntax	set protocols snmp name < name >
Hierarchy Level	[config mode]
Release Information	
Description	Configure name of the system
Default	
Options	name - The name of the system
Related Topics	

Example:

```
XorPlus# set protocols snmp name "pica_switch"
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.12.6 trap-group

Syntax	set protocols snmp trap-group < {target ip-add} | {version v1|v2} >
Hierarchy Level	[config mode]
Release Information	
Description	Configure SNMP trap parameter of the system including the target IP host and the version
Default	
Options	ip-add - The IP address of the SNMP trap host receiving
Related Topics	

Example:

```
XorPlus# set protocols snmp trap-group targets 10.10.50.51
[edit]
XorPlus# commit
Commit OK.
Save done.
[edit]

XorPlus#
```

3.5.13 static

Syntax	static {
	route address/prefix-length {
	next-hop ipv4-addr
	metric metric
	qualified-next-hop ipv4-addr {
	metric metric
	}
	}
	interface-route address/prefix-length {
	next-hop-interface if-name
	next-hop-router ipv4-addr
	metric metric
	qualified-next-interface if-name {
	next-hop-router ipv4-addr
	metric metric
	}
	}
	}

Hierarchy Level	[config mode]
Release Information	
Description	Configure static routes to be installed in the routing table.
Default	
Options	
Related Topics	

Example:

```
XorPlus# set vlans vlan-id 5
[edit]
XorPlus# set vlans vlan-id 5 l3-interface vlan.5
[edit]
XorPlus# set vlan-interface interface vlan.5 address 192.168.2.1 prefix-length 24
[edit]
XorPlus# commit
Waiting for merging configuration.
Commit OK.
Save done.
[edit]
XorPlus# set protocols static route 9.9.9.0/24 next-hop 192.168.2.2
[edit]
XorPlus# commit
Waiting for merging configuration.
Commit OK.
Save done.
[edit]
XorPlus#
```

3.5.13.1 route

Syntax	route address/prefix-length {
	next-hop: IPv4-addr
	metric: uint
	qualified-next-hop IPv4-addr {
	metric: uint
	}
	}

Hierarchy Level	[config mode]
Release Information	
Description	Specify the IPv4 prefix range for the destination network by including the destination-networks statement.
Default	
Options	address/prefix-length -Destination of the static routee and Destination prefix of network.
Related Topics	

Example:

```
Please refer to "static"
```

3.5.13.2 next-hop

Syntax	next-hop ipv4-addr
Hierarchy Level	[config mode]
Release Information	
Description	Configure the next hop for a static route.
Default	
Options	ip-addr -Reach the next-hop router by specifying an IPP address, an interface name.
Related Topics	

Example:

```
Please refer to "static"
```

3.5.13.3 metric

Syntax	metric metric
Hierarchy Level	[config mode]
Release Information	
Description	Metric value for a static route.
Default	Default: 1

Options	metric -This specifies the routing metric or cost for this route. Range: 1 through 65535
Related Topics	

Example:

```
Please refer the "static"
```

3.5.13.4 qualified-next-hop

Syntax	qualified-next-hop ipv4-addr {
	
	metric metric
	}

Hierarchy Level	[config mode]
Release Information	
Description	Configure the qualified-next-hop metric vaule for a static route.
Default	
Options	ipv4-addr -This specifies an alternative nexthop router for the route. metric -The routing metric or cost for this qualified route.The default is 10.
Related Topics	

Example:

```
Please refer to "static"
```

3.5.13.5 interface-route

Syntax	interface-route address/prefix-length {
	
	next-hop-interface if-name
	next-hop-router ipv4-addr
	metric metric
	qualified-next-interface if-name {
	next-hop-router ipv4-addr
	metric metric
	}
	}

Hierarchy Level	[config mode]
Release Information	
Description	Configure the interface route for a static route. Specify the IPv4 prefix range for the destination network by including the destination-networks statement.
Default	
Options	address/prefix-length -Destination of the static routee and Destination prefix of network.
Related Topics	

Example:

