



FortiSwitch-1000

Version 4.0 MR1

CLI Reference

FortiSwitch-1000 CLI Reference

Version 4.0 MR1

Revision 2

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1 Introduction

1.1 Overview

1.1.1 Audience

This guide is intended for use by data center administrators, system administrators and customer support personnel responsible for monitoring or configuring the Fortinet FortiSwitch-1000 Ethernet Fabric 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

1.1.2 Registering your Fortinet product

Before you begin, take a moment to register your Fortinet product at the Fortinet Technical Support web site, <https://support.fortinet.com>.

Many Fortinet customer services, such as firmware updates, technical support, and FortiGuard Antivirus and other FortiGuard services, require product registration.

For more information, see the Fortinet Knowledge Center article [Registration Frequently Asked Questions](#).

1.1.3 Customer Service and Technical Support

Fortinet Technical Support provides services designed to make sure that your Fortinet products install quickly, configure easily, and operate reliably in your network.

To learn about the technical support services that Fortinet provides, visit the Fortinet Technical Support web site at <https://support.fortinet.com>.

You can dramatically improve the time that it takes to resolve your technical support ticket by providing your configuration file, a network diagram, and other specific information. For a list of required information, see the Fortinet Knowledge Center article [What does Fortinet Technical Support require in order to best assist the customer?](#)

1.1.4 Training

Fortinet Training Services provides classes that orient you quickly to your new equipment, and certifications to verify your knowledge level. Fortinet provides a variety of training programs to serve the needs of our customers and partners world-wide.

To learn about the training services that Fortinet provides, visit the Fortinet Training Services web site at <http://campus.training.fortinet.com>, or email them at training@fortinet.com.

1.1.5 Fortinet Documentation

The Fortinet Technical Documentation web site, <http://docs.fortinet.com>, provides the most up-to-date versions of Fortinet publications, as well as additional technical documentation such as technical notes.

In addition to the Fortinet Technical Documentation web site, you can find Fortinet technical documentation on the Fortinet Tools and Documentation CD, and on the Fortinet Knowledge Center.

1.1.5.1 Fortinet Tools & Documentation CD

Many Fortinet publications are available on the Fortinet Tools and Documentation CD shipped with your Fortinet product. The documents on this CD are current at shipping time. For current versions of Fortinet technical documentation, visit the Fortinet Technical Documentation web site, <http://docs.fortinet.com>.

1.1.5.2 Fortinet Knowledge Base

The Fortinet Knowledge Base provides additional Fortinet technical documentation, such as troubleshooting and how-to-articles, examples, FAQs, technical notes, a glossary, and more. Visit the Fortinet Knowledge Base at <http://kb.fortinet.com>.

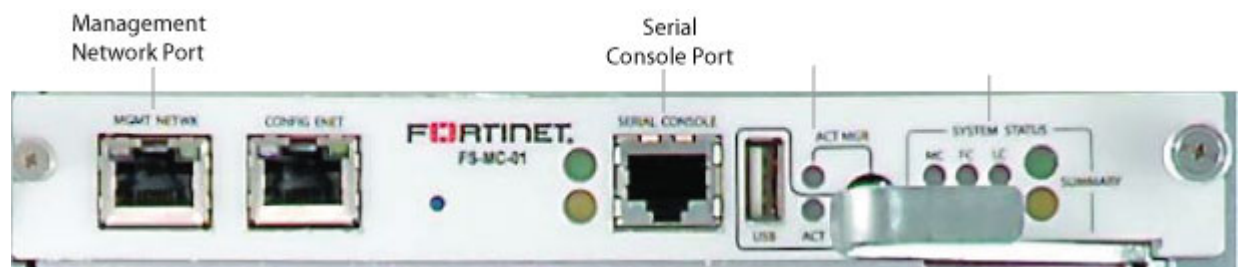
1.1.5.3 Comments on FortiMail technical documentation

Please send information about any errors or omissions in this document to techdoc@fortinet.com.

1.1.6 Accessing the CLI

The CLI is accessed via:

- Serial interface connected directly from a PC to the serial console port of the active management card (see illustration below)
- Telnet session or Secure Shell (SSH) session. Telnet or SSH session can be initiated in-band through the network or out-of-band via the management network port (see illustration below); either telnet or SSH access requires that an IP address be configured on the switch. The maximum number of concurrent telnet and SSH connections to the switch is 15.



The following are the default settings of these interfaces:

- **Serial:** initialized baud-rate 115200, 8 bit, no parity, and no flow control. By default the serial port is turned on.
- **Telnet:** initialized to port 23. By default the telnet service is turned on.
- **SSH:** initialized to port 22. By default the SSH service is turned off.

1.1.7 Document Conventions

The following typographical conventions are used in command descriptions:

Table 1: Document Conventions

Convention	Use
bold type	keywords, to be typed verbatim
<i>italic type</i>	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

1.2 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 FortiSwitch-1000 Ethernet Fabric Switch. This section describes both types of commands and how they are organized and accessed.

1.2.1 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
, <BS>	delete previous character
Ctrl-A	go to beginning of line
Ctrl-E	go to end of line
Ctrl-F	go forward one character
Ctrl-B	go backward one character

Ctrl-D	delete current character
Ctrl-U, X	delete to beginning of line
Ctrl-K	delete to end of line
Ctrl-W	delete previous word
Ctrl-T	transpose previous character
Ctrl-P	go to previous line in history buffer
Ctrl-R	rewrites or pastes the line
Ctrl-N	go to next line in history buffer
Ctrl-Y	print last deleted character
Ctrl-Q	enables serial flow
Ctrl-S	disables serial flow
Ctrl-Z	return to root command prompt
Up Arrow	go to previous line in history buffer
Down Arrow	go to next line in history buffer
Right Arrow	go forward one character
Left Arrow	go backward one character
<TAB>, <SPACE>	command-line completion
Exit	go to next lower command prompt
?	list choices

1.2.2 Mode-Based Structure

The FortiSwitch-1000 CLI command tree groups commands in modes according to their nature as shown below. Because the CLI is divided into modes, the commands in one mode are not available until the operator switches to that mode, with the exception of the Default Mode commands which are also available in Enable 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
Enable Mode	#	Full set of show commands, plus access to Config Mode and File Mode.	Use enable command in Default Mode (requires password), exit from Config Mode or File Mode, or end from the other configuration modes.	exit : returns to Default Mode
Debug Mode	(Debug)#	Advanced command set for debugging, to be used only in cooperation with Fortinet technical support	Use debug command in Enable Mode.	exit/end : returns to Enable Mode
File Mode	(File)#	Commands for image updating and file transfer.	Use file command in Enable Mode.	exit/end : returns to Enable Mode
Config Mode	(Config)#	Configuration commands for the switch as a whole, plus access to additional configuration modes.	Use config command in Enable Mode or exit command in the other configuration modes.	exit/end : returns to Enable Mode
Config-LAG Mode	(Config-LAG n)# where n is the LAG ID	Configuration commands for LAGs.	Use lag command (and specify a LAG ID) in Config Mode.	exit : returns to Config Mode end : returns to Enable Mode.
Config-Port Mode	(Config-Port x/y)# where x/y identifies the port in slot/port format	Configuration commands for individual ports.	Use port command (and specify a port to be configured) in Config Mode.	Use exit command to return to Config Mode or end command to return to Enable Mode.
Config-VLAN Mode	(Config-VLAN)#	Configuration commands for VLANs.	Use vlan command in Config Mode.	Use exit to return to Config Mode or end to return to Enable Mode.

1.2.3 Command Syntax

1.2.3.1 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.

1.2.3.2 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 (see “Special Argument Types” below)

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. **Note:** an empty string (“”) is not valid.

Parameters may be mandatory values, optional values, choices, or a combination. <parameter>.

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.

1.2.3.3 Special Argument Types

<1-4094>: takes an integer in the range specified.

<ip_address>: takes a valid IP address in the following format: a.b.c.d (e.g., 172.16.0.114)

<mac_address>: takes a valid MAC address represented as six hexadecimal numbers separated by colons (e.g., 00:1A:F6:00:03:61)

<slot/port>: is used to identify a port – either a physical port on one of the cards in the chassis, or a logical port (such as a LAG); in both cases, the operator must supply a slot number and a port number (e.g., 2/1)

<hh:mm:ss>: takes a time value with two digits each for hours, minutes and seconds, separated by colons.

1.2.4 “No” Form of Commands

The token **no** 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 “no” 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 “no” form disables (and vice versa).

Selected uses of the “no” form are called out under individual commands; the operator may also type **no ?** in the CLI for a full list of the commands available in a given mode that support the “no” form.

1.2.5 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 pressing <tab> or <space bar>.

2 Default Mode

2.1 Overview

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

2.1.1 Access

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

2.1.2 Exit

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

2.2 Commands

Command	Purpose
enable	Enter Enable Mode.
cls	Clear the screen.
help	Display line-editing commands.
logout	Exit this session. Any unsaved changes are lost.
ping	Send ICMP echo packets to a specified IP address.
show	Display switch options and settings.
telnet	Telnet to a remote host.

2.2.1 **cls**

Syntax

cls

Purpose

To clear the screen.

Options & Parameters

This command has no options or parameters.

2.2.2 **enable**

Syntax

enable

Purpose

To enter Enable Mode.

Options & Parameters

This command has no options or parameters.

Notes

Enable Mode increases the privilege level of the user and allows access to a wider set of commands. Enable Mode is required for the user to enter Configuration or File modes.

Users with read-only privileges do not have access to Enable Mode or the **enable** command.

2.2.3 help

Syntax

help

Purpose

To display the function of special editing keys.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) > help
```

```
HELP:
```

```
Special keys:
```

```
<DEL>, <BS>... delete previous character  
Ctrl-A ..... go to beginning of line  
Ctrl-E ..... go to end of line  
Ctrl-F ..... go forward one character  
Ctrl-B ..... go backward one character  
Ctrl-D ..... delete current character  
Ctrl-U, X .... delete to beginning of line  
Ctrl-K ..... delete to end of line  
Ctrl-W ..... delete previous word  
Ctrl-T ..... transpose previous character  
Ctrl-P ..... go to previous line in history buffer  
Ctrl-R ..... rewrites or pastes the line  
Ctrl-N ..... go to next line in history buffer  
Ctrl-Y ..... print last deleted character  
Ctrl-Q ..... enables serial flow  
Ctrl-S ..... disables serial flow  
Ctrl-Z ..... return to root command prompt  
Up Arrow ..... go to previous line in history buffer  
Down Arrow ... go to next line in history buffer  
Right Arrow... go forward one character  
Left Arrow ... go backward one character  
<TAB>, <SPACE> command-line completion  
Exit ..... go to next lower command prompt  
? ..... list choices
```


2.2.4 logout

Syntax

logout

Purpose

To exit this session.

Options & Parameters

This command has no options or parameters.

Notes

User is prompted to save any unsaved changes to the switch configuration. In order to save running configuration changes, the user must cancel the logout procedure and use the **copy running-config** command. (See **copy** “

Notes & Examples” on page 222)

Example

```
(FS1KCH1032000249) > logout
```

```
Warning: the system has unsaved configuration changes.
```

```
Would you like to logout now? (y/n) y
```

2.2.5 ping

Syntax

`ping <ip_address>`

Purpose

To test the accessibility of a specified IP address by sending ICMP echo packets.

Options & Parameters

<code><ip_address></code>	Specifies the host's IP address.
---------------------------------	----------------------------------

Example

```
(FS1KCH1032000249) >ping 10.10.10.30
```

```
Send count=3, Receive count=3 from 10.10.10.30
```

2.2.6 show

The **show** commands display information about the options and settings of the switch. A limited set is available in Default Mode; the complete set (including all Default Mode **show** commands) is available in Enable Mode. (See page 88)

Table 4: Show Commands in Default Mode

Command	Purpose
show cos	Display class-of-service (802.1p) priority mapping information. (See page 25)
show garp	Display Generic Attribute Registration Protocol (GARP) information. (See page 26)
show gmrp	Display GARP Multicast Registration Protocol (GMRP) port information. (See page 27)
show gvrp	Display GARP VLAN Registration Protocol (GVRP) parameters for one or all ports. (See page 28)
show history	Display the last commands entered in the CLI. (See page 29)
show lag brief	Display LAG static capability and summary information for the device. (See page 30)
show mgmt-ip	Display the management interface configuration. (See page 31)
show serial	Display EIA-232 parameters and serial port inactivity timeout. (See page 32)
show spanning-tree	Display spanning tree information. (See page 33)
show system	Display Chassis components and System information. (See page 48)
show telnet	Display outbound telnet configuration information. (See page 66)

2.2.7 show cos dot1p-mapping

Syntax

show cos dot1p-mapping [*slot/port*]

Purpose

To display class-of-service (802.1p) priority mapping information.

Defaults

Shows mapping of 802.1p priority to FortiSwitch-1000 queues.

Options & Parameters

[<i>slot/port</i>]	Specifies a port in slot/port format for which to display 802.1p priority mapping information. If mapping is not configurable by port, all ports will display identical information.
----------------------	--

Example

```
(FS1KCH1032000249) >show cos dot1p-mapping 1/1
```

```
User Priority   Traffic Class
```

```
-----
```

0	1
1	1
2	0
3	1
4	2
5	2
6	3
7	3

2.2.8 show garp

Syntax

```
show garp [ statistics { port <slot/port> | lag <lag_ID> } ]
```

Purpose

To display Generic Attribute Registration Protocol (GARP) applications information.

Defaults

Displays the status of GMRP and GVRP Admin Modes by default.

Options & Parameters

statistics	Displays GARP applications PDU statistics.
port	Displays spanning tree values on a per-port basis.
<slot/port>	Specifies a port for which to display information.
lag	Displays spanning tree values on a per-LAG basis.
<lag_ID>	Specifies a LAG for which to display information.

Example

default:

```
(FS1KCH1032000249) >show garp
GMRP Admin Mode..... Disable
GVRP Admin Mode..... Disable
```

statistics port:

```
(FS1KCH1032000249) >show garp statistics port 3/1
GVRP PDUs received..... 0
GVRP PDUs Transmitted..... 0
GVRP Failed Registratons..... 0
```

statistics lag:

```
(FS1KCH1032000249) >show garp statistics lag 1
GVRP PDUs received..... 536
GVRP PDUs Transmitted..... 518
GVRP Failed Registrations..... 0
```

2.2.9 show gmrp configuration

Syntax

```
show gmrp configuration { <slot/port> | all | lag <lag_ID> }
```

Purpose

To display GARP Multicast Registration Protocol (GMRP) port information for a specified port or LAG or for all ports.

Options & Parameters

<code><slot/port></code>	Specifies a port in slot/port format for which to display information.
<code>all</code>	Display GMRP information for all ports.
<code>lag</code>	Displays GMRP values on a per-LAG basis.
<code><lag_ID></code>	Specifies a LAG for which to display information.

Example

```
(FS1KCH1032000249) >show gmrp Configuration 12/10
```

```
GMRP Admin Mode..... Disable
```

```
      Join    Leave    LeaveAll    Port
Port    Timer    Timer    Timer    GMRP Mode
      (centiseecs) (centiseecs) (centiseecs)
-----
12/10    20      60      1000    Disabled
```

2.2.10 show gvrp configuration

Syntax

```
show gvrp configuration { <slot/port> | all | lag <lag_ID> }
```

Purpose

To display GARP VLAN Registration Protocol (GVRP) parameters for a specified port or LAG or for all ports.

Options & Parameters

<code><slot/port></code>	Specifies a port in slot/port format for which to display information.
<code>all</code>	Displays GVRP information for all ports.
<code>lag</code>	Displays GVRP values on a per-LAG basis.
<code><lag_ID></code>	Specifies a LAG for which to display information.

Example

```
(FS1KCH1032000249) > show gvrp configuration all
GVRP Admin Mode..... Disable
      Join      Leave      LeaveAll      Port
Port   Timer    Timer    Timer    GVRP Mode
      (centiseecs) (centiseecs) (centiseecs)
-----
2/1    20      60      1000    Disabled
2/2    20      60      1000    Disabled
2/3    20      60      1000    Disabled
2/4    20      60      1000    Disabled
2/5    20      60      1000    Disabled
2/6    20      60      1000    Disabled
2/7    20      60      1000    Disabled
2/8    20      60      1000    Disabled
2/9    20      60      1000    Disabled
2/10   20      60      1000    Disabled
2/11   20      60      1000    Disabled
2/12   20      60      1000    Disabled
LAG 1   20      60      1000    Disabled
```

2.2.11 show history

Syntax

show history [*count*]

Purpose

To display the last commands entered in the CLI.

Defaults

Displays the last 10 commands.

Options & Parameters

<i><count></i>	Specifies the number of commands to display.
----------------------	--

Example

```
(FS1KCH1032000249) >show history
```

```
1 show vlan
```

```
2 show fdb-table
```

```
3 show mac-addr
```

```
4 configure
```

```
5 vlan
```

```
6 exit
```

```
7 telnet
```

```
8 enable
```

```
9 show cos
```

```
10 show spanning-tree
```

2.2.12 show lag brief

Syntax

show lag brief

Purpose

To display LAG capability and summary information for the switch.

Defaults

The **show lag** command has no default behavior, and in Default Mode it requires the option **brief**.

Options & Parameters

This command has no additional options or parameters.

Notes

The **show lag** command in Enable Mode can also display LAG or LACP information for one or all ports. (See **show lag** on page 104)

Example

```
(FS1KCH1032000249) > show lag brief
```

```
LAG ID   LAG Name   Link State Mbr Ports Active Ports
-----
1   DEFAULT   Up        1/1,1/2, 1/2
                1/3,1/4,
                1/5,1/6
2   DEFAULT   Up        1/7,1/8, 1/7,1/8,1/9,
                1/9,1/10, 1/10,1/11
                1/11,1/12
3   DEFAULT   Up        2/1,2/2, 2/1,2/2,2/3,
                2/3,2/4, 2/4,2/5,2/6
                2/5,2/6
```

2.2.13 show mgmt-ip

Syntax

```
show mgmt-ip { inband | service-port }
```

Purpose

To display the management interface configuration.

Options & Parameters

inband	Displays configuration for in-band connectivity.
service-port	Displays service port configuration.

Notes

The **sshd** and **telnetd** options are available in Enable Mode.

Examples

inband:

```
(FS1KCH1032000249) > show mgmt-ip inband
```

```
IP Address..... 0.0.0.0
Subnet Mask..... 0.0.0.0
Default Gateway..... 0.0.0.0
Burned In MAC Address..... 00:1A:F6:00:03:61
Locally Administered MAC Address..... 00:00:00:00:00:00
MAC Address Type..... Burned In
Network Configuration Protocol Current..... None
Management VLAN ID..... 1
```

service-port:

```
(FS1KCH1032000249) > show mgmt-ip service-port
```

```
IP Address..... 172.16.0.116
Subnet Mask..... 255.255.255.0
Default Gateway..... 172.16.0.1
ServPort Configured Protocol Current..... DHCP
Burned In MAC Address..... 00:1A:F6:00:03:61
```

2.2.14 **show serial**

Syntax

show serial

Purpose

To display EIA-232 parameters and serial port inactivity timeout.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) >show serial

```
Serial Port Login Timeout (minutes)..... 5
Baud Rate (bps)..... 115200
Character Size (bits)..... 8
Flow Control..... Disable
Stop Bits..... 1
Parity..... none
```

2.2.15 show spanning-tree

Syntax

```
show spanning-tree [ brief | lag <lag_ID> | mst { summary | { <0-4094> { detailed | lag
{ <lag_ID> { detailed | summary } | all summary } | port { all summary | <slot/port> { detailed |
summary } } } } | port <slot/port> | summary | vlan <vlan_ID> ]
```

Purpose

To display spanning tree information.

Default

Displays Spanning Tree Protocol (STP) settings for the chassis as a whole.

Options & Parameters

brief	Displays settings for the common and internal spanning tree. (See page 35)
lag	Displays spanning tree information for a specified LAG. (See page 36)
mst	Displays overview information for a specified Multiple Spanning Tree (MST) instance. (See page 37)
mst summary	Displays settings for an MST instance. (See page 44)
mst <0-4094> detailed	Displays detailed information for a specified multiple spanning tree (MST) instance. (See page 37)
mst <0-4094> port	Displays spanning tree settings for an MST instance on a per-port basis. (See page 42)
port	Displays spanning tree values on a per-port basis. (See page 45)
summary	Displays spanning tree settings and lists MST instances. (See page 46)
vlan	Displays spanning tree settings for a specified VLAN. (See page 47)

Notes

Because of the complexity of this command's options, it is broken up here into multiple sections.

Example

default:

```
(FS1KCH1032000249) >show spanning-tree
```

```
Bridge Priority..... 32768
```

Bridge Identifier..... 80:00:00:1A:F6:00:03:DE
 Time Since Topology Change..... 0 day 0 hr 14 min 39 sec
 Topology Change Count..... 16
 Topology Change in progress..... FALSE
 Designated Root..... 80:00:00:1A:F6:00:03:D4
 Root Path Cost..... 0
 Root Port Identifier..... 80:13
 Bridge Max Age..... 20
 Bridge Max Hops..... 20
 Bridge Forwarding Delay..... 15
 Hello Time..... 2
 Bridge Hold Time..... 3
 CST Regional Root..... 80:00:00:1A:F6:00:03:D4
 Regional Root Path Cost..... 2000

Associated FIDs	Associated VLANs
-----	-----
1	1
10	10
20	20
1000	1000
2000	2000

2.2.16 **show spanning-tree brief**

Syntax

show spanning-tree brief

Purpose

To display settings for the common and internal spanning tree.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) >show spanning-tree brief
Bridge Priority..... 32768
Bridge Identifier..... 80:00:00:15:ED:00:02:00
Bridge Max Age..... 20
Bridge Max Hops..... 20
Bridge Hello Time..... 2
Bridge Forward Delay..... 15
Bridge Hold Time..... 3
```

2.2.17 show spanning-tree lag

Syntax

show spanning-tree lag <lag_ID>

Purpose

To display spanning tree settings for a LAG.

Options & Parameters

<lag_ID>	Specifies a LAG for which to display information.
----------	---

Example

```
(FS1KCH1032000249) > show spanning-tree lag 1
```

```
Hello Time..... 2
Port Mode..... Enabled
Port Vscale Mode..... Edge
Port Up Time Since Counters Last Cleared..... 0 day 10 hr 13 min 27 sec
STP BPDUs Transmitted..... 0
STP BPDUs Received..... 0
RSTP BPDUs Transmitted..... 0
RSTP BPDUs Received..... 0
MSTP BPDUs Transmitted..... 43
MSTP BPDUs Received..... 61
```

2.2.18 show spanning-tree mst

Syntax

```
show spanning-tree mst { summary | { <0-4094> [ detailed | lag { all summary | <lag_ID>
{ detailed | summary } } ] } | port { all summary | <slot/port> { detailed | summary } } }
```

Purpose

To display the settings for a multiple spanning tree (MST) instance, or for one or all of the switch ports within that instance.

Default

Shows overview information for the specified MST instance.

Options & Parameters

summary	When entered without specifying an MST instance, summary displays summary information for all MST IDs. (See page 44)
<0-4094>	Specifies a multiple spanning tree (MST) instance. Enter an MST identifier to show information for a specific MST instance by selecting the detailed option, or for a switch port or LAG within that instance by specifying the port or LAG.
<0-4094> detailed	Displays detailed information for the specified MST instance. (See page 37)
<0-4094> lag	Displays LAG-specific information; requires additional options. (See page 40)
<0-4094> port	Displays port-specific information; requires additional options. (See page 42)

Example

See sections below for additional examples.

default:

```
(FS1KCH1032000249) # show spanning-tree mst 0
```

```
Designated Root..... 80:00:00:1A:F6:00:00:00
Root Path Cost..... 0
Designated Bridge..... 80:00:00:1A:F6:00:00:00
```

	STP	STP	Port	
Port	Mode	Type	State	Role
3/2	Enabled		Discarding	Alternate
3/3	Enabled		Discarding	Alternate

3/12	Enabled	Forwarding	Root
7/6	Enabled	Forwarding	Designated
7/10	Enabled	Discarding	Alternate
7/11	Enabled	Discarding	Alternate
7/12	Enabled	Discarding	Alternate
8/5	Enabled	Forwarding	Designated
8/6	Enabled	Discarding	Backup
8/7	Enabled	Forwarding	Designated
8/8	Enabled	Discarding	Backup
9/9	Enabled	Forwarding	Designated
9/10	Enabled	Discarding	Backup
9/11	Enabled	Discarding	Alternate
9/12	Enabled	Discarding	Alternate

2.2.19 show spanning-tree mst detailed

Syntax

show spanning-tree mst <0-4094> detailed

Purpose

To display information for a specified multiple spanning tree (MST) instance.

Options & Parameters

<0-4094>	Specifies a multiple spanning tree (MST) instance.
----------	--

Example

(FS1KCH1032000249) > show spanning-tree mst 1 detailed

```
MST Instance ID..... 1
MST Bridge Priority..... 32768
MST Bridge Identifier..... 80:01:00:1A:F6:00:03:61
Time Since Topology Change..... 0 day 0 hr 47 min 14 sec
Topology Change Count..... 2
Topology Change in progress..... FALSE
Designated Root..... 80:01:00:1A:F6:00:03:61
Root Path Cost..... 0
Root Port Identifier..... 00:00
No FIDs or VLANs associated with this instance.
```

2.2.20 show spanning-tree mst lag

Syntax

```
show spanning-tree mst <0-4094> lag { all summary | <lag_ID> { detailed | summary } }
```

Purpose

To display the settings for one or all of the LAGs within a specified multiple spanning tree (MST) instance.

Options & Parameters

<0-4094>	Specifies a multiple spanning tree (MST) instance.
all summary	Displays LAG settings for all LAGs in the specified MST instance.
<lag_ID> detailed	Displays detailed LAG settings for the specified LAG in the specified MST instance.
< lag_ID> summary	Displays summary LAG settings for the specified LAG in the specified MST instance.

Examples

all summary:

```
(FS1KCH1032000249) > show spanning-tree mst 1 lag all summary
```

Port	STP Mode	STP Type	STP State	Port Role
LAG 1	Enabled		Discarding	Designated
LAG 2	Enabled		Forwarding	Root
LAG 3	Enabled		Discarding	Designated

detailed:

```
(FS1KCH1032000249) > show spanning-tree mst 1 lag 1 detailed
```

```
MST Instance ID..... 1
Port Identifier..... 80:92
Port Priority..... 128
Port Forwarding State..... Discarding
Port Role..... Alternate
Auto-calculate Port Path Cost..... Enabled
```

Port Path Cost..... 10000
Designated Root..... 00:01:00:1A:F6:00:03:D4
Designated Port Cost..... 0
Designated Bridge..... 00:01:00:1A:F6:00:03:D4
Designated Port Identifier..... 00:92

summary:

(FS1KCH1032000249) > show spanning-tree mst 1 lag 1 summary

MST Instance ID..... 1

	STP	STP	Port	
Port	Mode	Type	State	Role
LAG 1	Enabled		Discarding	Alternate

2.2.21 show spanning-tree mst port

Syntax

```
show spanning-tree mst <0-4094> port { all summary | <slot/port> { detailed | summary } }
```

Purpose

To display the settings for one or all of the switch ports within a specified multiple spanning tree (MST) instance.

Options & Parameters

<code><0-4094></code>	Specifies a multiple spanning tree (MST) instance.
<code>all summary</code>	Displays port settings for all ports in the specified MST instance.
<code><slot/port> detailed</code>	Displays detailed port settings for the specified port in the specified MST instance.
<code><slot/port> summary</code>	Displays summary port settings for the specified port in the specified MST instance.

Examples

all summary:

```
(FS1KCH1032000249) > show spanning-tree mst 1 port all summary
```

Port	STP Mode	STP Type	STP State	Port Role
2/1	Enabled	PC Mbr	Disabled	Disabled
2/2	Enabled	PC Mbr	Disabled	Disabled
2/3	Enabled		Disabled	Disabled

[. . .]

4/10	Enabled		Disabled	Disabled
4/11	Enabled		Disabled	Disabled
4/12	Enabled		Disabled	Disabled
LAG 1	Enabled		Disabled	Disabled
LAG 2	Enabled		Disabled	Disabled

detailed:

(FS1KCH1032000249) > show spanning-tree mst 1 port 4/2 detailed

MST Instance ID..... 1
Port Identifier..... 80:26
Port Priority..... 128
Port Forwarding State..... Disabled
Port Role..... Disabled
Auto-calculate Port Path Cost..... Enabled
Port Path Cost..... 0
Designated Root..... 80:01:00:1A:F6:00:03:61
Designated Port Cost..... 0
Designated Bridge..... 80:01:00:1A:F6:00:03:61
Designated Port Identifier..... 00:00

summary:

(FS1KCH1032000249) > show spanning-tree mst 1 port 4/2 summary

MST Instance ID..... 1

	STP	STP	Port	
Port	Mode	Type	State	Role
4/2	Enabled	PC Mbr	Disabled	Disabled

2.2.22 show spanning-tree mst summary

Syntax

show spanning-tree mst summary

Purpose

To display summary information for all multiple spanning tree (MST) instances.

Options & Parameters

This command has no additional options or parameters.

Example

(FS1KCH1032000249) > show spanning-tree mst summary

MST Instance ID..... 1
No FIDs or VLANs associated with this instance.

MST Instance ID..... 2
No FIDs or VLANs associated with this instance.

MST Instance ID..... 3
No FIDs or VLANs associated with this instance.

[. . .]

MST Instance ID..... 31
No FIDs or VLANs associated with this instance.

MST Instance ID..... 32
No FIDs or VLANs associated with this instance.

2.2.23 show spanning-tree port

Syntax

show spanning-tree port <slot/port>

Purpose

To display spanning tree values on a per port basis.

Options & Parameters

<slot/port>	Specifies the port for which to show spanning tree values.
-------------	--

Example

```
(FS1KCH1032000249) > show spanning-tree port 2/1
```

```
Hello Time..... 2
Port Mode..... Enabled
Port Up Time Since Counters Last Cleared..... 0 day 1 hr 34 min 30 sec
STP BPDUs Transmitted..... 0
STP BPDUs Received..... 0
RSTP BPDUs Transmitted..... 0
RSTP BPDUs Received..... 0
MSTP BPDUs Transmitted..... 2
MSTP BPDUs Received..... 2829
```

2.2.24 show spanning-tree summary

Syntax

show spanning-tree summary

Purpose

To display summary of spanning tree settings.

Options & Parameters

This command has no additional options or parameters.

Example

(FS1KCH1032000249) > show spanning-tree summary

```
Spanning Tree Adminmode..... Enabled
Spanning Tree Version..... IEEE 802.1s
Configuration Name..... ****
Configuration Revision Level..... ****
Configuration Digest Key..... ****
Configuration Format Selector..... 0
MST Instances..... 1,2,3,4,5,6,7,8
                    ,9,10,11,12,13,14,15,16
                    ,17,18,19,20,21,22,23,24
                    ,25,26,27,28,29,30,31,32
                    ,33,34,35,36,37,38,39,40
                    ,41,42,43,44,45,46,47,48
                    ,49,50,51,52,53,54,55,56
                    ,57,58,59,60,61,62,63,64
```

2.2.25 show spanning-tree vlan

Syntax

show spanning-tree vlan <1-4094>

Purpose

To display the type of spanning-tree associated with a specified VLAN.

Options & Parameters

<1-4094>	Specifies a valid VLAN identifier.
----------	------------------------------------

Example

(FS1KCH1032000249) > show spanning-tree vlan 500

```
VLAN Identifier..... 500
Associated Instance..... CST
```

2.2.26 show system

Syntax

show system { **cardtypes-supported** | **fabric-card** [1-6] | **fan** [1-4] | **info** | **line-card** [1-12] | **mgmt-card** [1-2] | **mibs-supported** | **power-supply** [1-6] | **status** | **version** }

Purpose

To display chassis components and system information.

Options & Parameters

cardtypes-supported	Displays the card type(s) supported by the system. (See page 49)
fabric-card [1-6]	Displays the status and details of all fabric cards or of a specified individual fabric card. (See page 50)
fan [1-4]	Displays the status of all the fan units or a specified fan unit. (See page 52)
info	Displays overall chassis information. (See page 54)
line-card [1-12]	Displays the status and details of all line cards or of a specified line card. (See page 55)
mgmt-card [1-2]	Displays the status of all management cards or the status and details of a specified management card. (See page 57)
mibs-supported	Displays the list of supported Management Information Bases (MIBs). (See page 59)
power-supply [1-6]	Displays the state and status of all power supply units or of a specified power supply unit. (See page 59)
status	Displays the status of the components in the chassis. (See page 62)
version	Displays the version details of the chassis as a whole. (See page 64)

Examples

See below for examples.

2.2.27 show system cardtypes-supported

Syntax

show system cardtypes-supported

Purpose

To display the card type(s) supported by the system.

Options & Parameters

This command has no additional options or parameters.

Example

(FS1KCH1032000249) > show system cardtypes-supported

```
CID      Card Description
-----
6  CX4 10GE 12-Port Card
7  FortiSwitch 1000 Fabric Card
10 Power CX4 10GE 12-Port Card
11 XFP 10GE 12-Port Card
12 Advanced Power CX4 10GE 12-port Card
13 Advanced XFP 10GE 12-Port Card
```

2.2.28 show system fabric-card

Syntax

show system fabric-card [1-6]

Purpose

To display the status and details of all fabric cards or of a specified individual fabric card.

Defaults

Shows status and basic information for all fabric cards.

Options & Parameters

[1-6]	Specifies an individual fabric card. If none is specified, command shows status and basic information for all fabric cards.
-------	---

Example

Default:

```
(FS1KCH1032000249) > show system fabric-card
```

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up	
1	Empty	Enable	Enable	No	
2	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
3	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
4	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
5	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
6	Full	Enable	Enable	10G Ethernet Fabric Card	Yes

For a specified fabric card:

```
(FS1KCH1032000249) > show system fabric-card 3
```

```
Slot..... 3
Slot Status..... Full
Admin State..... Enable
Power State..... Enable
Inserted Card:
  Model Identifier..... 10G Ethernet Fabric Card
  Card Description..... 10G Ethernet Fabric Card
Configured Card:
```

Model Identifier..... 10G Ethernet Fabric Card
Card Description..... 10G Ethernet Fabric Card
Powered Up..... Yes
Slot Version..... v4.0,build0202,091015
Slot Revision..... 2038M
EEPROM data:
Format Version..... 0x1
Card ID..... 0x80020001
Part Number..... 800-00180
Hardware Version..... E22-2D
Serial Number..... 1686014
MAC Address Base..... 00:1A:F6:00:05:18
MAC Address Count..... 2
Power Requirements..... 80 Watts
Manufacture Date..... 20070718
Manufacture Location..... NBSC
CRC..... 0x936 (Correct)

2.2.29 show system fan

Syntax

show system fan [1-8]

Purpose

To display the status of all the fan units or a specified fan unit.

Defaults

Shows status of all fan units.

Options & Parameters

[1-8]	Specifies an individual fan unit. If none is specified, command shows status of all fan units.
-------	--

Notes

To display fan speed, use the **show system status** command. (See page 62)

Examples

(FS1KCH1032000249) > show system fan

Slot	Status	Admin State	Power State	Configured Card Model ID	Powered Up
1	Full	Enable	Enable	Fan	Yes
2	Full	Enable	Enable	Fan	Yes
3	Empty	Enable	Enable		No
4	Full	Enable	Enable	Fan	Yes

(FS1KCH1032000249) > show system fan 1

Slot	Status	Admin State	Power State	Configured Card Model ID	Powered Up
1	Full	Enable	Enable	Fan	Yes
2	Full	Enable	Enable	Fan	Yes
3	Empty	Enable	Enable		No
4	Full	Enable	Enable	Fan	Yes

(E1) > show system fan 1

Slot..... 1

Slot Status..... Full
 Admin State..... Enable
 Power State..... Enable
 Inserted Card:
 Model Identifier..... Fan
 Card Description..... Fan
 Configured Card:
 Model Identifier..... Fan
 Card Description..... Fan
 Powered Up..... Yes
 EEPROM data:
 Format Version..... 0xffffffff
 Card ID..... 0xffffffff
 Part Number..... yyyyyyy
 Hardware Version..... yy
 Serial Number..... yyy
 MAC Address Base..... FF:FF:FF:FF:FF:FF
 MAC Address Count..... 65535
 Power **Requirements**..... 65535 Watts
 Manufacture Date..... yy
 Manufacture Location..... y
 CRC..... 0xffffffff (Incorrect)

2.2.30 show system info

Syntax

show system info

Purpose

To display overall chassis information.

Options & Parameters

This command has no additional options or parameters.

Example

```
(FS1KCH1032000249) > show system info
```

```
System Description..... FortiSwitch Ethernet Fabric Switch
System Name..... FortiSwitch-1000
System Location.....
System Contact..... Eric
System Object ID..... 1.3.6.1.4.1.26390.1
System Up Time..... 2 days 22 hrs 35 mins 41 secs
System Time..... Mon Feb 25 17:02:32 2008
```

EEPROM data:

```
Format Version..... 0x1
Card ID..... 0x80050001
Part Number..... 800-00181
Hardware Version..... 10-3
Serial Number..... 733020004
MAC Address Base..... 00:1A:F6:00:03:E0
MAC Address Count..... 2
Power Requirements..... 0 Watts
Manufacture Date..... 20070121
Manufacture Location..... TTM
CRC..... 0x941 (Correct)
```

2.2.31 show system line-card

Syntax

show system line-card [1-12]

Purpose

To display the status and details of all line cards or of a specified line card.

Defaults

Shows the status of all line cards.

Options & Parameters

[1-12]	Specifies an individual line card. If none is specified, command shows status of all line cards.
--------	--

Examples

(FS1KCH1032000249) > show system line-card

Slot	Admin Status	Power State	Powered Up	Configured Card Model ID	
1	Full	Enable	Enable	10G Ethernet CX4 Line Card	Yes
2	Full	Enable	Enable	10G Ethernet CX4 Line Card	Yes
3	Empty	Enable	Enable		No
4	Full	Enable	Enable	10G Ethernet CX4 Line Card	Yes
5	Empty	Enable	Enable		No
6	Empty	Enable	Enable		No
7	Empty	Enable	Enable		No
8	Empty	Enable	Enable		No
9	Empty	Enable	Enable		No
10	Empty	Enable	Enable		No
11	Empty	Enable	Enable		No
12	Empty	Enable	Enable		No

(FS1KCH1032000249) > show system line-card 1

Slot..... 1

Slot Status..... Full
Admin State..... Enable
Power State..... Enable
Inserted Card:
 Model Identifier..... 10G Ethernet CX4 Line Card
 Card Description..... 10G Ethernet CX4 Line Card
Configured Card:
 Model Identifier..... 10G Ethernet CX4 Line Card
 Card Description..... 10G Ethernet CX4 Line Card
Powered Up..... Yes
Slot Version..... v4.0,build0202,091015
Slot Revision..... 2082M
EEPROM data:
 Format Version..... 0x1
 Card ID..... 0x80010001
 Part Number..... 800-00179
 Hardware Version..... E23-4D
 Serial Number..... 1685018
 MAC Address Base..... 00:1A:F6:00:05:40
 MAC Address Count..... 2
 Power Requirements..... 123 Watts
 Manufacture Date..... 20070719
 Manufacture Location..... NBSC
 CRC..... 0x997 (Correct)

2.2.32 show system mgmt-card

Syntax

show system mgmt-card [1-2]

Purpose

To display the status and details of all management cards or of a specified management card.

Defaults

Shows summary status information for all management cards.