```
Please refer to "static"
```

3.5.13.6 next-hop-interface

Syntax	next-hop-interface if-name
Hierarchy Level	[config mode]
Release Information	
Description	Configure the next-hop-interface for static route
Default	
Options	if-name -Name of the interface on which to configuree an independent metric for a static route.
Related Topics	

Example:

```
Please refer to "static"
```

3.5.13.7 next-hop-router

Syntax	next-hop-router ipv4-addr
Hierarchy Level	[config mode]
Release Information	
Description	Configure the next-hop-router for static route
Default	The default is 0.0.0.0
Options	ipv4-addr -This specifies the IPv4 address of the nexthop router towards the destination subnet. The default is 0.0.0.0.
Related Topics	

Example:

```
Please refer the "static"
```

3.5.13.8 qualified-next-interface

Syntax	qualified-next-interface if-name {
	next-hop-router ipv4-addr
	metric metric
	}

Hierarchy Level	[config mode]

Release Information	
Description	Configure an alternative nexthop interface metric on a static route
Default	
Options	ipv4-addr -This specifies the IPv4 address of the nexthop router towards the destination subnet. The default is 0.0.0.0. metric -The routing metric or cost for this qualified route.The default is 10.
Related Topics	

Example:

```
Please refer to "static"
```

3.5.14 vrrp

Syntax	set protocols vrrp interface <interface> vrid [1..254]
Hierarchy Level	[config mode]
Release Information	
Description	Configure the virtual router id
Default	
Options	
Related Topics	

4 Configuration guide and examples

4.1 CLI for Pronto 3780

4.1.1 The CLI difference between platform Pronto 3290 and Pronto 3780

The interface name of Pronto 3780 is "te-1/1/x" instead of "ge-1/1/x" in Pronto 3290.

4.2 File system and usually operations

4.2.1 How to display the version of the system

```
XorPlus# run show version
Pica8  XorPlus  1.2
Copyright (C) 2009, 2010 Pica8, Inc.
Base ethernet MAC Address   : C8:0A:A9:AE:0A:66
Hardware model              : Pronto 3780
Revision ID                 : 5219
```

4.2.2 How to show the system info in config-mode

```
XorPlus> show spanning-tree bridge
STP Bridge Parameters
  Enabled Protocol: RSTP
  Root ID: 32768.00:c0:9f:11:22:44
  Hello Time: 2 seconds
  Maximum Age: 20 seconds
  Forward Delay: 15 seconds
  Number of topology changes: 14
  Time since last topology change: 650 seconds
Local Parameters
  Bridge ID:  32768.c8:0a:a9:ae:0a:66

XorPlus# run show spanning-tree bridge
STP Bridge Parameters
  Enabled Protocol: RSTP
  Root ID: 32768.00:c0:9f:11:22:44
  Hello Time: 2 seconds
  Maximum Age: 20 seconds
  Forward Delay: 15 seconds
  Number of topology changes: 14
  Time since last topology change: 650 seconds
Local Parameters
  Bridge ID:  32768.c8:0a:a9:ae:0a:66

  //User can input "run show xxx xxx" in config-mode to
  //execute the "show xxx xxx " CLI of operation-mode
```

4.2.3 How to update the image of the system

```
//enter the operation mode
XorPlus> file tftp get remote-file pica.tar.gz local-file
             pica.tar.gz ip-address 1.1.5.6
XorPlus> configure
//save the current config to startup config if necessary
XorPlus# save running-to-startup
XorPlus# run request system reboot   //reboot the system

//The images of XorPlus usually named as pica.tar.gz
//In abvoe the example, the updated images are located in
//TFTP server 1.1.5.6 /tftpboot.
//The image files will copy to root directory in the system
//and decompressed to "/pica".
//Image "pica.tar.gz" only includes the XorpPlus software
//Usually, user only need update the XorPlus software
//Image "rootfs.tar.gz" includes both system files and XorPlus
```

4.2.4 What should do when the system can't boot from cf-card

```
//enter the uboot CLI by "Hit any key to stop autoboot:  5"
      Device 0: Model: 2GB CompactFlash Card Firm: CF B612D Ser#:
                Type: Hard Disk
                Capacity: 1953.9 MB = 1.9 GB (4001760 x 512)
    Hit any key to stop autoboot:  0
```

```
=>
=> printenv       //print the uboot env

=> run flash_bootcmd      //boot the system from the flash ROM

booting procedure.....

[1  ]  File Management
[2  ]  Board Information
[3  ]  Diagnostic Test
[4  ]  Manufacturing Test Mode Set
[5  ]  Test Error Log File Management
[6  ]  PING
[7  ]  Reset
[8  ]  For Vibration Test

[D  ]  BCM Shell

Enter your choice:

//Input the "D" to enter the BCM Shell
BCM.0>
//Input the "ctrl + D" to enter the linux Shell
#
//copy the new image file to cf-card
# tftp -g -l /cf_card/rootfs.tar.gz -r build/rootfs.tar.gz 1.1.5.16
# tar xzvpf rootfs.tar.gz

# reboot      // reboot the system
```

4.3 Configuration example

4.3.1 How to create a vlan and configure the parameters

```
set vlans vlan-id 4      //create vlan 4
set vlans vlan-id 5      //create vlan 5
//configure port as trunk mode
set interface gigabit-ethernet te-1/1/4 family ethernet-switching port-mode trunk
//configure port's native-vlan-id
set interface gigabit-ethernet te-1/1/4 family ethernet-switching native-vlan-id 4
//add the port in vlan 5
set interface gigabit-ethernet te-1/1/4 family ethernet-switching vlan members 5
commit      //Commit the configuration
```

4.3.2 How to configure the QoS

```
//configure the best-effort traffic in queue 3.
set class-of-service forwarding-class best-effort queue-num 3
//configure the real-time traffic in queue 0.
set class-of-service forwarding-class rt-traffic queue-num 0
//configure the normal traffic in queue 2.
set class-of-service forwarding-class normal-traffic queue-num 2
```

```
//configure a classifier c1 with ieee-802.1 QoS
set class-of-service classifier c1 trust-mode ieee-802.1
//mapping the best-effort code as 3
set class-of-service classifier c1 forwarding-class best-effort code-point 3
//configure a classifier c2 with DSCP QoS
set class-of-service classifier c2 trust-mode dscp
//mapping the rt-traffic code as 10
set class-of-service classifier c2 forwarding-class rt-traffic code-point 10

//apply the classifier c1 in te-1/1/1
set class-of-service interface te-1/1/1 classifier c1
//apply the classifier c2 in te-1/1/2
set class-of-service interface te-1/1/2 classifier c2
commit

XorPlus# run show class-of-service
Classifier             Trust-mode        Forwarding-class       Code-point
--------------------   ---------------   --------------------   ----------
c1                     ieee-802.1        best-effort            3
c2                     dscp              rt-traffic             10

Forwarding-class       Queue-num
--------------------   ---------
best-effort            3
rt-traffic             0
normal-traffic         2

//Firstly,user should create the "forwarding-class", which will
//determine the queue number of specified traffic type.
//Second, user must create a "classifier" which including the "trust-mode".
//Then user need map the code-point in "forwarding-class"
//Finally, user need apply the "classifier" on the specified port.
```

4.3.3 How to configure the IPv6

```
set vlans vlan-id 5
set vlans vlan-id 6
set interface gigabit-ethernet te-1/1/5 family ethernet-switching native-vlan-id 5
set interface gigabit-ethernet te-1/1/6 family ethernet-switching native-vlan-id 6
set vlans vlan-id 5 l3-interface vlan.5
set vlans vlan-id 6 l3-interface vlan.6
commit