Options & Parameters

[1-2]	Specifies an individual management card. If none is specified, command shows summary status information for all management cards.
-------	---

Examples

(FS1KCH1032000249) > show system mgmt-card

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up
1	Full	Enable	Enable Management Card	Yes
2	Empty	Enable	Enable	No

(FS1KCH1032000249) > show system mgmt-card 1

```
Slot..... 1
Slot Status..... Full
Admin State..... Enable
Power State..... Enable
Inserted Card:
  Model Identifier..... Management Card
  Card Description..... Management Card
Configured Card:
  Model Identifier..... Management Card
  Card Description..... Management Card
Powered Up..... Yes
EEPROM data:
```

Format Version..... 0x0
Card ID..... 0x0
Part Number.....
Hardware Version.....
Serial Number.....
MAC Address Base..... 00:00:00:00:00:00
MAC Address Count..... 0
Power Requirements..... 0 Watts
Manufacture Date.....
Manufacture Location.....
CRC..... 0x0 (Correct)

2.2.33 show system mibs-supported

Syntax

show system mibs-supported

Purpose

To display the list of supported MIBs.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) > show system mibs-supported
```

MIBs Supported:

RFC 1907 - SNMPv2-MIB	The MIB module for SNMPv2 entities
RFC 2819 - RMON-MIB	Remote Network Monitoring Management Information Base
WOVEN-REF-MIB	Reference MIB
SNMP-COMMUNITY-MIB	This MIB module defines objects to Help support coexistence between SNMPv1, SNMPv2, and SNMPv3.SNMPv1, SNMPv2, and SNMPv3
SNMP-FRAMEWORK-MIB	The SNMP Management Architecture MIB
SNMP-MPD-MIB	The MIB for Message Processing and Dispatching
SNMP-NOTIFICATION-MIB	The Notification MIB Module
SNMP-TARGET-MIB	The Target MIB Module
SNMP-USER-BASED-SM-MIB	The management information Definitions for the SNMP User-based Security Model
SNMP-VIEW-BASED-ACM-MIB	The management information Definitions for the View-based Access Control Model for SNMP
USM-TARGET-TAG-MIB	SNMP Research, Inc.
WOVEN-POWER-ETHERNET-MIB	Power Ethernet Extensions MIB
POWER-ETHERNET-MIB	Power Ethernet MIB
LAG-MIB	The Link Aggregation module for Managing IEEE 802.3ad

[...]

RFC 1213 - RFC1213-MIB Management Information Base for
Network Management of TCP/IP-based
Internets: MIB-II

RFC 1493 - BRIDGE-MIB Definitions of Managed Objects for
Bridges dot1d)

RFC 2674 - P-BRIDGE-MIB The Bridge MIB Extension module for
Managing Priority and Multicast
Filtering, defined by IEEE 802.1D-
1998

RFC 2674 - Q-BRIDGE-MIB The VLAN Bridge MIB module for
Managing Virtual Bridged Local Area
Networks

RFC 2737 - ENTITY-MIB Entity MIB (Version 2)

RFC 2863 - IF-MIB The Interfaces Group MIB using SMIv2

RFC 3635 - Etherlike-MIB Definitions of Managed Objects for
The Ethernet-like Interface Types

FASTPATH-SWITCHING-MIB FASTPATH Switching - Layer 2

FASTPATH-INVENTORY-MIB Unit and Slot configuration

FASTPATH-PORTSECURITY-PRIVATE-MIB Port Security MIB

IEEE8021-PAE-MIB Port Access Entity module for
Managing IEEE 802.1X

FASTPATH-RADIUS-AUTH-CLIENT-MIB Fortinet FastPath Radius MIB

RADIUS-ACC-CLIENT-MIB RADIUS Accounting Client MIB

RADIUS-AUTH-CLIENT-MIB RADIUS Authentication Client MIB

[. . .]

FASTPATH-MGMT-SECURITY-MIB The Private MIB for FastPath
Mgmt Security

2.2.34 show system power-supply

Syntax

show system power-supply [1-6]

Purpose

To display the state and status of all power supply units or of a specified power supply unit.

Defaults

Shows information for all power supply units.

Options & Parameters

[1-6]	Specifies an individual power supply unit. If none is specified, command shows status of all power supply units.
-------	--

Examples

(FS1KCH1032000249) > show system power-supply

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up
1	Empty	Enable	Enable	No
2	Full	Enable	Enable Power Supply	Yes
3	Empty	Enable	Enable	No
4	Full	Enable	Enable Power Supply	Yes
5	Empty	Enable	Enable	No
6	Empty	Enable	Enable	No

(FS1KCH1032000249) > show system power-supply 3

Slot..... 3
Slot Status..... Empty
Admin State..... Enable
Power State..... Enable
Powered Up..... No

2.2.35 **show system status**

Syntax

show system status

Purpose

To display the status of the components in the chassis.

Options & Parameters

This command has no additional options or parameters.

Example

(FS1KCH1032000249) > show system status

```
System Temperature: ... normal
System Target Fan Speed: ..... 50%
Management Card 1: .. operational
Management Card 2: .. not-present
Line Card 1: ..... not-present
Line Card 2: ..... operational
Line Card 3: ..... not-present
Line Card 4: ..... not-present
Line Card 5: ..... not-present
Line Card 6: ..... not-present
Line Card 7: ..... not-present
Line Card 8: ..... not-present
Line Card 9: ..... not-present
Line Card 10: ..... not-present
Line Card 11: ..... not-present
Line Card 12: ..... not-present
Fabric Card 1: ..... not-present
Fabric Card 2: ..... operational
Fabric Card 3: ..... not-present
Fabric Card 4: ..... not-present
Fabric Card 5: ..... not-present
Fabric Card 6: ..... not-present
Power Supply 1: ..... not-present
Power Supply 2: ..... operational
Power Supply 3: ..... not-present
Power Supply 4: ..... operational
```

Power Supply 5: not-present

Power Supply 6: not-present

Fan Unit 1: operational at 3385RPM

Fan Unit 2: operational at 3239RPM

Fan Unit 3: not-present

Fan Unit 4: operational at 3284RPM

2.2.36 show system version

Syntax

show system version [both | detailed]

Purpose

To display the version details of the chassis as a whole.

Default

Displays basic information for the chassis.

Options & Parameters

both	Displays basic information for the chassis as a whole plus version information for the system software on the standby management card.
detailed	Displays detailed version information for the chassis as a whole.

Example

default:

```
(FS1KCH1032000249) > show system version
```

```
Switch: 1
```

```
System Description..... FortiSwitch Ethernet Fabric Switch
Machine Model..... FortiSwitch-1000
Chassis Serial Number..... 1872017
Software Order Code..... FS-1000-FSOS
Manufacturer..... Fortinet
Burned In MAC Address..... 00:1A:F6:00:08:C4
Software Release Version..... 1-3-0
```

both:

```
(FS1KCH1032000249) > show system version both
```

```
Switch: 1
```

```
System Description..... FortiSwitch Ethernet Fabric Switch
Machine Model..... FortiSwitch-1000
Chassis Serial Number..... 728100003
Software Order Code..... FS-1000-FSOS
Manufacturer..... Fortinet
```

Burned In MAC Address..... 00:1A:F6:00:05:AC
Software Release Version..... 1-3-0
Standby Software Release Version..... 1-3-0

detailed:

(FS1KCH1032000249) > show system version detailed

Switch: 1

System Description..... FortiSwitch Ethernet Fabric Switch
Machine Model..... FortiSwitch-1000
Chassis Serial Number..... 728100003
FRU Number..... N/A
Software Order Code..... FS-1000-FSOS
Manufacturer..... Fortinet
Burned In MAC Address..... 00:1A:F6:00:05:AC
Additional Packages..... None
Software Revision..... 3658
Architecture..... powerpc
Software Release Version..... v4.0,build02020,091015

2.2.37 show telnet

Syntax

show telnet

Purpose

To display outbound telnet configuration information.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) > show telnet
```

```
Outbound Telnet Login Timeout (minutes)..... 5
```

```
Maximum Number of Outbound Telnet Sessions..... 5
```

```
Allow New Outbound Telnet Sessions..... Yes
```

2.2.38 telnet

Syntax

telnet <ip_address> [**port** <0-65535>][**debug**][**line**][**noecho**]

Purpose

To telnet to a remote host.

Defaults

Connects to the host IP address on TCP port 23 with debug and line modes disabled and local echo enabled by default.

Options & Parameters

<ip_address>	Specifies the IP address of the host.
port <0-65535>	Connects to the specified TCP port of the host. If this option is not included, the command defaults to port 23.
debug	Enables telnet debugging mode.
line	Enables telnet linemode.
noecho	Disables local echo.

Notes

If multiple options are entered (e.g., **port**, **debug**, **line** and **noecho**), they must be entered in order.

Example

```
(FS1KCH1032000249) >telnet 10.10.10.10 port 2055 line
```

This establishes a telnet session with the host at IP address 10.10.10.10 on port 2055 with linemode enabled.

3 Enable Mode

3.1 Overview

The Enable Mode provides a full set of **show** commands, some controls for the switch as a whole, and access to Config Mode and File Mode.

3.1.1 Access

This mode is accessed by using the **enable** command in Default Mode (requires password), by using the **exit** command in Config Mode or File Mode, or by using the **end** command in the other configuration modes.

3.1.2 Exit

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

3.1.3 Commands

Command	Purpose
clear	Reset configuration to factory defaults.
clock	Set the realtime clock.
cls	Clear the screen.
configure	Enter Config Mode.
disconnect	Close active remote session(s).
exit	Exit to Default Mode.
file	Enter File Mode.
help	Display line-editing commands.
logout	Exit this session. Any unsaved changes are lost.
paging	Enable paging of the CLI display.
ping	Send ICMP echo packets to a specified IP address.
reload	Reset the switch.
show	Show configured data.

sleep	Disable the CLI for a specified number of seconds.
switchover	Switch the roles of the active and standby management cards.
tech-support save-info	Save system details for Fortinet Technical Support.
telnet	Telnet to a remote host.
traceroute	Trace route to destination.

3.1.4 clear

Syntax

```
clear { counters { <slot/port> | all | lag } | fdb-table learned { <slot/port> | all } | logging buffered | radius statistics | trap-log }
```

Purpose

To reset the running configuration to factory defaults or clear counters and logs.

Options & Parameters

counters	Clears statistics counters. (See page 72)
fdb-table learned	Clear the learned MAC entries. (See page 73)
logging buffered	Clear the buffered log. (See page 74)
radius statistics	Clear the Remote Authentication Dial-In User Service (RADIUS) statistics. (See page 75)
trap-log	Clear the SNMP trap log. (See page 76)

Example

See subsequent sections for specific examples.

3.1.5 clear counters

Syntax

`clear counters { <slot/port> | all | lag }`

Purpose

To clear statistics counters from all ports or a specified port or LAG.

Options & Parameters

<code><slot/port></code>	Specifies a port in slot/port format.
<code>all</code>	Clears statistics for all ports.
<code>lag</code>	Clears all LAG-specific counters.

Example

```
(FS1KCH1032000249) # clear counters 11/12
```

```
Are you sure you want to clear the port stats? (y/n) y
```

```
Port Stats Cleared.
```

3.1.6 clear fdb-table learned

Syntax

```
clear fdb-table learned { <slot/port> | all }
```

Purpose

To clear the Forwarding Database (FDB) of learned MAC entries for all ports or for a specified port.

Options & Parameters

<code><slot/port></code>	Specifies a port in slot/port format.
<code>all</code>	Clears learned MAC entries from all ports.

Notes

This command clears learned addresses from the FDB table, and is used primarily for debugging. To clear static addresses, use the **no** form of the **fdb-table static** command in Config-LAG Mode or Config-Port Mode. (See page 241)

Example

```
(FS1KCH1032000249) # clear fdb-table learned 4/2
```

```
Are you sure you want to clear the specified / all learned MAC entries? (y/n) n
```

```
Fdbtable MAC Entries Not Cleared.
```

3.1.7 clear logging buffered

Syntax

clear logging buffered

Purpose

To clear the buffered log.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # clear logging buffered
```

```
Are you sure you want to clear the buffered log? (y/n) n
```

```
Buffered Log Not Cleared!
```

3.1.8 clear radius statistics

Syntax

clear radius statistics

Purpose

To clear the Remote Authentication Dial-In User Service (RADIUS) server statistics.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # clear radius statistics
```

```
Are you sure you want to clear all RADIUS statistics? (y/n) n
```

```
RADIUS statistics Not Cleared.
```

3.1.9 clear trap-log

Syntax

clear trap-log

Purpose

To clear the trap log.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # clear trap-log
```

```
Are you sure you want to clear the Trap Log? (y/n) n
```

```
Trap Log Not Cleared.
```

3.1.10 clock

Syntax

clock time <hh:mm:ss> **month** <1-12> **day** <1-31> **year** <year>

Purpose

To set the realtime clock.

Options & Parameters

time <hh:mm:ss>	Specifies the current time.
month <1-12>	Specifies the current month.
day <1-31>	Specifies the current day.
year <year>	Specifies the current year (four-digits).

Notes

All “options” are required, and must be entered in the specified order.

Example

(FS1KCH1032000249) # clock time 18:35:50 month 6 day 4 year 2007

3.1.11 **cls**

Syntax

cls

Purpose

To clear the screen.

Options & Parameters

This command has no options or parameters.

3.1.12 **configure**

Syntax

configure

Purpose

To enter Config Mode.

Options & Parameters

This command has no options or parameters.

Notes

Config Mode allows configuration of switch parameters and gives access to Config-LAG and Config-Port modes.

3.1.13 disconnect

Syntax

`disconnect { <0-10> | all }`

Purpose

To close all active remote sessions or a specified active remote session.

Options & Parameters

<code><0-10></code>	Specifies a session ID to close.
<code>all</code>	Closes all active remote sessions.

Example

`(FS1KCH1032000249) # disconnect 3`

3.1.14 **exit**

Syntax

exit

Purpose

To exit from the current mode to its parent mode. In Enable Mode, this command returns the user to Default Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # exit
```

3.1.15 **file**

Syntax

file

Purpose

To enter File Mode. Gives access to File Mode commands.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # file
```

```
(FS1KCH1032000249) (File)#
```

3.1.16 help

Syntax

help

Purpose

To display the function of special editing keys.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) > help
```

```
HELP:
```

```
Special keys:
```

```
<DEL>, <BS>... delete previous character  
Ctrl-A ..... go to beginning of line  
Ctrl-E ..... go to end of line  
Ctrl-F ..... go forward one character  
Ctrl-B ..... go backward one character  
Ctrl-D ..... delete current character  
Ctrl-U, X .... delete to beginning of line  
Ctrl-K ..... delete to end of line  
Ctrl-W ..... delete previous word  
Ctrl-T ..... transpose previous character  
Ctrl-P ..... go to previous line in history buffer  
Ctrl-R ..... rewrites or pastes the line  
Ctrl-N ..... go to next line in history buffer  
Ctrl-Y ..... print last deleted character  
Ctrl-Q ..... enables serial flow  
Ctrl-S ..... disables serial flow  
Ctrl-Z ..... return to root command prompt  
Up Arrow ..... go to previous line in history buffer  
Down Arrow ... go to next line in history buffer  
Right Arrow... go forward one character  
Left Arrow ... go backward one character  
<TAB>, <SPACE> command-line completion  
Exit ..... go to next lower command prompt  
? ..... list choices
```

3.1.17 **logout**

Syntax

`logout`

Purpose

To exit this session.

Options & Parameters

This command has no options or parameters.

Notes

User is prompted to save any unsaved changes to the switch configuration. In order to save running configuration changes, the user must cancel the logout procedure and use the **copy running-config** command. (See **copy** “

Notes & Examples” on page 222)

Example

```
(FS1KCH1032000249) > logout
```

```
Warning: the system has unsaved configuration changes.
```

```
Would you like to logout now? (y/n) y
```

3.1.18 **paging**

Syntax

paging

Purpose

To enable paging of the CLI display.

Defaults

Paging is enabled by default.

Options & Parameters

This command has no options or parameters.

Notes

- When enabled, paging displays large CLI output one page (24 lines) at a time.
- When disabled (**no paging**), large volumes of CLI output scroll off the screen.

Example

```
(FS1KCH1032000249) > paging
```

3.1.19 ping

Syntax

`ping <ip_address>`

Purpose

To test the accessibility of a specified IP address by sending ICMP echo packets.

Options & Parameters

<code><ip_address></code>	Specifies the host's IP address.
---------------------------------	----------------------------------

Example

```
(FS1KCH1032000249) >ping 10.10.10.30
```

```
Send count=3, Receive count=3 from 10.10.10.30
```

3.1.20 reload

Syntax

`reload [verify | fabric-card { <1-6> | all } | line-card { <1-12> | all } | mgmt-card { <1-2> | all }]`

Purpose

To reset the entire switch, or a specified subset of the cards, without power cycling the entire switch.

Defaults

Resets all cards in the switch to the settings in the startup-config file.

Options & Parameters

verify	Resets all cards in the switch and verifies both the hard drive and the boot partition.
fabric-card { <1-6> all }	Resets all fabric cards or a specified fabric card.
line-card { <1-12> all }	Resets all line cards or a specified line card.
mgmt-card { <1-2> all }	Resets all management cards or a specified management card.

Notes

The **reload** command terminates all network connections and loads the settings from the startup-config file.

User is prompted to save changes before the command is executed.

Examples

```
(FS1KCH1032000249) # reload line-card 1
```

```
Are you sure you would like to reset the specified/All Line Card(s)? (y/n) n
```

```
(FS1KCH1032000249) # reload
```

```
The system has unsaved changes.
```

```
Would you like to save them now? (y/n)
```

3.1.21 show

The **show** commands display information about the options and settings of the switch. A limited set is available in Default Mode (see “Show Commands in Default Mode” on page 24); the complete set (including all Default Mode **show** commands) is available here in Enable Mode.

Table 5: Show Commands in Enable Mode

Command	Behavior
show arp	Display the Address Resolution Protocol (ARP) cache. (See page 90)
show authentication	Display ordered methods for authentication lists or the users assigned to a specified authentication login list. (See page 91)
show clock	Display the UTC time and date. (See page 92)
show cos dot1p-mapping	Display class-of-service (802.1p) priority mapping information. (See page 93)
show fabric-control	Display the fabric bandwidth allocation. (See page 94)
show fdb-table	Display MAC address table information from the Forwarding Database (FDB). (See page 97)
show garp	Display Generic Attribute Registration Protocol (GARP) information. (See)
show gmrp	Display GARP Multicast Registration Protocol (GMRP) port information. (See page 100)
show gvrp	Display GARP VLAN Registration Protocol (GVRP) parameters for one or all ports. (See page 101)
show history	Display the last commands entered in the CLI. (See page 102)
show ipfix	Display the Internet Protocol Flow Information Export (IPFIX) configuration. (See page 103)
show lag	Display LAG static capability and summary information for the device. (See page 104)
show logging	Display logging parameters. (See page 109)
show login-session	Display information about the current login session. (See page 111)
show mgmt-ip	Display the in-band service configuration. (See page 112)

show monitor	Display port mirror settings. (See page 114)
show port	Display port mode, status and settings for all ports or for a specified port. (See page 115)
show radius	Display Remote Authentication Dial In User Service (RADIUS) configuration information for the switch or for configured RADIUS servers. (See page 119)
show redundancy	Display the redundancy details of the management card. (See page 120)
show running-config	Display elements of the running configuration that differ from the default settings. (See page 122)
show serial	Display EIA-232 parameters and serial port inactivity timeout. (See page 124)
show snmpd	Display Simple Network Management Protocol (SNMP) community and trap flag details. (See page 125)
show snmp-trap	Display Simple Network Management Protocol (SNMP) trap receiver entries. (See page 126)
show sntp	Display Simple Network Time Protocol (SNTP) settings. (See page 126)
show spanning-tree	Display spanning tree information. (See page 129)
show startup-config	Display the configuration details saved in the startup configuration file. (See page 144)
show system	Display Chassis components and System information. (See page 145)
show task	Display sleep average information for a card. (See page 163)
show telnet	Display outbound telnet configuration information. (See page 163)
show users	Display account and authentication information for system users. (See page 166)
show vlan	Display information about a specific VLAN or a list of all configured VLANs. (See page 167)

3.1.22 show arp

Syntax

show arp

Purpose

To display Address Resolution Protocol (ARP) cache.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # show arp
```

MAC Address	IP Address	Port
00:04:96:27:C8:55	172.16.0.1	Management
00:A0:D1:E4:9B:20	172.16.0.88	Management

3.1.23 show authentication

Syntax

```
show authentication [ users <list_name> ]
```

Purpose

To display ordered methods for authentication lists or the users assigned to a specified authentication login list.

Defaults

Shows ordered methods for all lists.

Options & Parameters

users	Displays users assigned to a specified authentication login list.
<list_name>	Specifies an existing authentication list.

Notes

Authentication lists are created in Configuration Mode using the **authentication** command. (See **authentication login** on page 176)

Examples

```
(FS1KCH1032000249) # show authentication
```

```
Authentication Login List Method 1 Method 2 Method 3
-----
defaultList          local    undefined undefined
```

```
(FS1KCH1032000249) # show authentication users location1
```

```
User Name Component
-----
default      System Login
```

3.1.24 **show clock**

Syntax

show clock

Purpose

To display ordered methods for authentication lists or the users assigned to a specified authentication login list.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # show clock
```

```
System Time : Mon Dec 1 23:36:52 2008
```

3.1.25 show cos dot1p-mapping

Syntax

show cos dot1p-mapping [*slot/port*]

Purpose

To display class-of-service (802.1p) priority mapping information.

Defaults

Shows mapping of 802.1p priority to FortiSwitch OS queues.

Options & Parameters

[<i>slot/port</i>]	Specifies a port in slot/port format for which to display 802.1p priority mapping information. If mapping is not configurable by port, all ports will display identical information.
----------------------	--

Example

```
(FS1KCH1032000249) # >show cos dot1p-mapping 1/1
```

```
User Priority   Traffic Class
```

```
-----
```

0	1
1	1
2	0
3	1
4	2
5	2
6	3
7	3

3.1.26 show fabric-control

Syntax

```
show fabric-control { flow-control | multicast | partition [1-1000] | policy [slot/port] | spine |
valid-svlan }
```

Purpose

To display the fabric bandwidth allocation.