//configure IPv6 global address
set vlan-interface interface vlan.5 address 2001:db8:3c4d:5:60:ff:73:87 prefix-length 64
//configure IPv6 link-local address
set vlan-interface interface vlan.5 address fe80::ca0a:a9ff:fe04:4931 prefix-length 64
set vlan-interface interface vlan.6 address 2001:db8:3c4d:6:0:ff:73:87 prefix-length 64
set vlan-interface interface vlan.6 address fe80::ca0a:a9ff:4:4932 prefix-length 64
commit

set protocols static route 2001:db8:3c4d:7::/64 next-hop 2001:db8:3c4d:5:60:d6ff:73:89
commit

//In Pronto 3290 and Pronto 3780, user must configure the link-local IPv6 address,
//otherwise, all the IPv6 interface will share the same link-local address.
//We will fix this problem in later released version.
```

4.3.4 How to configure static and LACP link-aggregation port

```
set interface aggregate-ethernet ae1     //create a static LAG ae1
//add te-1/1/1 in LAG ae1
set interface gigabit-ethernet te-1/1/1 ether-options 802.3ad ae1
//add te-1/1/2 in LAG ae1
set interface gigabit-ethernet te-1/1/2 ether-options 802.3ad ae1
//configure the ae1 parameter
set interface aggregate-ethernet ae1 family ethernet-switching port-mode trunk
commit

//create a LACP LAG ae1
set interface aggregate-ethernet ae2 aggregated-ether-options lacp enable true
//add te-1/1/3 in LAG ae2
set interface gigabit-ethernet te-1/1/3 ether-options 802.3ad ae2
//add te-1/1/4 in LAG ae2
set interface gigabit-ethernet te-1/1/4 ether-options 802.3ad ae2
commit

// User can create 6 LAGs including static and LACP at most
```

4.3.5 How to create L3 interace and enable RIP on it

```
set vlans vlan-id 4
set interface gigabit-ethernet te-1/1/4 family ethernet-switching native-vlan-id 4
set vlans vlan-id 4 l3-interface vlan.4        //create a Layer-3 interface vlan.4
commit
//configure the IP address for the L3 interface vlan.4
set vlan-interface interface vlan.4 address 192.168.1.1 prefix-length 24
commit

//export the connected route to RIP routing database
set policy policy-statement connected-to-rip term export from protocol connected
//export the connected route with metric 0
set policy policy-statement connected-to-rip term export then metric 0
set policy policy-statement static-to-rip term export from protocol static
set policy policy-statement static-to-rip term export then metric 1
commit

set protocols rip interface vlan.4 address 192.168.1.1  //configure the rip interface
set protocols rip export "connected-to-rip,static-to-rip"  //apply the policy on RIP
commit

set vlans vlan-id 5
set vlans vlan-id 5 l3-interface vlan.5
set interface gigabit-ethernet te-1/1/5 family ethernet-switching native-vlan-id 5
set vlan-interface interface vlan.5 address 192.168.2.1 prefix-length 24
commit
set protocols static route 9.9.9.0/24 next-hop 192.168.2.2   //configure a static route
commit

//The te-1/1/4 is a RIP interface, by which the RIP protocol packet will be sent out.
//The sent out RIP packet include the connected route and static route in the system.
```

4.3.6 How to configure the OSPF routing protocol

```
set vlans vlan-id 2 l3-interface vlan.2
set vlans vlan-id 3 l3-interface vlan.3
set vlans vlan-id 4 l3-interface vlan.4
commit
set vlan-interface interface vlan.2 address 10.10.61.20 prefix-length 24
```

```
set vlan-interface interface vlan.3 address 10.10.62.20 prefix-length 24
set vlan-interface interface vlan.4 address 10.10.63.20 prefix-length 24
commit
set interface gigabit-ethernet te-1/1/2 family ethernet-switching native-vlan-id 2
set interface gigabit-ethernet te-1/1/3 family ethernet-switching native-vlan-id 3
set interface gigabit-ethernet te-1/1/4 family ethernet-switching native-vlan-id 4
commit

set protocols ospf4 area 0.0.0.0 interface vlan.2 address 10.10.61.20
set protocols ospf4 area 0.0.0.1 interface vlan.3 address 10.10.62.20
set protocols ospf4 router-id 1.1.1.1
commit

set protocols rip interface vlan.4 address 10.10.63.20
commit
set protocols static route 1.1.1.0/24 next-hop 10.10.63.30
set protocols static route 1.1.2.0/24 next-hop 10.10.63.30
commit

//configure policy "rip-ospf" which will inject the rip route in ospf
set policy policy-statement rip-ospf term rip-ospf from protocol rip
//policy "static-ospf" which will inject the static route in ospf
set policy policy-statement static-ospf term static-ospf from protocol static
commit

//apply the policy in ospf module
set protocols ospf4 export "rip-ospf,static-ospf"
commit

//The Layer-3 interface vlan.2 and vlan.3 are configured as OSPF interface.
//The Layer-3 interface vlan.4 are configured as RIP interface.
//The RIP route and static route will be inject to the OSPF database.
//User can decide the metric of the injected route from other protocols
//in policy configuration.
```

4.3.7 How to configure the ECMP

```
set interface ecmp_path_max 16
commit

//The default value of ecmp_path_max is 4.
//User must reboot the system to make the configuration available.
```

4.3.8 How to configure IGMP snooping

```
set protocols igmp-snooping enable true     //enable the igmp-snooping globally
//enable the igmp-snooping in vlan 1
set protocols igmp-snooping vlan-id 1 enable true
commit

//configure a mrotue port if necessary
set protocols igmp-snooping vlan-id 1 mrouter interface te-1/1/3
commit

set protocols igmp-snooping vlan-id 1 querier other-querier-timer 1
//configure a L2 querier if necessary
set protocols igmp-snooping vlan-id 1 querier enable true
commit
```

4.3.9 How to configure multicast of PIM-SM and IGMP

```
set vlans vlan-id 2 l3-interface vlan.2
set vlans vlan-id 3 l3-interface vlan.3
set vlans vlan-id 4 l3-interface vlan.4
set interface gigabit-ethernet ge-1/1/1 family ethernet-switching native-vlan-id 2
set interface gigabit-ethernet ge-1/1/2 family ethernet-switching native-vlan-id 3
set interface gigabit-ethernet ge-1/1/3 family ethernet-switching native-vlan-id 4
set vlan-interface interface vlan.2 address 10.10.60.10 prefix-length 24
set vlan-interface interface vlan.3 address 10.10.61.10 prefix-length 24
set vlan-interface interface vlan.4 address 10.10.62.10 prefix-length 24
commit

//configure multicast interface for vlan.2
set multicast-interface interface vlan.2 disable false
set multicast-interface interface vlan.3 disable false
set multicast-interface interface vlan.4 disable false
//configure a register_vif interface, must configure it in PIM-SM
set multicast-interface interface register_vif disable false
commit

set protocols igmp interface vlan.4     //configure a IGMP interface if necessary
commit

//configure PIM-SM interface for vlan.2
set protocols pimsm4 interface vlan.2 disable false
set protocols pimsm4 interface vlan.3 disable false
set protocols pimsm4 interface vlan.4 disable false
//configure a register_vif interface, must configure it in PIM-SM
set protocols pimsm4 interface register_vif disable false
commit

//configure the bootstrap
set protocols pimsm4 bootstrap cand-bsr scope-zone 224.0.0.0/4 cand-bsr-by-vif-name vlan.4
set protocols pimsm4 bootstrap cand-rp group-prefix 237.0.0.0/8 cand-rp-by-vif-name vlan.2
set protocols pimsm4 bootstrap cand-rp group-prefix 231.0.0.0/8 cand-rp-by-vif-name vlan.3
set protocols pimsm4 bootstrap cand-rp group-prefix 233.0.0.0/8 cand-rp-by-vif-name vlan.4
commit
```