Options & Parameters

flow-control	Displays the 802.3x flow control (PAUSE) information.
mac-svlan	Displays the number of SVLANs associated with each MAC.
multicast	Displays all registered multicast addresses along with their associated VLANs and SVLANs.
partition [1-1000]	Displays the fabric partition configuration. Shows general information for all partitions by default; the optional partition number (1-1000) specifies a partition for which to show detailed information.
policy [slot/port]	Displays the fabric policy; by default, shows policy information for all ports. The optional port argument (in slot/port format) specifies a port for which to show detailed policy information.
spine	Tells whether the switch is a spine switch (default) or an edge switch, and provides SVLAN information about the switch. Note: if the switch is an edge switch (spine mode is disabled), then the rest of the fields are meaningless. Stand-alone FortiSwitch-1000 switches are always configured in spine mode; FortiSwitch-1000 switches are configured in edge mode only when they are connected and configured into a fabric.
valid-svlan	Displays IDs of all SVLANs present in the switch.

Notes

For further information about FortiSwitch fabric concepts, see “**fabric-control**” on page 180.

Examples

flow-control:

```
(FS1KCH1032000249) # show fabric-control flow-control
```

```
802.3x Flow Control Mode..... Disable
```

mac-svlan:

```
(FS1KCH1032000249) # show fabric-control mac-svlan
```

Number of SVLANs associated with each MAC..... 6

multicast:

(FS1KCH1032000249) # show fabric-control multicast

```
  Multicast Address  VLAN  SVLAN
  -----
```

partition:

(FS1KCH1032000249) # show fabric-control partition 1

```
Partition  Class  SVLAN
-----  -
          1  Default 1001, 1002, 1003, 1004
```

policy:

(FS1KCH1032000249) # show fabric-control policy 2/12

```
Port Policy Partition VLAN
-----
2/12  0    1    1-4094,
```

spine:

(FS1KCH1032000249) # show fabric-control spine

```
Spine Mode .....Enable
Spine ID .....1
Num Spine SVLANs Allocated.....6
Spine SVLANs .....1001 - 1006
Static SVLANs .....0 - 0
```

valid-svlan:

(FS1KCH1032000249) # show fabric-control valid-svlan

```
Spine      SVLAN
-----
```

- 1 1001,1002,1003,1004,1005,1006,1007,1008,
- 2 1013,1014,1015,1016,1017,1018,1019,1020,

3.1.27 show fdb-table

Syntax

```
show fdb-table { aging-time | gmrp | learned { <mac_address> | all } | multicast [mac_address] | static { <mac_address> | all } | stats }
```

Purpose

To display MAC address table information from the Forwarding Database (FDB).

Options & Parameters

aging-time	Displays forwarding database address aging timeout values.
gmrp	Displays GMRP entries in the Multicast Forwarding Database (MFDB) table.
learned { <mac_address> all }	Displays learned MAC addresses: <mac_address> specifies a 6 byte MAC address (separated by colons) for which to display information; all displays information for all learned MAC addresses.
multicast [mac_address]	Displays multicast forwarding database table information. Shows information for all ports by default; the optional <i>mac_address</i> argument specifies a 6 byte MAC address (separated by colons) for which to display information.
static { <mac_address> all }	Displays static MAC filter information: <mac_address> specifies a 6 byte MAC address (separated by colons) for which to display information; all displays information for all learned MAC addresses.
stats	Displays MFDB statistics.

Examples

aging-time:

```
(FS1KCH1032000249) # show fdb-table aging-time
```

```
Address Aging Timeout:300
```

gmrp:

```
(FS1KCH1032000249) # show fdb-table gmrp
```

```
There are currently no GMRP entries in the table.
```

learned:

```
(FS1KCH1032000249) #show fdb-table learned all
```

Mac Address	Port	IfIndex	Status
00:01:00:15:ED:01	5/1	145	Management
00:01:00:15:ED:02	3/1	15	
00:01:00:15:ED:03	3/2	15	
00:01:00:15:ED:04	3/3	15	

multicast:

(FS1KCH1032000249) #show fdb-table multicast

There are currently no entries in the table.

static:

(FS1KCH1032000249) # show fdb-table static all

MAC Filter List is Empty

stats:

(FS1KCH1032000249) # show fdb-table stats

Most Address Entries Ever Used..... 1
 Address Entries Currently in Use..... 1
 Max MFDB Table Entries..... 256
 Most MFDB Entries Since Last Reset..... 0
 Current Entries..... 0

3.1.28 show garp

Syntax

```
show garp [ statistics { port <slot/port> | lag <lag_ID> } ]
```

Purpose

To display Generic Attribute Registration Protocol (GARP) applications information.

Defaults

Displays the status of GMRP and GVRP Admin Modes by default.

Options & Parameters

statistics	Displays GARP applications PDU statistics.
port	Displays spanning tree values on a per-port basis.
<slot/port>	Specifies a port for which to display information.
lag	Displays spanning tree values on a per-LAG basis.
<lag_ID>	Specifies a LAG for which to display information.

Example

default:

```
(FS1KCH1032000249) # show garp
GMRP Admin Mode..... Disable
GVRP Admin Mode..... Disable
```

statistics port:

```
(FS1KCH1032000249) # show garp statistics port 3/1
GVRP PDUs received..... 0
GVRP PDUs Transmitted..... 0
GVRP Failed Registratons..... 0
```

statistics lag:

```
(FS1KCH1032000249) # show garp statistics lag 1
GVRP PDUs received..... 536
GVRP PDUs Transmitted..... 518
GVRP Failed Registrations..... 0
```

3.1.29 show gmrp

Syntax

show gmrp configuration { <slot/port> | **all** | **lag** <lag_ID> }

Purpose

To display GARP Multicast Registration Protocol (GMRP) port information for a specified port or LAG or for all ports.

Options & Parameters

<slot/port>	Specifies a port in slot/port format for which to display information.
all	Display GMRP information for all ports.
lag	Displays GMRP values on a per-LAG basis.
<lag_ID>	Specifies a LAG for which to display information.

Example

(FS1KCH1032000249) #show gmrp Configuration 12/10

GMRP Admin Mode..... Disable

Port	Join Timer (centiseecs)	Leave Timer (centiseecs)	LeaveAll Timer (centiseecs)	Port GMRP Mode
12/10	20	60	1000	Disabled

3.1.30 show gvrp

Syntax

`show gvrp configuration { <slot/port> | all | lag <lag_ID> }`

Purpose

To display GARP VLAN Registration Protocol (GVRP) parameters for a specified port or LAG or for all ports.

Options & Parameters

<code><slot/port></code>	Specifies a port in slot/port format for which to display information.
<code>all</code>	Displays GVRP information for all ports.
<code>lag</code>	Displays GVRP values on a per-LAG basis.
<code><lag_ID></code>	Specifies a LAG for which to display information.

Example

```
(FS1KCH1032000249) # show gvrp configuration all
GVRP Admin Mode..... Disable
      Join      Leave      LeaveAll      Port
Port   Timer    Timer      Timer      GVRP Mode
      (centiseecs) (centiseecs) (centiseecs)
-----
2/1    20         60         1000      Disabled
2/2    20         60         1000      Disabled
2/3    20         60         1000      Disabled
2/4    20         60         1000      Disabled
2/5    20         60         1000      Disabled
2/6    20         60         1000      Disabled
2/7    20         60         1000      Disabled
2/8    20         60         1000      Disabled
2/9    20         60         1000      Disabled
2/10   20         60         1000      Disabled
2/11   20         60         1000      Disabled
2/12   20         60         1000      Disabled
LAG 1   20         60         1000      Disabled
```

3.1.31 show history

Syntax

show history [*count*]

Purpose

To display the last commands entered in the CLI.

Defaults

Displays the last 10 commands.

Options & Parameters

<i><count></i>	Specifies the number of commands to display.
----------------------	--

Example

```
(FS1KCH1032000249) #show history
```

```
 1 show vlan
 2 show fdb-table
 3 show mac-addr
 4 configure
 5 vlan
 6 exit
 7 telnet
 8 enable
 9 show cos
10 show spanning-tree
```

3.1.32 show ipfix

Syntax

show ipfix

Purpose

To display the Internet Protocol Flow Information Export (IPFIX) configuration.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) #show ipfix
```

```
IPFIX Collector Address          Port
```

```
-----
```

```
10.10.10.23                    3023
```

```
10.10.10.24                    2022
```

```
Port                            IPFIX State
```

```
-----
```

```
1/1                            Enable
```

```
1/2                            Enable
```

```
1/3                            Disable
```

```
1/4                            Enable
```

```
12/10                         Enable
```

```
12/11                         Disable
```

```
12/12                         Disable
```

3.1.33 show lag

Syntax

`show lag { <1-72> [lacp | stats | vlan] | all | brief }`

Purpose

To display Link Aggregation Group (LAG) information.

Options & Parameters

<1-72>	<1-72> specifies a LAG group number for which to show information.
lacp	Shows Link Aggregation Control Protocol (LACP) information for the specified LAG.
stats	Shows LAG statistics for the specified LAG.
vlan	Shows VLAN configuration information for the specified LAG.
all	Displays general information for all LAGs.
brief	Displays LAG static capability and summary information for the switch as a whole. This form of the command is also available in Default Mode.

Notes

The **brief** option of **show lag** is also available in Default Mode.

Examples

for a specified LAG:

(FS1KCH1032000249) # show lag 1

```

                Link
LAG      LAG      Adm. Trap STP      Mbr  Port  Port
ID      Name      Link Mode Mode  Mode Protocol Ports  Speed  Active
-----
1  DEFAULT  Up  En. En. En.  None  2/1  10G Full True
                2/2  10G Full True

```

for a specified LAG with the LACP option:

(FS1KCH1032000249) # show lag 1 lacp

```

Port  LACP System      Admin  Oper  Actor LACP
Port  State  Priority  System ID  Key  Key  State
-----

```

```

1/1 Down 32768 00:1A:F6:00:08:C4 0x00000092 0x00000092 0x00000005
1/2 Down 32768 00:1A:F6:00:08:C4 0x00000092 0x00000092 0x00000005
1/3 Down 32768 00:1A:F6:00:08:C4 0x00000092 0x00000092 0x00000005
1/4 Down 32768 00:1A:F6:00:08:C4 0x00000092 0x00000092 0x00000005

```

```

          Partner
    Partner System          Partner Partner LACP
Port Port  Priority Partner ID   Admin Key Oper Key State
-----
1/1  0    0      00:00:00:00:00:00 0x00000000 0x00000000 0x00000005
1/2  98   32768 00:1A:F6:00:04:6B 0x00000000 0x00000092 0x00000037
1/3  0    0      00:00:00:00:00:00 0x00000000 0x00000000 0x00000005
1/4  0    0      00:00:00:00:00:00 0x00000000 0x00000000 0x00000005

```

```

          LACP PDUs      Marker      Marker Response      LACP PDUs LACP PDUs
Port Sent Recv Sent Recv Sent Recv Error Dropped
-----
1/1  0  0  0  0  0  0  0  0
1/2  0  0  0  0  0  0  0  0
1/3  0  0  0  0  0  0  0  0
1/4  0  0  0  0  0  0  0  0

```

for a specified LAG with the VLAN option:

(FS1KCH1032000249) # show lag 1 vlan

```

          Port Acceptable      Default
          Port VLAN ID Frame Types GVRP Priority
          -----
LAG 1  1  Admit All  Enable  0

```

all:

(FS1KCH1032000249) # show lag all

```

          Link
LAG      LAG      Adm. Trap STP Mbr  Port Port
ID      Name      Link Mode Mode Mode Ports Speed Active
-----
1  DEFAULT  Up  En. En. En. 1/1 10G Full True
          1/2 10G Full False

```


brief:

(FS1KCH1032000249) # show lag brief

LAG ID	LAG Name	Link State	Mbr Ports	Active Ports
1	DEFAULT	Up	1/1,1/2, 1/1,1/3,1/4, 1/3,1/4, 1/5,1/6 1/5,1/6	
2	DEFAULT	Up	1/7,1/8, 1/7,1/8,1/9, 1/9,1/10, 1/10,1/11, 1/11,1/12 1/12	
3	DEFAULT	Up	2/1,2/2, 2/1,2/2,2/3, 2/3,2/4, 2/4,2/5,2/6 2/5,2/6	

statistics:

(FS1KCH1032000249) # show lag 1 stats

Total Packets Received (Octets)..... 0
Total Oversize Packets Received..... 0
Packets RX and TX 64 Octets..... 0
Packets RX and TX 65-127 Octets..... 0
Packets RX and TX 128-255 Octets..... 0
Packets RX and TX 256-511 Octets..... 0
Packets RX and TX 512-1023 Octets..... 0
Packets RX and TX 1024-1518 Octets..... 0
Packets RX and TX 1519-1522 Octets..... 0
Packets RX and TX 1523-2047 Octets..... 0
Packets RX and TX 2048-4095 Octets..... 0
Packets RX and TX 4096-9216 Octets..... 0

Total Packets Received Without Errors..... 0
Unicast Packets Received..... 0
Multicast Packets Received..... 0
Broadcast Packets Received..... 0

Total Packets Received with MAC Errors..... 0
Jabbers Received..... 0
Fragments/Undersize Received..... 0
Alignment Errors..... 0
FCS Errors..... 0
Overruns..... 0

Total Packets Transmitted (Octets)..... 0

Total Packets Transmitted Successfully..... 0
Unicast Packets Transmitted..... 0
Multicast Packets Transmitted..... 0
Broadcast Packets Transmitted..... 0

Total Transmit Errors..... 0
FCS Errors..... 0
Tx Oversized..... 0
Underrun Errors..... 0

Total Transmit Packets Discarded..... 0
Single Collision Frames..... 0
Multiple Collision Frames..... 0
Excessive Collision Frames..... 0

Time Since Counters Last Cleared..... 0 day 9 hr 11 min 45 sec

3.1.34 show logging

Syntax

show logging [buffered | hosts | trap-logs]

Purpose

To display logging parameters.

Options & Parameters

buffered	Displays buffered (in-memory) log entries.
hosts	Displays logging hosts.
trap-logs	Displays trap records.

Examples

Default:

```
(FS1KCH1032000249) # show logging
```

```
Logging Client Local Port      : 514
CLI Command Logging           : disabled
Console Logging               : disabled
Console Logging Severity Filter : alert
Buffered Logging              : enabled

Syslog Logging                : disabled

Log Messages Received         : 272
Log Messages Dropped          : 0
Log Messages Relayed          : 0
Log Messages Ignored          : 0
```

Buffered:

```
(FS1KCH1032000249) # show logging buffered
```

```
Buffered (In-Memory) Logging   : enabled
Buffered Logging Wrapping Behavior : On
Buffered Log Count              : 270
```

<13> Jun 5 19:12:19 0.0.0.0-1 TRAPMGR[282482864]: traputil.c(706) 145 %% Link U
p: Unit: 1 Slot: 6 Port: 2
<13> Jun 5 19:12:19 0.0.0.0-1 TRAPMGR[282482864]: traputil.c(706) 146 %% Link U
p: Unit: 1 Slot: 6 Port: 1
<13> Jun 5 19:12:19 0.0.0.0-1 TRAPMGR[282482864]: traputil.c(706) 147 %% Link U
p: Unit: 1 Slot: 6 Port: 3
[etcetera]

Hosts:

(FS1KCH1032000249) # show logging hosts

Logging Host List Empty

Trap Logs:

(FS1KCH1032000249) # show logging trap-logs

Number of Traps Since Last Reset..... 215
Trap Log Capacity..... 256
Number of Traps Since Log Last Viewed..... 215

Log System Up Time	Trap
0 0 days 00:30:03	Multiple Users: Unit: 1 Slot: 32 Port: 1
1 0 days 00:27:21	Spanning Tree Topology Change: 32, Unit: 1
2 0 days 00:27:20	Spanning Tree Topology Change: 31, Unit: 1
3 0 days 00:27:19	Spanning Tree Topology Change: 30, Unit: 1
4 0 days 00:27:19	Spanning Tree Topology Change: 29, Unit: 1
5 0 days 00:27:18	Spanning Tree Topology Change: 28, Unit: 1

[etcetera]

3.1.35 show login-session

Syntax

show login-session

Purpose

To display information about the current login session.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) # show login-session

ID	User Name	Connection From	Idle Time	Session Time	Session Type
01	admin	10.10.20.141	00:00:00	00:32:22	Telnet

3.1.36 show mgmt-ip

Syntax

`show mgmt-ip { inband | service-port | sshd | telnetd }`

Purpose

To display management interface configuration information.

Options & Parameters

inband	Displays configuration information for in-band connectivity.
service-port	Displays service port configuration information.
sshd	Displays IP secure shell (SSH) information.
telnetd	Displays telnet configuration information.

Notes

The **sshd** and **telnetd** options are available only in Enable Mode.

Examples

Inband:

```
(FS1KCH1032000249) # show mgmt-ip inband
```

```
IP Address..... 0.0.0.0
Subnet Mask..... 0.0.0.0
Default Gateway..... 0.0.0.0
Burned In MAC Address..... 00:1A:F6:00:03:61
Locally Administered MAC Address..... 00:00:00:00:00:00
MAC Address Type..... Burned In
Network Configuration Protocol Current..... None
Management VLAN ID..... 1
```

Service-Port:

```
(FS1KCH1032000249) # show mgmt-ip service-port
```

```
IP Address..... 172.16.0.116
Subnet Mask..... 255.255.255.0
Default Gateway..... 172.16.0.1
ServPort Configured Protocol Current..... DHCP
Burned In MAC Address..... 00:1A:F6:00:03:61
```

SSHD:

SSH Configuration

Administrative Mode: Disabled
Protocol Levels: Versions 1 and 2
SSH Sessions Currently Active: 0
Max SSH Sessions Allowed: 5
SSH Timeout: 5

Telnetd:

(FS1KCH1032000249) # show mgmt-ip telnetd

Remote Connection Login Timeout (minutes)..... 5
Maximum Number of Remote Connection Sessions... 5
Allow New Telnet Sessions..... Yes

3.1.37 show monitor

Syntax

show monitor

Purpose

To display port mirror settings.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) # show monitor

Monitor Port	Source Port(Mode)
3/10	2/4(rx), 2/5(tx), 2/6(rx), 2/7(both)
4/1	1/1(rx)

3.1.38 show port

Syntax

`show port { <slot/port> [flow-control | rate-limit | stats [summary] | vlan] | all }`

Purpose

To display port mode, status and settings for all ports or for a specified port.

Options & Parameters

<code><slot/port></code>	Specifies a port for which to display information.
<code>flow-control</code>	Displays flow-control status for the specified port.
<code>rate-limit</code>	Displays rate-limit parameters for the specified port.
<code>stats</code>	Displays detailed Ethernet statistics for the specified port.
<code>vlan</code>	Displays VLAN configuration for the specified port.
<code>all</code>	Displays summary information for all ports.

Examples

all:

```
(FS1KCH1032000249) # show port all
```

```

Admin Physical Physical Link Link LACP Flow
Port Type Mode Mode Status Status Trap Mode Mode
-----
2/1 Enable 10G Full Down Enable Enable Disable
2/2 Enable 10G Full Down Enable Enable Disable
2/3 Enable 10G Full Down Enable Enable Disable
2/4 Enable 10G Full Down Enable Enable Disable
2/5 Enable 10G Full Down Enable Enable Disable
2/6 Enable 10G Full Down Enable Enable Disable
2/7 Enable 10G Full Down Enable Enable Disable
2/8 Enable 10G Full Down Enable Enable Disable
2/9 Enable 10G Full Down Enable Enable Disable
2/10 Enable 10G Full Down Enable Enable Disable
2/11 Enable 10G Full Down Enable Enable Disable
2/12 Enable 10G Full Down Enable Enable Disable
4/1 Enable 10G Full 10G Full Up Enable Enable Disable
4/2 Enable 10G Full 10G Full Up Enable Enable Disable

```

4/3	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/4	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/5	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/6	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/7	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/8	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/9	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/10	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/11	Enable	10G Full	10G Full	Up	Enable	Enable	Disable
4/12	Enable	10G Full	10G Full	Up	Enable	Enable	Disable

flow control:

(FS1KCH1032000249) # show port 2/1 flow-control

802.3x Flow Control Mode..... Disable

rate-limit:

(FS1KCH1032000249) # show port 2/1 rate-limit

Rate Limit Priority : None

stats:

(FS1KCH1032000249) # show port 2/1 stats

Total Packets Received (Octets)..... 0
Packets Received > 1522 Octets..... 0
Packets RX and TX 64 Octets..... 0
Packets RX and TX 65-127 Octets..... 0
Packets RX and TX 128-255 Octets..... 0
Packets RX and TX 256-511 Octets..... 0
Packets RX and TX 512-1023 Octets..... 0
Packets RX and TX 1024-1518 Octets..... 0
Packets RX and TX 1519-1522 Octets..... 0
Packets RX and TX 1523-2047 Octets..... 0
Packets RX and TX 2048-4095 Octets..... 0
Packets RX and TX 4096-9216 Octets..... 0

Total Packets Received Without Errors..... 0
 Unicast Packets Received..... 0
 Multicast Packets Received..... 0
 Broadcast Packets Received..... 0

Total Packets Received with MAC Errors..... 0
 Jabbers Received..... 0
 Fragments/Undersize Received..... 0
 Alignment Errors..... 0
 FCS Errors..... 0
 Overruns..... 0

Total Received Packets Not Forwarded..... 0
 Local Traffic Frames..... 0
 802.3x Pause Frames Received..... 0
 Unacceptable Frame Type..... 0
 Multicast Tree Viable Discards..... 0
 Reserved Address Discards..... 0
 Broadcast Storm Recovery..... 0
 CFI Discards..... 0
 Upstream Threshold..... 0

Total Packets Transmitted (Octets)..... 0
 Max Frame Size..... 1518

Total Packets Transmitted Successfully..... 0
 Unicast Packets Transmitted..... 0
 Multicast Packets Transmitted..... 0
 Broadcast Packets Transmitted..... 0

Total Transmit Errors..... 0
 FCS Errors..... 0
 Tx Oversized..... 0
 Underrun Errors..... 0

Total Transmit Packets Discarded..... 0
 Single Collision Frames..... 0

```

Multiple Collision Frames..... 0
Excessive Collision Frames..... 0
Port Membership Discards..... 0

802.3x Pause Frames Transmitted..... 0
GVRP PDUs received..... 0
GVRP PDUs Transmitted..... 0
GVRP Failed Registrations..... 0
GMRP PDUs Received..... 0
GMRP PDUs Transmitted..... 0
GMRP Failed Registrations..... 0

STP BPDUs Transmitted..... 0
STP BPDUs Received..... 0
RSTP BPDUs Transmitted..... 0
RSTP BPDUs Received..... 0
MSTP BPDUs Transmitted..... 0
MSTP BPDUs Received..... 0

EAPOL Frames Transmitted..... 0
EAPOL Start Frames Received..... 0

Time Since Counters Last Cleared..... 0 day 0 hr 59 min 0 sec

```

stats:

(FS1KCH1032000249) # show port 9/12 vlan

Port	Acceptable	Default		
Port	VLAN ID	Frame Types	GVRP	Priority
9/12	1	Admit All	Enable	0

3.1.39 show radius

Syntax

show radius [accounting [statistics <ip_address>] | servers | statistics [ip_address]]

Purpose

To display Remote Authentication Dial In User Service (RADIUS) configuration information for the switch or for configured RADIUS servers.

Defaults

Shows summary RADIUS information for the switch.

Options & Parameters

accounting [statistics <ip_address>]	Displays the configured RADIUS accounting mode and server. The statistics option shows statistics for the configured RADIUS accounting server.
servers	Displays overview information about the configured RADIUS server(s).
statistics [ip_address]	Displays statistics for the configured RADIUS server.

Examples

default:

(FS1KCH1032000249) # show radius

Current Server IP Address..... N/A
Number of Configured Servers..... 0
Number of Retransmits..... 4
Timeout Duration..... 5
RADIUS Accounting Mode..... Disable

accounting:

(FS1KCH1032000249) # show radius accounting

RADIUS Accounting Mode..... Disable
IP Address.....
Port..... N/A
Secret Configured..... N/A

servers:

(FS1KCH1032000249) # show radius servers

No RADIUS servers configured.

statistics:

(FS1KCH1032000249) # show radius statistics 192.168.1.203

Server IP Address.....	192.168.1.203
Round Trip Time.....	0.00
Access Requests.....	0
Access Retransmissions.....	0
Access Accepts.....	0
Access Rejects.....	0
Access Challenges.....	0
Malformed Access Responses.....	0
Bad Authenticators.....	0
Pending Requests.....	0
Timeouts.....	0
Unknown Types.....	0
Packets Dropped.....	0

3.1.40 **show redundancy**

Syntax

show redundancy

Purpose

To display the redundancy details of the management card (i.e., whether a second management card is present, and which is the active card).

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # show redundancy
```

```
Management Card 1: active
```

```
Management Card 2: standby
```

```
CPU average load: 0.09
```

```
Current checkpointing interval: 4s
```

3.1.41 show running-config

Syntax

show running-config [all]

Purpose

To display running configuration information for the switch.

Defaults

Displays the elements of the running configuration that differ from the default settings.

Options & Parameters

all	Displays the complete details of the configuration currently running on the switch.
------------	---

Example

```
(FS1KCH1032000249) # show running-config
```

```
!Current Configuration:
```

```
!
```

```
!System Description "FortiSwitch Ethernet Fabric Switch"
```

```
!System Description v4.0,build0202,091015
```

```
configure
```

```
mgmt-ip telnetd timeout 160
```

```
mgmt-ip service-port ip 172.16.0.151 255.255.255.0 172.16.0.1
```

```
vlan
```

```
vlan-id 200
```

```
exit
```

```
logging buffered
```

```
slot 2 6
```

```
slot 7 6
```

```
slot 9 6
```

```
ipfix report-timer 15
```

```
serial timeout 160
```

```
port 2/1
```

exit

port 2/2

vlan pvid 170

vlan priority 4

exit

[etc.]

3.1.42 **show serial**

Syntax

show serial

Purpose

To display EIA-232 parameters and serial port inactivity timeout.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) #show serial

```
Serial Port Login Timeout (minutes)..... 5
Baud Rate (bps)..... 115200
Character Size (bits)..... 8
Flow Control..... Disable
Stop Bits..... 1
Parity..... none
```

3.1.43 show snmpd

Syntax

`show snmpd { snmp-community | trap-flags }`

Purpose

To display Simple Network Management Protocol (SNMP) community and trap flag details.

Options & Parameters

snmp-community	Displays SNMP community entries.
trap-flags	Displays the trap flag settings of the switch. An “enable” setting causes the switch to generate the associated trap.

Examples

snmp-community:

```
(FS1KCH1032000249) # show snmpd snmp-community
```

```
SNMP Community Name Client IP Address Client IP Mask Access Mode Status
```

```
-----  
bigmuddy      0.0.0.0      0.0.0.0      Read Only Enable  
tula          0.0.0.0      0.0.0.0      Read/Write Enable
```

trap-flags:

```
(FS1KCH1032000249) # show snmpd trap-flags
```

```
Authentication Flag..... Enable  
Link Up/Down Flag..... Enable  
Multiple Users Flag..... Enable  
Spanning Tree Flag..... Enable  
Broadcast Storm Flag..... Enable
```

3.1.44 show snmp-trap

Syntax

show snmp-trap

Purpose

To display Simple Network Management Protocol (SNMP) trap entries.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # show snmp-trap
```

```
SNMP Trap Status: Enabled
```

SNMP Trap Name	IP Address	SNMP Version	Status
gomer	192.168.1.206	snmpv2	Enable
gomer	192.168.2.205	snmpv2	Enable
pyle	192.168.1.206	snmpv2	Enable
pyle	192.168.2.205	snmpv2	Enable

3.1.45 show sntp

Syntax

```
show sntp [ client | server ]
```

Purpose

To display Simple Network Time Protocol (SNTP) settings.

Defaults

Displays SNTP last SNTP update time and other status details.

Options & Parameters

client	Displays SNTP client settings.
server	Displays SNTP server settings and lists configured servers.

Examples

default:

```
(FS1KCH1032000249) # show sntp
```

```
Last Update Time:      Jan 1 00:00:00 1970
Last Unicast Attempt Time:  Jan 1 00:00:00 1970
Last Attempt Status:    Other
```

```
Broadcast Count:      0
```

client:

```
(FS1KCH1032000249) # show sntp client
```

```
Client Supported Modes:  unicast broadcast
SNTP Version:           4
Port:                   123
Client Mode:            unicast
Unicast Poll Interval:  6
Poll Timeout (seconds): 5
Poll Retry:             1
```

server:

```
(FS1KCH1032000249) # show sntp server
```

```
Server IP Address:     172.18.0.8
```

Server Type: ipv4
Server Stratum: 2
Server Reference Id: NTP Srv: 209.132.176.4
Server Mode: Server
Server Maximum Entries: 3
Server Current Entries: 2

SNTP Servers

IP Address: 172.18.0.8
Address Type: IPV4
Priority: 1
Version: 4
Port: 123
Last Update Time: Dec 2 22:49:37 2008
Last Attempt Time: Dec 1 23:34:39 2008
Last Update Status: Success
Total Unicast Requests: 1
Failed Unicast Requests: 0

IP Address: 69.25.96.13
Address Type: IPV4
Priority: 1
Version: 4
Port: 123
Last Attempt Time: Jan 1 00:00:00 1970
Last Update Status: Other
Total Unicast Requests: 0
Failed Unicast Requests: 0

3.1.46 show spanning-tree

Syntax

```
show spanning-tree [ brief | lag <lag_ID> | mst { summary | { <0-4094> { detailed | lag  
{ <lag_ID> { detailed | summary } | all summary } | port { all summary | <slot/port> { detailed |  
summary } } } } | port <slot/port> | summary | vlan <vlan_ID> ]
```

Purpose

To display spanning tree information.

Defaults

Displays Spanning Tree Protocol (STP) settings for the chassis as a whole.

Options & Parameters

brief	Displays settings for the common and internal spanning tree. (See page 131)
lag	Displays spanning tree information for a specified LAG. (See page 132)
mst	Displays overview information for a specified Multiple Spanning Tree (MST) instance. (See page 133)
mst summary	Displays information for all MST instances. (See page 140)
mst <0-4094> detailed	Displays detailed information for a specified MST instance. (See page 135)
mst <0-4094> port	Displays spanning tree settings for an MST instance on a per-port basis. (See page 138)
port	Displays spanning tree values on a per-port basis. (See page 141)
summary	Displays spanning tree settings and lists MST instances. (See page 142)
vlan	Displays spanning tree settings for a specified VLAN. (See page 143)

Notes

Because of the complexity of this command's options, it is broken up here into multiple sections.

Example

default:

(FS1KCH1032000249) #show spanning-tree

Bridge Priority..... 32768
Bridge Identifier..... 80:00:00:1A:F6:00:03:DE
Time Since Topology Change..... 0 day 0 hr 14 min 39 sec
Topology Change Count..... 16
Topology Change in progress..... FALSE
Designated Root..... 80:00:00:1A:F6:00:03:D4
Root Path Cost..... 0
Root Port Identifier..... 80:13
Bridge Max Age..... 20
Bridge Max Hops..... 20
Bridge Forwarding Delay..... 15
Hello Time..... 2
Bridge Hold Time..... 3
CST Regional Root..... 80:00:00:1A:F6:00:03:D4
Regional Root Path Cost..... 2000

Associated FIDs	Associated VLANs
-----	-----
1	1
10	10
20	20
1000	1000
2000	2000

3.1.47 **show spanning-tree brief**

Syntax

show spanning-tree brief

Purpose

To display settings for the common and internal spanning tree.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) #show spanning-tree brief
Bridge Priority..... 32768
Bridge Identifier..... 80:00:00:15:ED:00:02:00
Bridge Max Age..... 20
Bridge Max Hops..... 20
Bridge Hello Time..... 2
Bridge Forward Delay..... 15
Bridge Hold Time..... 3
```

3.1.48 show spanning-tree lag

Syntax

show spanning-tree lag <lag_ID>

Purpose

To display spanning tree settings for a LAG.

Options & Parameters

<lag_ID>	Specifies a LAG for which to display information.
----------	---

Example

```
(FS1KCH1032000249) # show spanning-tree lag 1
```

```
Hello Time..... 2
Port Mode..... Enabled
Port Vscale Mode..... Edge
Port Up Time Since Counters Last Cleared..... 0 day 10 hr 11 min 47 sec
STP BPDUs Transmitted..... 0
STP BPDUs Received..... 0
RSTP BPDUs Transmitted..... 0
RSTP BPDUs Received..... 0
MSTP BPDUs Transmitted..... 43
MSTP BPDUs Received..... 61
```

3.1.49 show spanning-tree mst

Syntax

```
show spanning-tree mst { summary | { <0-4094> [ detailed | lag { all summary | <lag_ID>
{ detailed | summary } } ] } | port { all summary | <slot/port> { detailed | summary } } } }
```

Default

Shows overview information for the specified MST instance.

Purpose

To display the settings for a multiple spanning tree (MST) instance, or for one or all of the switch ports within that instance.

Options & Parameters

summary	When entered without specifying an MST instance, summary displays summary information for all MST IDs. (See page 140)
<0-4094>	Specifies a multiple spanning tree (MST) instance. Enter an MST identifier to show information for a specific MST instance by selecting the detailed option, or for a switch port or LAG within that instance by specifying the port or LAG.
<0-4094> detailed	Displays detailed information for the specified MST instance. (See page 135)
<0-4094> lag	Displays LAG-specific information; requires additional options. (See page 136)
<0-4094> port	Displays port-specific information; requires additional options. (See page 138)

Example

See sections below for additional examples.

default:

```
(FS1KCH1032000249) # show spanning-tree mst 0
```

```
Designated Root..... 80:00:00:1A:F6:00:00:00
Root Path Cost..... 0
Designated Bridge..... 80:00:00:1A:F6:00:00:00
```

```

          STP          STP          Port
Port  Mode  Type    State    Role
-----
3/2   Enabled Discarding Alternate
```

3/3	Enabled	Discarding	Alternate
3/12	Enabled	Forwarding	Root
7/6	Enabled	Forwarding	Designated
7/10	Enabled	Discarding	Alternate
7/11	Enabled	Discarding	Alternate
7/12	Enabled	Discarding	Alternate
8/5	Enabled	Forwarding	Designated
8/6	Enabled	Discarding	Backup
8/7	Enabled	Forwarding	Designated
8/8	Enabled	Discarding	Backup
9/9	Enabled	Forwarding	Designated
9/10	Enabled	Discarding	Backup
9/11	Enabled	Discarding	Alternate
9/12	Enabled	Discarding	Alternate

3.1.50 show spanning-tree mst detailed

Syntax

show spanning-tree mst <0-4094> detailed

Purpose

To display information for a specified multiple spanning tree (MST) instance.

Options & Parameters

<0-4094>	Specifies a multiple spanning tree (MST) instance.
----------	--

Example

```
(FS1KCH1032000249) # show spanning-tree mst 1 detailed
```

```
MST Instance ID..... 1
MST Bridge Priority..... 32768
MST Bridge Identifier..... 80:01:00:1A:F6:00:03:61
Time Since Topology Change..... 0 day 0 hr 47 min 14 sec
Topology Change Count..... 2
Topology Change in progress..... FALSE
Designated Root..... 80:01:00:1A:F6:00:03:61
Root Path Cost..... 0
Root Port Identifier..... 00:00
No FIDs or VLANs associated with this instance.
```

3.1.51 show spanning-tree mst lag

Syntax

```
show spanning-tree mst <0-4094> lag { all summary | <lag_ID> { detailed | summary } }
```

Purpose

To display the settings for one or all of the LAGs within a specified multiple spanning tree (MST) instance.

Options & Parameters

<0-4094>	Specifies a multiple spanning tree (MST) instance.
all summary	Displays LAG settings for all LAGs in the specified MST instance.
<lag_ID> detailed	Displays detailed LAG settings for the specified LAG in the specified MST instance.
< lag_ID> summary	Displays summary LAG settings for the specified LAG in the specified MST instance.

Examples

all summary:

```
(FS1KCH1032000249) # show spanning-tree mst 1 lag all summary
```

Port	STP Mode	STP Type	STP State	Port Role
LAG 1	Enabled		Discarding	Designated
LAG 2	Enabled		Forwarding	Root
LAG 3	Enabled		Discarding	Designated

detailed:

```
(FS1KCH1032000249) # show spanning-tree mst 1 lag 1 detailed
```

```
MST Instance ID..... 1
Port Identifier..... 80:92
Port Priority..... 128
Port Forwarding State..... Discarding
Port Role..... Alternate
Auto-calculate Port Path Cost..... Enabled
```

Port Path Cost..... 10000
Designated Root..... 00:01:00:1A:F6:00:03:D4
Designated Port Cost..... 0
Designated Bridge..... 00:01:00:1A:F6:00:03:D4
Designated Port Identifier..... 00:92

summary:

(FS1KCH1032000249) # show spanning-tree mst 1 lag 1 summary

MST Instance ID..... 1

	STP	STP	Port	
Port	Mode	Type	State	Role
LAG 1	Enabled		Discarding	Alternate

3.1.52 show spanning-tree mst port

Syntax

```
show spanning-tree mst <0-4094> port { all summary | <slot/port> { detailed | summary } }
```

Purpose

To display the settings for one or all of the switch ports within a specified multiple spanning tree (MST) instance.

Options & Parameters

<code><0-4094></code>	Specifies a multiple spanning tree (MST) instance.
<code>all summary</code>	Displays port settings for all ports in the specified MST instance.
<code><slot/port> detailed</code>	Displays detailed port settings for the specified port in the specified MST instance.
<code><slot/port> summary</code>	Displays summary port settings for the specified port in the specified MST instance.

Examples

all summary:

```
(FS1KCH1032000249) # show spanning-tree mst 1 port all summary
```

```
      STP      STP      Port
Port  Mode  Type   State   Role
-----
2/1   Enabled PC Mbr Disabled Disabled
2/2   Enabled PC Mbr Disabled Disabled
2/3   Enabled      Disabled Disabled
```

[. . .]

```
4/10  Enabled      Disabled Disabled
4/11  Enabled      Disabled Disabled
4/12  Enabled      Disabled Disabled
LAG 1  Enabled      Disabled Disabled
LAG 2  Enabled      Disabled Disabled
```

detailed:

(FS1KCH1032000249) # show spanning-tree mst 1 port 4/2 detailed

MST Instance ID..... 1
Port Identifier..... 80:26
Port Priority..... 128
Port Forwarding State..... Disabled
Port Role..... Disabled
Auto-calculate Port Path Cost..... Enabled
Port Path Cost..... 0
Designated Root..... 80:01:00:1A:F6:00:03:61
Designated Port Cost..... 0
Designated Bridge..... 80:01:00:1A:F6:00:03:61
Designated Port Identifier..... 00:00

summary:

(FS1KCH1032000249) # show spanning-tree mst 1 port 4/2 summary

MST Instance ID..... 1

	STP	STP	Port	
Port	Mode	Type	State	Role
4/2	Enabled	PC Mbr	Disabled	Disabled

3.1.53 **show spanning-tree mst summary**

Syntax

show spanning-tree mst summary

Purpose

To display summary information for all multiple spanning tree (MST) instances.

Options & Parameters

This command has no additional options or parameters.

Example

```
(FS1KCH1032000249) # show spanning-tree mst summary
```

```
MST Instance ID..... 1  
No FIDs or VLANs associated with this instance.
```

```
MST Instance ID..... 2  
No FIDs or VLANs associated with this instance.
```

```
MST Instance ID..... 3  
No FIDs or VLANs associated with this instance.
```

```
[ . . . ]
```

```
MST Instance ID..... 31  
No FIDs or VLANs associated with this instance.
```

```
MST Instance ID..... 32  
No FIDs or VLANs associated with this instance.
```

3.1.54 show spanning-tree port

Syntax

show spanning-tree port <slot/port>

Purpose

To display spanning tree values on a per port basis.

Options & Parameters

<slot/port>	Specifies the port for which to show spanning tree values.
-------------	--

Example

```
(FS1KCH1032000249) # show spanning-tree port 2/1
```

```
Hello Time..... 2
Port Mode..... Enabled
Port Up Time Since Counters Last Cleared..... 0 day 1 hr 34 min 30 sec
STP BPDUs Transmitted..... 0
STP BPDUs Received..... 0
RSTP BPDUs Transmitted..... 0
RSTP BPDUs Received..... 0
MSTP BPDUs Transmitted..... 2
MSTP BPDUs Received..... 2829
```

3.1.55 **show spanning-tree summary**

Syntax

show spanning-tree summary

Purpose

To display summary of spanning tree settings.

Options & Parameters

This command has no additional options or parameters.

Example

(FS1KCH1032000249) # show spanning-tree summary

```
Spanning Tree Adminmode..... Enabled
Spanning Tree Version..... IEEE 802.1s
Configuration Name..... ****
Configuration Revision Level..... ****
Configuration Digest Key..... ****
Configuration Format Selector..... 0
MST Instances..... 1,2,3,4,5,6,7,8
                    ,9,10,11,12,13,14,15,16
                    ,17,18,19,20,21,22,23,24
                    ,25,26,27,28,29,30,31,32
                    ,33,34,35,36,37,38,39,40
                    ,41,42,43,44,45,46,47,48
                    ,49,50,51,52,53,54,55,56
                    ,57,58,59,60,61,62,63,64
```

3.1.56 **show spanning-tree vlan**

Syntax

show spanning-tree vlan <1-4094>

Purpose

To display the type of spanning-tree associated with a specified VLAN.

Options & Parameters

<1-4094>	Specifies a valid VLAN identifier.
----------	------------------------------------

Example

```
(FS1KCH1032000249) # show spanning-tree vlan 500
```

```
VLAN Identifier..... 500
```

```
Associated Instance..... CST
```

3.1.57 show startup-config

Syntax

show startup-config

Purpose

To display the configuration details saved in the startup configuration file.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # show startup-config
```

```
!Current Configuration:
```

```
!
```

```
!System Description "FortiSwitch Ethernet Fabric Switch"
```

```
!System Description REL-1.0.0-BETA built on rhe3 at Fri Jun 1 09:54:46 PDT 2007
```

```
by build
```

```
!
```

```
configure
```

```
mgmt-ip telnetd timeout 160
```

```
mgmt-ip service-port ip 172.16.0.151 255.255.255.0 172.16.0.1
```

```
vlan
```

```
exit
```

```
logging buffered
```

```
slot 2 6
```

```
slot 7 6
```

```
slot 9 6
```

```
ipfix report-timer 15
```

```
serial timeout 160
```

```
port 2/1
```

```
exit
```

```
port 2/2
```

```
exit
```

```
port 2/3
```

```
exit
```

```
[etc.]
```

3.1.58 show system

Syntax

show system { **cardtypes-supported** | **fabric-card** [1-6] | **fan** [1-4] | **info** | **line-card** [1-12] | **mgmt-card** [1-2] | **mibs-supported** | **power-supply** [1-6] | **status** | **version** }

Purpose

To display chassis components and system information.

Options & Parameters

cardtypes-supported	Displays the card type(s) supported by the system. (See page 146 and page 49)
fabric-card [1-6]	Displays the status and details of all fabric cards or of a specified individual fabric card. (See page 146)
fan [1-4]	Displays the status of all the fan units or a specified fan unit. (See page 149)
info	Displays overall chassis information. (See page 151)
line-card [1-12]	Displays the status and details of all line cards or of a specified line card. (See page 152)
mgmt-card [1-2]	Displays the status of all management cards or the status and details of a specified management card. (See page 154)
mibs-supported	Displays the list of supported Management Information Bases (MIBs). (See page 156)
power-supply [1-6]	Displays the state and status of all power supply units or of a specified power supply unit. (See page 158)
status	Displays the status of the components in the chassis. (See page 159)
version	Displays the version details of the chassis as a whole. (See page 161)

Examples

See below for examples.

3.1.59 **show system cardtypes-supported**

Syntax

show system cardtypes-supported

Purpose

To display the card type(s) supported by the system.

Options & Parameters

This command has no additional options or parameters.

Example

(FS1KCH1032000249) > show system cardtypes-supported

```
CID      Card Description
-----
6  CX4 10GE 12-Port Card
7  FortiSwitch1000 Fabric Card
10 Power CX4 10GE 12-Port Card
11 XFP 10GE 12-Port Card
12 Advanced Power CX4 10GE 12-port Card
13 Advanced XFP 10GE 12-Port Card
```

3.1.60 show system fabric-card

Syntax

show system fabric-card [1-6]

Purpose

To display the status and details of all fabric cards or of a specified individual fabric card.

Defaults

Shows status and basic information for all fabric cards.

Options & Parameters

[1-6]	Specifies an individual fabric card. If none is specified, command shows status and basic information for all fabric cards.
-------	---

Example

Default:

(FS1KCH1032000249) # show system fabric-card

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up	
1	Empty	Enable	Enable	No	
2	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
3	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
4	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
5	Full	Enable	Enable	10G Ethernet Fabric Card	Yes
6	Full	Enable	Enable	10G Ethernet Fabric Card	Yes

For a specified line card:

(FS1KCH1032000249) # show system fabric-card

```
Slot..... 3
Slot Status..... Full
Admin State..... Enable
Power State..... Enable
Inserted Card:
  Model Identifier..... 10G Ethernet Fabric Card
  Card Description..... 10G Ethernet Fabric Card
Configured Card:
```

Model Identifier..... 10G Ethernet Fabric Card
Card Description..... 10G Ethernet Fabric Card
Powered Up..... Yes
Slot Version..... REL-1.2.0-BETA built on rhe3 at Mon Feb 18 11:26:36 PST 2008 by
build
Slot Revision..... 2038M
EEPROM data:
Format Version..... 0x1
Card ID..... 0x80020001
Part Number..... 800-00180
Hardware Version..... E22-2D
Serial Number..... 1686014
MAC Address Base..... 00:1A:F6:00:05:18
MAC Address Count..... 2
Power Requirements..... 80 Watts
Manufacture Date..... 20070718
Manufacture Location..... NBSC
CRC..... 0x936 (Correct)

3.1.61 show system fan

Syntax

show system fan [1-8]

Purpose

To display the status of all the fan units or a specified fan unit.

Defaults

Shows status of all fan units.

Options & Parameters

[1-8]	Specifies an individual fan unit. If none is specified, command shows status of all fan units.
-------	--

Notes

To display fan speed, use the **show system status** command. (See page 62)

Examples

(FS1KCH1032000249) # show system fan

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up
1	Full	Enable	Enable Fan	Yes
2	Full	Enable	Enable Fan	Yes
3	Empty	Enable	Enable	No
4	Full	Enable	Enable Fan	Yes

(FS1KCH1032000249) > show system fan 1

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up
1	Full	Enable	Enable Fan	Yes
2	Full	Enable	Enable Fan	Yes
3	Empty	Enable	Enable	No
4	Full	Enable	Enable Fan	Yes

(E1) > show system fan 1

Slot..... 1

3.1.62 **show system info**

Syntax

show system info

Purpose

To display overall chassis information.

Options & Parameters

This command has no additional options or parameters.

Example

```
(FS1KCH1032000249) # show system info
```

```
System Description..... FortiSwitch Ethernet Fabric Switch
System Name..... FortiSwitch-1000
System Location.....
System Contact..... Eric
System Object ID..... 1.3.6.1.4.1.26390.1
System Up Time..... 2 days 22 hrs 35 mins 41 secs
System Time..... Mon Feb 25 17:02:32 2008
```

EEPROM data:

```
Format Version..... 0x1
Card ID..... 0x80050001
Part Number..... 800-00181
Hardware Version..... 10-3
Serial Number..... 733020004
MAC Address Base..... 00:1A:F6:00:03:E0
MAC Address Count..... 2
Power Requirements..... 0 Watts
Manufacture Date..... 20070121
Manufacture Location..... TTM
CRC..... 0x941 (Correct)
```

3.1.63 show system line-card

Syntax

show system line-card [1-12]

Purpose

To display the status and details of all line cards or of a specified line card.

Defaults

Shows the status of all line cards.

Options & Parameters

[1-12]	Specifies an individual line card. If none is specified, command shows status of all line cards.
--------	--

Examples

(FS1KCH1032000249) # show system line-card

Slot	Admin Status	Power State	Configured State	Card Model ID	Powered Up
1	Full	Enable	Enable	10G Ethernet CX4 Line Card	Yes
2	Full	Enable	Enable	10G Ethernet CX4 Line Card	Yes
3	Empty	Enable	Enable		No
4	Full	Enable	Enable	10G Ethernet CX4 Line Card	Yes
5	Empty	Enable	Enable		No
6	Empty	Enable	Enable		No
7	Empty	Enable	Enable		No
8	Empty	Enable	Enable		No
9	Empty	Enable	Enable		No
10	Empty	Enable	Enable		No
11	Empty	Enable	Enable		No
12	Empty	Enable	Enable		No

(FS1KCH1032000249) # show system line-card 1

Slot..... 1

Slot Status..... Full
Admin State..... Enable
Power State..... Enable
Inserted Card:
 Model Identifier..... 10G Ethernet CX4 Line Card
 Card Description..... 10G Ethernet CX4 Line Card
Configured Card:
 Model Identifier..... 10G Ethernet CX4 Line Card
 Card Description..... 10G Ethernet CX4 Line Card
Powered Up..... Yes
Slot Version..... v4.0,build0202,091015
Slot Revision..... 2082M
EEPROM data:
 Format Version..... 0x1
 Card ID..... 0x80010001
 Part Number..... 800-00179
 Hardware Version..... E23-4D
 Serial Number..... 1685018
 MAC Address Base..... 00:1A:F6:00:05:40
 MAC Address Count..... 2
 Power Requirements..... 123 Watts
 Manufacture Date..... 20070719
 Manufacture Location..... NBSC
 CRC..... 0x997 (Correct)

3.1.64 show system mgmt-card

Syntax

show system mgmt-card [1-2]

Purpose

To display the status and details of all management cards or of a specified management card.

Defaults

Shows summary status information for all management cards.

Options & Parameters

[1-2]	Specifies an individual management card. If none is specified, command shows summary status information for all management cards.
-------	---

Examples

(FS1KCH1032000249) # show system mgmt-card

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up
1	Full	Enable	Enable Management Card	Yes
2	Empty	Enable	Enable	No

(FS1KCH1032000249) > show system mgmt-card 1

```
Slot..... 1
Slot Status..... Full
Admin State..... Enable
Power State..... Enable
Inserted Card:
  Model Identifier..... Management Card
  Card Description..... Management Card
Configured Card:
  Model Identifier..... Management Card
  Card Description..... Management Card
Powered Up..... Yes
EEPROM data:
```

Format Version..... 0x0
Card ID..... 0x0
Part Number.....
Hardware Version.....
Serial Number.....
MAC Address Base..... 00:00:00:00:00:00
MAC Address Count..... 0
Power Requirements..... 0 Watts
Manufacture Date.....
Manufacture Location.....
CRC..... 0x0 (Correct)

3.1.65 **show system mibs-supported**

Syntax

show system mibs-supported

Purpose

To display the list of supported MIBs.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) # show system mibs-supported
```

MIBs Supported:

RFC 1907 - SNMPv2-MIB	The MIB module for SNMPv2 entities
RFC 2819 - RMON-MIB	Remote Network Monitoring Management Information Base
WOVEN-REF-MIB	Reference MIB
SNMP-COMMUNITY-MIB	This MIB module defines objects to Help support coexistence between SNMPv1, SNMPv2, and SNMPv3.SNMPv1, SNMPv2, and SNMPv3
SNMP-FRAMEWORK-MIB	The SNMP Management Architecture MIB
SNMP-MPD-MIB	The MIB for Message Processing and Dispatching
SNMP-NOTIFICATION-MIB	The Notification MIB Module
SNMP-TARGET-MIB	The Target MIB Module
SNMP-USER-BASED-SM-MIB	The management information Definitions for the SNMP User-based Security Model
SNMP-VIEW-BASED-ACM-MIB	The management information Definitions for the View-based Access Control Model for SNMP
USM-TARGET-TAG-MIB	SNMP Research, Inc.
WOVEN-POWER-ETHERNET-MIB	Power Ethernet Extensions MIB
POWER-ETHERNET-MIB	Power Ethernet MIB
LAG-MIB	The Link Aggregation module for Managing IEEE 802.3ad

[...]

RFC 1213 - RFC1213-MIB Management Information Base for
Network Management of TCP/IP-based
Internets: MIB-II

RFC 1493 - BRIDGE-MIB Definitions of Managed Objects for
Bridges dot1d)

RFC 2674 - P-BRIDGE-MIB The Bridge MIB Extension module for
Managing Priority and Multicast
Filtering, defined by IEEE 802.1D-
1998

RFC 2674 - Q-BRIDGE-MIB The VLAN Bridge MIB module for
Managing Virtual Bridged Local Area
Networks

RFC 2737 - ENTITY-MIB Entity MIB (Version 2)

RFC 2863 - IF-MIB The Interfaces Group MIB using SMIv2

RFC 3635 - Etherlike-MIB Definitions of Managed Objects for
The Ethernet-like Interface Types

FASTPATH-SWITCHING-MIB FASTPATH Switching - Layer 2

FASTPATH-INVENTORY-MIB Unit and Slot configuration

FASTPATH-PORTSECURITY-PRIVATE-MIB Port Security MIB

IEEE8021-PAE-MIB Port Access Entity module for
Managing IEEE 802.1X

FASTPATH-RADIUS-AUTH-CLIENT-MIB FastPath Radius MIB

RADIUS-ACC-CLIENT-MIB RADIUS Accounting Client MIB

RADIUS-AUTH-CLIENT-MIB RADIUS Authentication Client MIB

[. . .]

FASTPATH-MGMT-SECURITY-MIB The Private MIB for FastPath
Mgmt Security

3.1.66 show system power-supply

Syntax

show system power-supply [1-6]

Purpose

To display the state and status of all power supply units or of a specified power supply unit.

Defaults

Shows information for all power supply units.

Options & Parameters

[1-6]	Specifies an individual power supply unit. If none is specified, command shows status of all power supply units.
-------	--

Examples

```
(FS1KCH1032000249) # show system power-supply
```

Slot	Admin Status	Power State	Configured Card Model ID	Powered Up
1	Empty	Enable	Enable	No
2	Full	Enable	Enable Power Supply	Yes
3	Empty	Enable	Enable	No
4	Full	Enable	Enable Power Supply	Yes
5	Empty	Enable	Enable	No
6	Empty	Enable	Enable	No

```
(FS1KCH1032000249) # show system power-supply 3
```

```
Slot..... 3
Slot Status..... Empty
Admin State..... Enable
Power State..... Enable
Powered Up..... No
```

3.1.67 **show system status**

Syntax

show system status

Purpose

To display the status of the components in the chassis.

Options & Parameters

This command has no additional options or parameters.

Example

```
(FS1KCH1032000249) # show system status
```

```
System Temperature: ... normal
System Target Fan Speed: ..... 50%
Management Card 1: .. operational
Management Card 2: .. not-present
Line Card 1: ..... not-present
Line Card 2: ..... operational
Line Card 3: ..... not-present
Line Card 4: ..... not-present
Line Card 5: ..... not-present
Line Card 6: ..... not-present
Line Card 7: ..... not-present
Line Card 8: ..... not-present
Line Card 9: ..... not-present
Line Card 10: ..... not-present
Line Card 11: ..... not-present
Line Card 12: ..... not-present
Fabric Card 1: ..... not-present
Fabric Card 2: ..... operational
Fabric Card 3: ..... not-present
Fabric Card 4: ..... not-present
Fabric Card 5: ..... not-present
Fabric Card 6: ..... not-present
Power Supply 1: ..... not-present
Power Supply 2: ..... operational
Power Supply 3: ..... not-present
Power Supply 4: ..... operational
```

Power Supply 5: not-present

Power Supply 6: not-present

Fan Unit 1: operational at 3385RPM

Fan Unit 2: operational at 3239RPM

Fan Unit 3: not-present

Fan Unit 4: operational at 3284RPM

3.1.68 show system version

Syntax

`show system version [both | detailed]`

Purpose

To display the version details of the chassis as a whole.

Default

Displays basic information for the chassis.

Options & Parameters

both	Displays basic information for the chassis as a whole plus version information for the system software on the standby management card.
detailed	Displays detailed version information for the chassis as a whole.

Example

default:

```
(FS1KCH1032000249) # show system version
```

```
Switch: 1
```

```
System Description..... FortiSwitch Ethernet Fabric Switch
Machine Model..... FortiSwitch-1000
Chassis Serial Number..... 1872017
Software Order Code..... FS-1000-FSOS
Manufacturer..... Fortinet
Burned In MAC Address..... 00:1A:F6:00:08:C4
Software Release Version..... REL-1.3dev
```

both:

```
(FS1KCH1032000249) # show system version both
```

```
Switch: 1
```

```
System Description..... FortiSwitch Ethernet Fabric Switch
Machine Model..... FortiSwitch-1000
Chassis Serial Number..... 728100003
Software Order Code..... FS-1000-FSOS
Manufacturer..... Fortinet
```

Burned In MAC Address..... 00:1A:F6:00:05:AC
Software Release Version..... REL-1.3dev
Standby Software Release Version..... REL-1.3dev

detailed:

(FS1KCH1032000249) # show system version detailed

Switch: 1

System Description..... FortiSwitch Ethernet Fabric Switch
Machine Model..... FortiSwitch-1000
Chassis Serial Number..... 728100003
FRU Number..... N/A
Software Order Code..... FS-1000-FSOS
Manufacturer..... Fortinet
Burned In MAC Address..... 00:1A:F6:00:05:AC
Additional Packages..... None
Software Revision..... 3658
Architecture..... powerpc
Software Release Version..... v4.0,build0202,091015

3.1.69 show task

Syntax

show task { sleep-average | line-card <1-12> sleep-average | fabric-card <1-6> sleep-average }

Purpose

To display the sleep average information for a card.

Options & Parameters

sleep-average	Displays the sleep average information for the active management card.
line-card <1-12> sleep-average	Displays the sleep average information for the specified line card (<1-12> specifies which line card).
fabric-card <1-6> sleep-average	Displays the sleep average information for the specified fabric card (<1-6> specifies which fabric card).

Examples

Active management card information:

(FS1KCH1032000249) # show task sleep-average

Task ID	Task Name	Average Sleep Percent
619	CheckpointTask	88%
604	updateLineCard	98%
[...]		
539	osapiTimer	98%
538	LOG	0%

60 tasks currently active in the system.

line-card:

(fortiswitch_canvas_2-2-34) # show task line-card 6 sleep-average

Task ID	Task Name	Average Sleep Percent
398	iodrvr	100%
399	OobcTask	100%
[...]		
414	IpFixThread	100%
415	vspPbTask	100%

17 tasks currently active.

3.1.70 **show telnet**

Syntax

show telnet

Purpose

To display outbound telnet configuration information.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) > show telnet

```
Outbound Telnet Login Timeout (minutes)..... 5
Maximum Number of Outbound Telnet Sessions..... 5
Allow New Outbound Telnet Sessions..... Yes
```

3.1.71 show users

Syntax

```
show users [authentication]
```

Purpose

To display account and authentication information for system users.

Defaults

Displays general user account information.

Options & Parameters

authentication

Displays all users with assigned authentication login lists and the lists assigned to them.

Examples

default:

```
(FS1KCH1032000249) # show users
```

```
                SNMPv3    SNMPv3    SNMPv3
User Name  User Access Mode  Access Mode  Authentication  Encryption
-----  -
admin      Read/Write           Read/Write  None            None
guest      Read Only            Read Only   None            None
```

authentication:

```
(FS1KCH1032000249) # show users authentication
```

Authentication Login Lists

```
    User      System Login    802.1x
-----  -
admin      defaultList    defaultList
guest      defaultList    defaultList
default    defaultList    defaultList
```

3.1.72 show vlan

Syntax

```
show vlan { <1-4094> | brief }
```

Purpose

To display information about a specific VLAN or a list of all configured VLANs.

Options & Parameters

<code><1-4094></code>	Displays detailed information about the specified VLAN.
<code>brief</code>	Displays all configured VLANs, their names and types.

Examples

specific VLAN:

```
(FS1KCH1032000249) # show vlan 1
```

```
VLAN ID: 1
```

```
VLAN Name: Default
```

```
VLAN Type: Default
```

```
Interface Current Configured Tagging
```

```
-----  
2/1      Include Include Untagged  
2/2      Include Include Untagged  
2/3      Include Include Untagged  
2/4      Include Include Untagged  
2/5      Include Include Untagged  
2/6      Include Include Untagged  
2/7      Include Include Untagged  
2/8      Include Include Untagged  
2/9      Include Include Untagged  
2/10     Include Include Untagged  
2/11     Include Include Untagged  
2/12     Include Include Untagged  
[etc.]
```

brief:

```
(FS1KCH1032000249) # show vlan brief
```

VLAN ID	VLAN Name	VLAN Type
1	Default	Default

3.1.73 **sleep**

Syntax

sleep <1-600>

Purpose

To pause the CLI for a specified number of seconds. Mainly used for troubleshooting using CLI scripts.

Options & Parameters

<1-600>	Specifies the number of seconds.
---------	----------------------------------

Notes

It is sometimes useful to insert a sleep statement between two commands in a CLI script to allow the previous command some time to conclude before executing the next command.

This command has no effect on other running processes; its only effect is to pause the CLI process and prevent further command execution for the specified number of seconds.

Example

```
(FS1KCH1032000249) # sleep 30
```

3.1.74 **switchover**

Syntax

switchover

Purpose

To switch the roles of the management cards (active to standby and vice versa).

Options & Parameters

This command has no options or parameters.

Notes

This command has no effect on systems with only one management card.

Example

```
(FS1KCH1032000249) # switchover
```

```
There is no standby management card
```

```
Switchover Not Done!
```

3.1.75 **tech-support save-info**

Syntax

tech-support save-info

Purpose

To save system status information for use by Fortinet Technical Support.

Options & Parameters

This command has no additional options or parameters.

Notes

This command creates a file which captures system and configuration status information to assist Fortinet Technical Support in diagnosing and troubleshooting issues with the switch. Once the file is created, retrieve it using FTP or TFTP and send it Fortinet Technical Support.

Example

```
(FS1KCH1032000249) # tech-support save-info
```

The resulting file will appear in the main directory of the active management card's internal disk, with a file name of the format `TAC_CHASSIS-support-date-time`.

3.1.76 **telnet**

(See “telnet” on page 67)

3.1.77 traceroute

Syntax

`traceroute <ip_address> [0-65535]`

Purpose

To trace the routes that packets take through the network hop by hop.

Defaults

The default port value is 3343.

Options & Parameters

<code><ip_address></code>	Specifies the destination IP address.
<code>[0-65535]</code>	Specifies the destination port. If not specified, the default port value is 3343.

Example

```
(FS1KCH1032000249) # traceroute 172.16.0.118
```

Tracing route over a maximum of 20 hops

```
1          *      *      *
2          *      *      *
3          *      *      *
4          *      *      *
[etc.]
```

4 Config Mode

4.1 Overview

The Config Mode provides configuration commands for the switch as a whole, plus access to the other configuration modes.

4.1.1 Access

This mode is accessed by using the **config** command in Enable Mode or by using the **exit** command in the other configuration modes.

4.1.2 Exit

To exit from this mode, use the **exit** or **end** command to return to enable Mode.

4.2 Commands

Command	Purpose
authentication	Configure an authentication list.
cos	Configure Class of Service parameters.
end	Exit to Enable Mode.
exit	Exit to Enable Mode.
fabric-control	Configure the bandwidth allocation of the fabric.
fdb-table	Configure forwarding database parameters.
garp	Configure Generic Attribute Registration Protocol parameters.
gmrp	Set GARP Multicast Registration Protocol parameters.
gvrp	Set GARP VLAN Registration Protocol parameters.
ipfix	Configure IPFIX parameters.
lag	Enter Config-LAG Mode to create and configure a new LAG or to configure an existing LAG.
logging	Logging Configuration.
mac-internal-learning	Enables software learning of MAC addresses on the switch.

mgmt-ip	Configure management IP protocols and parameters.
port	Enter into Config-Port Mode.
prompt	Change the system prompt.
radius	Configure RADIUS parameters.
serial	Configure EIA-232 parameters and inactivity timeout.
slot	Configure slots.
snmpd	Set Simple Network Management Protocol daemon (SNMPd) options and parameters.
snmp-trap	Enable trap flags that apply to the switch.
sntp	Configure Simple Network Time Protocol parameters.
spanning-tree	Set the spanning tree operational mode.
system	Enable power mode or admin mode of a line or fabric card.
users	Manage users and user accounts.
vlan	Enter Config-VLAN Mode to configure VLAN parameters.

4.2.1 authentication login

Syntax

authentication login <list_name> [local] [radius] [reject] [tacacs]

Purpose

To create, delete and/or configure an authentication list with up to three authentication methods.

Defaults

In the absence of a custom list, the system by default uses local authentication only. If no method is supplied for a newly created list, the default method is **local**.

Options & Parameters

<list_name>	Specifies the name of the authentication login list. If the name is not currently in use, this creates a new list using that name.
local	Specifies use of a locally stored ID and password for authentication.
radius	Specifies use of a Remote Authentication Dial In User Service (RADIUS) server for user authentication.
reject	When entered as the primary authentication method, reject prevents authentication of the users on the specified list.
tacacs	Specifies use of a Terminal Access Controller Access-Control System (TACACS) server for user authentication. Note: TACACS servers are not supported by the switch in the current release.

Notes

- Use the **show authentication** command in Enable Mode to display existing authentication list(s).
- Use **no authentication login** and the list name to delete an existing list.
- Up to three authentication methods can be specified for the list.

Example

```
(FS1KCH1032000249) (Config)# authentication login list1 radius reject
```

4.2.2 cos dot1p-mapping

Syntax

cos dot1p-mapping <0-7> <0-3>

Purpose

To map an 802.1p priority to an internal traffic class.

Defaults

The default 802.1p mappings for the FortiSwitch OS are as follows:

User Priority	Traffic Class
0	1
1	0
2	0
3	1
4	2
5	2
6	3
7	3

Options & Parameters

<0-7>	Specifies the 802.1p priority to map.
<0-3>	Specifies the traffic class to which the 802.1p priority is mapped.

Notes

The “no” form of this command is **no cos**; it restores the 802.1p mappings to the manufacturer’s default (shown above).

Example

```
(FS1KCH1032000249) (Config)# cos dot1p-mapping 0 1
```

4.2.3 **end**

Syntax

end

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Notes

The **end** command exits to Enable Mode from all higher modes. In Config Mode its behavior is identical to **exit**.

To exit directly to Default Mode, use **ctrl-z**.

Example

```
(FS1KCH1032000249) (Config)# end
```

4.2.4 **exit**

Syntax

exit

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config)# exit
```

4.2.5 fabric-control

Syntax

```
fabric-control { flow-control | mac-svlan <2|3|4|6|12|24> | multicast <mac_address> <1-4094> <1001-1768> | partition <2-1000> priority {a|b|c} svlan <1001-1768> ... <1001-1768> | spine { id <1-64> | mode | svlan <6|12> } | svlan-id <1001-1768> <1001-1768> }
```

Purpose

To configure the bandwidth allocation of the fabric.

Defaults

- The spine ID of a switch is set to 1 by default.
- Spine mode is enabled by default (i.e., the switch is configured as a spine switch as opposed to an edge switch).
- Each spine has 6 SVLANs allocated to it by default.
- Each MAC has 3 SVLANs associated with it by default.

Options & Parameters

flow-control	Enables or disables 802.3x flow control on all internal ports of the line and fabric cards. To configure flow control on external ports, use the flow control command in Config-Port Mode (see page 260).
mac-svlan <2 3 4 6 12 24>	Specifies the number of SVLANs that are to be associated with each MAC. The default value is 3; the “no” form of this command (no fabric-control mac-svlan) restores the value to 3.
partition <2-1000> priority {a b c} svlan <1001-1768> ... <1001-1768>	Configures the fabric partition settings of the switch. (See fabric-control partition on page 183)
spine id <1-64>	Configures the spine ID of the switch; if not set explicitly, the default value is 1. The spine ID determines the range of SVLANs which will be native to this spine switch.
spine mode	Enables or disables the spine mode of the switch. When spine mode is enabled, the switch is a spine switch; when it is disabled, the switch is an edge switch.
spine svlan <6 12>	Sets the number of SVLANs used by the switch to 6 or 12; if not set explicitly, the default value is 6 SVLANs per spine. (See below.)
svlan-id <1001-1768> <1001-1768>	Identifies the full range of SVLANs which the switch is expected to recognize and pass traffic on. This is an essential command in the configuration of a multi-chassis fabric. (See below.)

Notes

The FortiSwitch allows users to aggregate switches into a scalable fabric, and to carve out bandwidth for provisioning purposes. When participating in a fabric, each FortiSwitch Ethernet Fabric Switch can operate in either spine mode or non-spine (edge) mode. Spine mode, the default, allows the switch to aggregate traffic from multiple FortiSwitch switches, creating Service VLANs (SVLANs) which are used internally for optimized traffic routing. (SVLANs – transparent VLANs used within the switch – are distinguished in the FortiSwitch system from VLANs – user-configured VLANs.) In non-spine (edge) mode, the switch assigns packets entering the fabric to available SVLANs but it creates no new SVLANs of its own, allowing more FortiSwitch switches to be connected without unduly increasing the complexity of the fabric.

When running under spine mode, the FortiSwitch-1000 has a spine ID between 1 and 64 (if not set explicitly, the ID is 1 by default); when two or more FortiSwitch switches are connected in a fabric and both are operating in spine mode, they must carry different, consecutive spine IDs. When a switch is configured in spine mode, 12 internal VLANs, named Service VLANs (SVLANs), are automatically allocated to that spine switch. The spine switch can be configured to use either all 12 SVLANs or only 6 of them (by default, it is configured to use only 6). The SVLANs are numbered automatically in groups of 12 based on the spine ID of the switch: spine ID 1 creates SVLANs 1001-1012, ID 2 creates 1013-1024, etc. For the fabric to pass traffic correctly, each switch in the fabric must be made aware of the full range of SVLANs operating in the fabric – this is accomplished using the **fabric-control svlan-id** command.

When configured as a spine, the switch is programmed as the root bridge of the spanning trees associated with the SVLANs allocated to it. (When the spine ID is set using the **fabric-control spine ID** command, it also sets the bridge priority of MST instances associated with that spine's allocated SVLANs to 0 to ensure root bridge identification.)

To view available SVLANs, use the `show fabric-control valid-svlan` command. (See page 94)

Examples

flow control:

```
(FS1KCH1032000249) (Config)# fabric-control flow-control
```

This enables 802.3x flow control on all internal ports of the line and fabric cards.

mac-svlan:

```
(FS1KCH1032000249) (Config)# fabric-control mac-svlan 12
```

This specifies that 12 SVLANs are to be associated with each MAC.

partition:

(See `fabric-control partition` on page 183.)

spine id:

```
(FS1KCH1032000249) (Config)# fabric-control spine id 2
```

This sets the spine ID number of this switch to 2.

spine mode:

```
(FS1KCH1032000249) (Config)# fabric-control spine mode
```

This enables spine mode for this switch.

spine svlan:

```
(FS1KCH1032000249) (Config)# fabric-control spine svlan 12
```

This configures the switch to use all 12 of the SVLANs allocated to it. (Only the first 6 are used by default.)

svlan-id:

```
(FS1KCH1032000249) (Config)# fabric-control svlan-id 1001 1024
```

This configures the switch to participate in a 2-spine fabric utilizing SVLANs 1001 through 1024.

“no” form of the svlan-id option:

```
(FS1KCH1032000249) (Config)# no fabric-control svlan-id 1013 1024
```

This clears SVLANs 1013 through 1024 from this switch’s SVLAN list. Note that the “no” form of this command cannot be used to remove “native” SVLANs from the switch (those which are assigned automatically based on the switch’s spine ID).

4.2.6 fabric-control partition

Syntax

fabric-control partition <2-1000> **priority** {a|b|c} **svlan** <1001-1768> ... <1001-1768>

Purpose

To create and configure partitions in the fabric.

Defaults

The priority class of the partition is 0 by default (below a, b and c).

Options & Parameters

<2-1000>	Specifies the partition ID. If there is no existing partition with the specified ID, this creates a new one.
priority { a b c }	Configures the priority class of the specified partition (see below).
svlan <1001-1768> ... <1001-1768>	Specifies the SVLANs which belong to this partition up to a maximum of 20. IDs must be between 1001 and 1768.

Notes

The FortiSwitch OS also allows users to allocate bandwidth to specific traffic types. This can be achieved by configuring partitions in the fabric. Each partition consists of different combinations of SVLANs. The switch can distribute traffic to partitions based on a packet's input port and VLAN tag. Each partition can be further divided into 4 classes – default class (0), A, B, and C, based on either the IEEE 802.1p or DiffServ priority fields. Class A maps to 802.1p priority values 2 and 3, class B to 4 and 5, and class C to 6 and 7.

Note: if partitions are configured in the fabric, all FortiSwitch switches participating in the fabric must have identical partition configuration settings.

Example

```
(FS1KCH1032000249) (Config)# fabric-control partition 2 priority a svlan 1001 1002 1003
```

This creates a partition and assigns it ID #2, sets its priority class to “a” and associates SVLANs 1001, 1002 and 1003 with it.

4.2.7 fdb-table aging-time

Syntax

fdb-table aging-time <10-1000000>

Purpose

To configure the Forwarding Database (FDB) table address aging time (in seconds).

Defaults

The aging time is 300 seconds by default.

Options & Parameters

<10-1000000>	Specifies the address aging timeout in seconds.
--------------	---

Example

```
(FS1KCH1032000249) (Config)# fdb-table aging-time 1000
```

4.2.8 garp timer

Syntax

garp timer {**join** <10-100> | **leave** <20-600> | **leave-all** <200-6000> }

Purpose

To configure the Generic Attribute Registration Protocol (GARP) timer attributes.

Defaults

- The default GVRP join time is 20 centiseconds.
- The default GVRP leave time is 60 centiseconds.
- The default interval for the generation of leave-all packets is 1000 centiseconds.

Options & Parameters

join <10-100>	Specifies the GVRP join time – the interval between transmission of GARP packets registering membership for a VLAN or multicast group – in centiseconds.
leave <20-600>	Specifies the GVRP leave time – the interval between receiving an unregister request for a VLAN or a multicast group and deleting the VLAN entry – in centiseconds.
leave-all <200-6000>	Specifies the frequency with which “leave-all” packets – packets deleting all registration entries – are generated.

Notes

All forms of the **garp timer** command only have an effect when GVRP is enabled.

The “no” form of this command resets the specified time to the default:

no garp timer join resets the GVRP join time to 20 centiseconds

no garp timer leave resets the GVRP leave time to 60 centiseconds

no garp timer leave-all resets the “leave-all” generation interval to 1000 centiseconds

Examples

```
(FS1KCH1032000249) (Config)# garp timer join 30
```

```
(FS1KCH1032000249) (Config)# garp timer leave 200
```

```
(FS1KCH1032000249) (Config)# garp timer leave-all 2000
```

4.2.9 gmrp

Syntax

`gmrp {admin-mode | port-mode}`

Purpose

To enable or disable GARP Multicast Registration Protocol (GMRP) on the switch as a whole or on all ports.

Defaults

GMRP admin-mode is disabled by default.

GMRP port-mode is enabled by default on all ports.

Options & Parameters

admin-mode	Enables GARP Multicast Registration Protocol (GMRP) on the switch.
port-mode	Enables GMRP port mode. Enabling port mode allows individual ports to be configured separately.

Examples

```
(FS1KCH1032000249) (Config)# gmrp admin-mode
```

```
(FS1KCH1032000249) (Config)# gmrp port-mode
```

4.2.10 gvrp

Syntax

gvrp {**admin-mode** | **port-mode**}

Purpose

To enable or disable GARP VLAN Registration Protocol (GVRP) on the switch as a whole or on all ports.

Defaults

GVRP admin-mode is disabled by default.

GVRP port-mode is disabled by default on all ports.

Options & Parameters

admin-mode	Enables GARP VLAN Registration Protocol (GVRP) on the switch as a whole. Use “no” form of the command to disable on the switch.
port-mode	Enables GVRP on all switch ports. For GVRP to function, it must also be enabled on the switch as a whole using the gvrp admin-mode command above. Use the “no” form of this command to disable GVRP on every port. To enable GVRP only on certain ports or LAGs, use the gvrp port-mode command in Config-LAG Mode (see page 244) or in Config-Port Mode (see page 263).

Examples

```
(FS1KCH1032000249) (Config)# gvrp admin-mode
```

```
(FS1KCH1032000249) (Config)# gvrp port-mode
```

4.2.11 ipfix

Syntax

```
ipfix {collector <ip_address> [{port <0-65535> | format <9> } [{all | <slot/port> } ] | report-timer <5-60> }
```

Purpose

To configure the Internet Protocol Flow Information eXport (IPFIX) parameters of the switch.

Defaults

The default behavior of this command is to enable IPFIX on all ports. The defaults for the parameters it configures are as follows:

- IPFIX is disabled on all switch ports by default.
- Switch exports flow data to service port 2055 by default.
- There are no collectors established by default.
- IPFIX format is set to version 9 by default.
- The IPFIX report duration is 15 seconds by default.

Options & Parameters

collector <ip_address>	Adds a collector to the specified IP address.
port <0-65535>	Specifies the layer 4 UDP service port number to which the new collector will send data traffic. The default value is 2055.
format <9>	Specifies the IPFIX format as a Netflow version number. This is a placeholder for future functionality; the default value is 9, and in this release the only available format is 9.
{ all <slot/port> }	Specifies the switch ports on which to enable IPFIX data transfer. Enable all ports by entering all or enable a specific port by identifying it in slot/port format.
report-timer <5-60>	Specifies the IPFIX report duration in seconds.

Notes

- **Note:** The FortiSwitch-1000 exports IPFIX data to service port 2055 by default, while some IPFIX collecting process listen on port 4739.
all: Enabling data transfer on all service ports (see examples under "collector" below) allows the operator to configure monitoring at the collector end.

Examples

collector:

```
(FS1KCH1032000249) (Config)# ipfix collector 172.16.0.151 port 2055 all
```

report-timer:

```
(FS1KCH1032000249) (Config)# ipfix report-timer 35
```

4.2.12 lag

Syntax

lag <1-72>

Purpose

To create a new Link Aggregation Group (LAG) or enter Config-LAG Mode to configure a specified LAG.

Options & Parameters

<1-72>

Specifies the LAG to be configured. If the specified LAG does not exist, a LAG with no associated ports is created. (Use the **add-port** command in Config-LAG Mode to add ports to a LAG; see page 237)

Notes

- For clarity, the FortiSwitch-1000 CLI uses a LAG ID number rather than allowing the lowest port in the LAG to stand in for the LAG as a whole.
- The **lag** command is used to create or remove a LAG, and also to access Config-LAG Mode to configure the attributes of an existing LAG or add or delete member ports.
- Before the LAG can be configured, it must be created with this command; creating the LAG also enters Config-LAG Mode for the newly-created LAG.
- Existing LAGs can be removed by using the **no** form of this command.
- To determine whether a LAG already exists, use the **show lag** command. (See page 30 or page 104)

Example

```
(FS1KCH1032000249) (Config)# lag 1
```

```
(FS1KCH1032000249) (Config-LAG 1)#
```

4.2.13 logging

Syntax

logging {**buffered** [**wrap**] | **cli-command** | **console** [<severity_level> | <0-7>] | **host** <ip_address> [port_ID] [<severity_level> | <0-7>] | **syslog** [**port** <port_ID>]}

Purpose

To configure event logging settings.

Defaults

- Buffered logging and CLI command logging are enabled by default; all other logging configurations are disabled by default.
- The default severity level is 7 (debug) for remote (syslog) logging, 6 (informational) for buffered logging, and 1 (alert) for console logging.
- The default logging port for remote (syslog) logging is 514.

Options & Parameters

buffered [wrap]	Enables buffered logging on the switch itself. The wrap option enables line-wrapping on log entries that exceed the size of the line buffer. Use no logging buffered to disable buffered logging, and clear logging to clear the contents of the buffered log.
cli-command	Enables CLI command logging (logging of all commands executed via the command line interface).
console [severity_level]	Enables logging on the serial console attached to the switch. See below for description of severity levels. Note: even at lower severity levels, sending logging output to the console can make it difficult to regain control of the switch if no other mode of access (e.g., telnet) is available.
host <ip_address> [port_ID] [severity_level]	Specifies the host device and port for the configured syslog server that is receiving syslog messages relayed from the switch. If no port is specified, the default is 514. See below for description of severity levels.
syslog [port <port_ID>]	Enables relaying of logging messages to the remote server. The port option allows the user to specify which port is being monitored; if no port is specified, the default is 514.
[<severity_level> <0-7>]	Specifies the logging severity level either as text or as a number; lower levels output fewer events to the console or remote logging server. The levels are as follows: 0: emergency, 1: alert, 2: critical, 3: error, 4: warning, 5: notice, 6: info, 7: debug Note: severity levels can be entered by name or by number.

Notes

- Both **logging host** and **logging syslog port** can specify the logging port; logging messages are sent from the port most recently specified.

- Buffered logging stores up to 1000 lines of log messages and is reset when the switch boots.
- Console logging outputs directly to the console, which can make it difficult to regain control of the switch.
- Severity levels can be entered as numbers or text.

Examples

buffered:

```
(FS1KCH1032000249) (Config)# logging buffered wrap
```

cli-command:

```
(FS1KCH1032000249) (Config)# logging cli-command
```

console:

```
(FS1KCH1032000249) (Config)# logging console debug
```

or

```
(FS1KCH1032000249) (Config)# logging console 7
```

host:

```
(FS1KCH1032000249) (Config)# logging host 172.16.0.116 port 55322
```

syslog:

```
(FS1KCH1032000249) (Config)# logging syslog port 55322
```

4.2.14 mac-internal-learning

Syntax

`mac-internal-learning`

Purpose

To enable software learning of MAC addresses on the switch.

Defaults

Software learning of MAC addresses is disabled on the switch by default.

Options & Parameters

This command has no options or parameters.

Notes

- The FortiSwitch-1000 is configured by default to build its MAC address table via hardware learning. This results in less flooding and higher throughput during the building of the MAC address table, but limits the total number of entries to approximately 800.
- Enabling internal (software) learning of MAC addresses slows system throughput while the MAC address table is being built, but increases the number of possible entries to approximately 1440.

Example

```
(FS1KCH1032000249) (Config)# mac-internal-learning
```

4.2.15 mgmt-ip

Syntax

```
mgmt-ip { inband { bootp | dhcp | disable | ip <ip_address> <netmask> <gateway> | mac-address <mac_address> | mac-type { burnedin | local } } | service-port { bootp | dhcp | disable | ip { <ip_address> <netmask> <gateway> } } | sshd [ max-sessions <0-5> | protocol <1-2> [1-2] | timeout <1-160> ] | telnetd { max-sessions <0-5> | timeout <1-160> } }
```

Purpose

To configure management IP protocols and parameters.

Defaults

See sub-commands for details.

Options & Parameters

inband	Configures in-band connectivity. (See page 194)
service-port	Configures the out-of-band management port. (See page 196)
sshd	Configures IP Secure Shell (SSH) parameters. (See page 197)
telnetd	Configures telnet connection parameters for incoming telnet sessions. (See page 198) The telnet and show telnet commands are used for outgoing telnet sessions.

4.2.16 mgmt-ip inband

Syntax

```
mgmt-ip inband { bootp | dhcp | disable | ip <ip_address> <netmask> | mac-address <mac_address> | mac-type { burnedin | local } }
```

Purpose

To configure in-band connectivity to the switch.

Defaults

- The MAC type is set to burned-in by default.
- In-band management is disabled by default.

Options & Parameters

bootp	Specifies BootP as the in-band port configuration protocol.
dhcp	Specifies Dynamic Host Configuration Protocol (DHCP) as the in-band port configuration protocol.
disable	Disables the current in-band management port.
ip <ip_address> <netmask> <gateway>	Specifies the IP address to set for in-band management.
mac-address <mac_address>	Configures a locally administered MAC address for in-band switch management.
mac-type {burnedin local}	Specifies whether the management card uses the burned in (burnedin) or locally administered (local) MAC address for the in-band management port.

Examples

bootp:

```
(FS1KCH1032000249) (Config)# mgmt-ip inband bootp
```

dhcp:

```
(FS1KCH1032000249) (Config)# mgmt-ip inband dhcp
```

disable:

```
(FS1KCH1032000249) (Config)# mgmt-ip inband disable
```

ip:

```
(FS1KCH1032000249) (Config)# mgmt-ip inband ip 172.16.0.115 255.255.255.0 0.0.0.0
```

mac-address:

(FS1KCH1032000249) (Config)# mgmt-ip inband mac-address 00-08-74-4C-7F-1D

mac-type:

(FS1KCH1032000249) (Config)# mgmt-ip inband mac-type burnedin

4.2.17 mgmt-ip service-port

Syntax

```
mgmt-ip service-port { bootp | dhcp | disable | ip { <ip_address> <netmask> <gateway> } }
```

Purpose

To configure the out-of-band management port.

Defaults

Out-of-band management is set to DHCP by default.

Options & Parameters

bootp	Specifies BootP as the service port configuration protocol.
dhcp	Specifies Dynamic Host Configuration Protocol (DHCP) as the service port configuration protocol.
disable	Disables the current service port.
ip <ip_address> <netmask> <gateway>	Specifies the IP address to set for out-of-band management.

Examples

bootp:

```
(FS1KCH1032000249) (Config)# mgmt-ip service-port bootp
```

dhcp:

```
(FS1KCH1032000249) (Config)# mgmt-ip service-port dhcp
```

disable:

```
(FS1KCH1032000249) (Config)# mgmt-ip service-port disable
```

ip:

```
(FS1KCH1032000249) (Config)# mgmt-ip service-port ip 172.16.0.115 255.255.255.0 0.0.0.0
```

4.2.18 mgmt-ip sshd

Syntax

```
mgmt-ip sshd [ max-sessions <0-5> | protocol <1-2> [1-2] | timeout <1-160> ]
```

Purpose

To configure the IP Secure Shell (SSH) parameters for incoming SSH sessions.

Defaults

The default behavior of this command is to enable Secure Shell (SSH) access to the switch. The defaults for the parameters it configures are as follows:

- SSH access to the switch is turned on by default.
- SSH protocol level is set to 1 and 2 by default.
- The maximum number of SSH sessions is set to 5 by default.
- The SSH login inactivity timeout is set to 5 minutes by default.

Options & Parameters

max-sessions <0-5>	Configures the number of remote SSH connections allowed.
protocol <1-2> [1-2]	Specifies the SSH protocol level (version). An optional second SSH protocol level may also be specified.
timeout <0-160>	Specifies the SSH login inactivity timeout in minutes.

Examples

default:

```
(FS1KCH1032000249) (Config)# mgmt-ip sshd
```

max-sessions:

```
(FS1KCH1032000249) (Config)# mgmt-ip sshd max-sessions 5
```

protocol:

```
(FS1KCH1032000249) (Config)# mgmt-ip sshd protocol 1 2
```

timeout:

```
(FS1KCH1032000249) (Config)# mgmt-ip sshd timeout 160
```

4.2.19 mgmt-ip telnetd

Syntax

```
mgmt-ip telnetd { max-sessions <0-5> | timeout <1-160> }
```

Purpose

To configure incoming telnet connection parameters.

Defaults

The default behavior of this command is to enable incoming telnet access to the switch. The defaults for the parameters it configures are as follows:

- Telnet access to the switch is disabled by default.
- The maximum number of remote telnet connections is set to 5 by default.
- The telnet login inactivity timeout is set to 5 minutes by default.

Options & Parameters

max-sessions <0-5>	Configures the number of remote telnet connections allowed.
timeout <1-160>	Configures the telnet login inactivity timeout in minutes. Setting the timeout to 0 causes a session to remain active indefinitely.

Notes

This command configures incoming telnet connections. The **show telnet** and **telnet** commands are used for outbound telnet connections from the switch.

Examples

default:

```
(FS1KCH1032000249) (Config)# mgmt-ip telnetd
```

max-sessions:

```
(FS1KCH1032000249) (Config)# mgmt-ip telnetd max-sessions 5
```

timeout:

```
(FS1KCH1032000249) (Config)# mgmt-ip telnetd timeout 160
```

4.2.20 port

Syntax

```
port { <slot/port> | range <slot/port> <slot/port> }
```

Purpose

To enter Config-Port Mode to configure a specified port or range of ports.

Options & Parameters

<code><slot/port></code>	Specifies the port to be configured.
<code>range <slot/port> <slot/port></code>	Specifies a range of ports to be configured; port variables identify the first and last ports in the range to be configured.

Example

default:

```
(FS1KCH1032000249) (Config)# port 2/1
```

range:

```
(FS1KCH1032000249) (Config)# port range 2/1 3/12
```

4.2.21 **prompt**

Syntax

prompt <prompt_string>

Purpose

To change the system prompt.

Options & Parameters

<prompt_string>

Specifies the new system prompt. The prompt string can be up to 64 case-sensitive characters in length.

Notes

Creating distinctive CLI system prompts can help to distinguish among switches when controlling several by remote access.

Example

```
(FS1KCH1032000249) (Config)# prompt FortiSwitch_in_lab
```

4.2.22 radius

Syntax

```
radius { accounting mode | server { host { acct | auth } <ip_address> [0-65535] | key { acct | auth } <ip_address> | msg-auth <ip_address> | primary <ip_address> | retransmit <1-15> | timeout <1-30> } }
```

Purpose

To configure parameters for the Remote Authentication Dial In User Service (RADIUS) servers.

Defaults

- RADIUS accounting mode is disabled by default.
- The connection port for the RADIUS authentication server is set to 1813 by default.
- The connection port for the RADIUS accounting server is set to 1813 by default.
- The retransmit value is set to 4 by default.
- The RADIUS server timeout is set to 5 seconds by default.

Options & Parameters

accounting mode	Enables the Remote Authentication Dial In User Service (RADIUS) accounting function.
server host { acct auth } <ip_address> [0-65535]	Specifies the RADIUS server host parameters; use acct or host to specify the accounting server or the authentication server. The optional port value specifies the UDP port to use when connecting to the RADIUS server; the default is 1812 for an authentication server and 1813 for an accounting server.
server key { acct auth } <ip_address>	Configures the RADIUS key; use acct or host to specify the accounting server or the authentication server.
server msg-auth <ip_address>	Enables the message authenticator attribute for the specified server.
server primary <ip_address>	Sets the server at the specified IP address as the primary RADIUS server.
server retransmit <1-15>	Sets the retransmit value for the RADIUS server; default is 4.
server timeout <1-30>	Specifies the RADIUS server timeout value in seconds; default is 5.

Examples

accounting mode:

```
(FS1KCH1032000249) (Config)# radius accounting mode
```

server host:

```
(FS1KCH1032000249) (Config)# radius server host acct 172.16.0.114 553211
```

server key:

(FS1KCH1032000249) (Config)# radius server key acct 172.16.0.114

server msg-auth:

(FS1KCH1032000249) (Config)# radius server msg-auth 172.16.0.114

server primary:

(FS1KCH1032000249) (Config)# radius server primary 172.16.0.114

server retransmit:

(FS1KCH1032000249) (Config)# radius server retransmit 7

server timeout:

(FS1KCH1032000249) (Config)# radius server timeout 30

4.2.23 serial

Syntax

```
serial {baudrate <115200> | timeout <0-160> }
```

Purpose

To configure the serial connection's baud rate and inactivity timeout.

Defaults

- The baud rate is 115200 by default.
- The port login inactivity timeout is 5 minutes by default.

Options & Parameters

baudrate <115200>	Sets the baud rate for the serial connection. Note: for this release, the only permissible value is 115200.
timeout <0-160>	Sets the serial port login inactivity timeout in minutes.

Examples

baudrate:

```
(FS1KCH1032000249) (Config)# serial baudrate 115200
```

timeout:

```
(FS1KCH1032000249) (Config)# serial timeout 160
```

4.2.24 slot

Syntax

slot <1-12> <1-13>

Purpose

To configure a slot to accommodate a specific type of card. This allows the operator to pre-configure a slot when the card is not physically present in the chassis.

Options & Parameters

<1-12>	Specifies the slot to be configured.
<1-13>	Specifies the card type for which the slot is to be configured. Card type is specified by a card index (CID); the supported card types can be found by using the show system cardtypes-supported command.

Notes

- This command can prevent the operation of a mistakenly inserted card. If the slot is pre-configured for a specific card type and a card of the wrong type is inserted, the FortiSwitch will power the slot down automatically.
- The **no** form of this command can be used only on empty slots.
- Card types supported at the time of this writing:

CID	Card Description
6	CX4 10GE 12-Port Card
7	FortiSwitch1000 Fabric Card
10	Power CX4 10GE 12-Port Card
11	XFP 10GE 12-Port Card
12	Advanced Power CX4 10GE 12-port Card
13	Advanced XFP 10GE 12-Port Card

Example

(FS1KCH1032000249) (Config)# slot 1 6

4.2.25 snmpd

Syntax

```
snmpd { community { <community_name> | ipaddr <ip_address> <community_name> |  
ipmask <ip_address> <community_name> | mode <community_name> | ro <community_name>  
| rw <community_name> } | contact <contact_name> | enable-traps {authentication |  
bcaststorm | linkmode | multiusers | stpmode} | location <location> | sysname  
<system_name> }
```

Purpose

To set Simple Network Management Protocol daemon (SNMPd) options and parameters.

Defaults

The default behavior of this command is to enable SNMP on the switch. The defaults for the parameters it configures are as follows:

- SNMP is enabled by default.
- “Public” and “private” communities are *not* created by default.
- Undefined communities are disabled by default; naming a community enables it.
- Client IP address and netmask are set to 0.0.0.0 by default.
- The five SNMP trap flags described below are enabled by default.

Options & Parameters

community <community_name>	Adds and names a new SNMP community. The name can be up to 16 case-sensitive characters. (The no form of this command deletes the specified community name from the table.)
community ipaddr <ip_address> <community_name>	Sets a client IP address to limit which clients may access the specified named SNMP community. A value of 0.0.0.0 (the default) allows community access from any IP address. (The no form of this command sets the IP address to 0.0.0.0.)
community ipmask <ip_mask> <community_name>	Sets a client IP mask for the specified named SNMP community. A value of 255.255.255.255 will allow access from only one station, and will use that machine’s IP address for the client IP address; a value of 0.0.0.0 (the default) will allow access from any IP address. (The no form of this command sets the IP mask to 0.0.0.0.)
community mode <community_name>	Enables the specified SNMP community.
community ro <community_name>	Sets access mode of the specified SNMP community to read-only (“public mode”).
community rw <community_name>	Sets access mode of the specified SNMP community to read/write (“private mode”).
contact <contact_name>	Enters the specified name (up to 31 characters) as the SNMP contact.
enable-traps authentication	Enables authentication traps. (Use the no form of this command to disable.)

enable-traps bcaststorm	Enables the broadcast storm trap. (Use the no form of this command to disable.)
enable-traps linkmode	Enables the link up / link down trap flag at the switch level. Note: use with caution; this trap can generate high volumes of data. (Use the no form of this command to disable.)
enable-traps multiusers	Enables the sending of a trap when multiple logins are active simultaneously. (Use the no form of this command to disable.)
enable-traps stp-mode	Enables sending of spanning tree traps. (Use the no form of this command to disable.)
location <location>	Enters the specified location (up to 31 characters) as the system location (the physical location of the system).
sysname <system_name>	Enters the specified name (up to 31 characters) as the system name.

Notes

“Public” and “private” SNMP communities are **not** created by default. If you are using an older config file which includes commands related to public and private community strings, you must include a command to create those strings first.

Examples

community:

```
(FS1KCH1032000249) (Config)# snmpd community BigMuddy
```

community ipaddr:

```
(FS1KCH1032000249) (Config)# snmpd community ipaddr 172.16.0.114 BigMuddy
```

community ipmask:

```
(FS1KCH1032000249) (Config)# snmpd community ipmask 255.255.255.0 BigMuddy
```

community mode:

```
(FS1KCH1032000249) (Config)# snmpd community mode BigMuddy
```

community ro:

```
(FS1KCH1032000249) (Config)# snmpd community ro BigMuddy
```

community rw:

```
(FS1KCH1032000249) (Config)# snmpd community rw BigMuddy
```

contact:

```
(FS1KCH1032000249) (Config)# snmpd contact Roger_Hoskins_650-555-7890
```

enable-traps authentication:

(FS1KCH1032000249) (Config)# snmpd enable-traps authentication

enable-traps bcaststorm:

(FS1KCH1032000249) (Config)# snmpd enable-traps bcaststorm

enable-traps linkmode:

(FS1KCH1032000249) (Config)# snmpd enable-traps linkmode

enable-traps multiusers:

(FS1KCH1032000249) (Config)# snmpd enable-traps multiusers

enable-traps stp-mode:

(FS1KCH1032000249) (Config)# snmpd enable-traps stpmode

location:

(FS1KCH1032000249) (Config)# snmpd location sunnyvale

sysname:

(FS1KCH1032000249) (Config)# snmpd sysname FortiSwitch_1000_S1

4.2.26 snmp-trap

Syntax

```
snmp-trap { <trap_name> <ip_address> [ snmpversion { snmpv1 | snmpv2 } ] | ipaddr  
<trap_name> <ip_address_old> <ip_address_new> | mode <name> <ip_address> |  
snmpversion <trap_name> <ip_address> { snmpv1 | snmpv2 } }
```

Purpose

To configure and enable custom SNMP traps.

Defaults

- No custom traps are enabled by default.
- SNMP version 2 is used by default.

Options & Parameters

<code><trap_name> <ip_address> [snmpversion { snmpv1 snmpv2 }]</code>	Specifies the trap name and the IP address of the SNMP server. The snmpversion option specifies the SNMP version of the trap; the default is version 2. The value of <code><trap_name></code> must be either one of the standard SNMP traps listed below or the name of an SNMP community configured on the switch.
<code>ipaddr <trap_name> <ip_address_old> <ip_address_new></code>	Allows the operator to change the IP address of the SNMP server. This is used only when the IP address of the server has changed.
<code>mode <trap_name> <ip_address></code>	Enables the SNMP trap of the specified name and SNMP server IP address.
<code>snmpversion <trap_name> <ip_address> { snmpv1 snmpv2 }</code>	Configures the SNMP version for the specified trap.

Notes

- Five traps are enabled by default (see **snmpd** on page 205). This command allows for the creation of up to five additional custom traps.
- The `<trap_name>` parameter specifies the type of trap flag to be enabled. It must be either a standard SNMP trap name as described in RFC 1157 or the name of a configured SNMP community. Using a standard trap name will add a flag for that trap; using an SNMP community name will send uptime information about the specified community.

Acceptable trap names:

- coldStart
- warmStart
- linkUp
- linkDown
- egpNeighborLoss

- the name of a configured SNMP community

Examples

default:

```
(FS1KCH1032000249) (Config)# snmp-trap test1 172.16.0.144 snmp-version snmpv1
```

This adds an SNMP trap to monitor uptime of community “test1” in format SNMPv1. **Note:** this assumes that an SNMP community named “test1” has been configured on the switch.

ipaddr:

```
(FS1KCH1032000249) (Config)# snmp-trap ipaddr test1 172.16.0.113 172.16.0.114
```

This changes the IP address to which the SNMP trap set above is sent.

mode:

```
(FS1KCH1032000249) (Config)# snmp-trap mode test1 172.16.0.114
```

This enables the SNMP trap added under “default” above.

snmpversion:

```
(FS1KCH1032000249) (Config)# snmp-trap snmp-version test1 172.16.0.114 snmpv1
```

This specifies that the SNMP trap added under “default” above is using SNMP version 1 (used primarily for compatibility with trap receivers which do not support SNMP version 2).

4.2.27 sntp

Syntax

```
sntp { broadcast client poll-interval <6-10> | client { mode { broadcast | unicast } | port <1-65535> } | server <ip_address> [1-3] [version] [1-65535] | unicast client { poll-interval <6-10> | poll-retry <0-10> | poll-timeout <1-30> } }
```

Purpose

To configure a Simple Network Time Protocol (SNTP) server and its parameters.

Defaults

- Broadcast client poll-interval is 6 by default.
- Unicast client poll-interval is 6 by default.
- The SNTP client port ID is set to 123 by default.
- The unicast client poll retry value is set to 1 by default.
- The unicast client poll timeout is set to 5 seconds by default.

Options & Parameters

broadcast client poll interval <6-10>	Sets the poll interval (in seconds) for SNTP broadcast clients as a power of two (e.g., a value of 6 is a poll interval of 2 ⁶ or 64 seconds).
client mode { broadcast unicast }	Sets the SNTP client mode to broadcast or unicast.
client port <1-65535>	Sets the SNTP client port ID value. The default is 123.
server <ip_address> [1-3] [1-4] [1-65535]	Configures the SNTP server; <ip_address> specifies the address of the SNTP server, [1-3] sets the SNTP server priority, [1-4] sets the SNTP version and [1-65535] sets the SNTP server port ID.

Examples

broadcast client poll interval:

```
(FS1KCH1032000249) (Config)# sntp broadcast client poll-interval 6
```

client mode:

```
(FS1KCH1032000249) (Config)# sntp client mode broadcast
```

client port:

```
(FS1KCH1032000249) (Config)# sntp client port 55013
```

server:

```
(FS1KCH1032000249) (Config)# sntp server 172.16.0.155 3 2
```

4.2.28 spanning-tree

Syntax

```
spanning-tree {bpd-migration-check { <slot/port> | all} | configuration {name <name> | revision <0-65535> } | force-version {802.1d | 802.1s | 802.1w}| forward-time <4-30> | hello-time <1-10> | max-age <6-40> | max-hops <1-127> | mst {instance <1-4094> | <0-4094> {priority <0-61440> | vlan <1-4094> } } }
```

Purpose

To enable and configure Spanning-Tree Protocol (STP).

Defaults

The default behavior of this command is to enable Spanning-Tree Protocol (STP) on the switch. The defaults for the parameters it configures are as follows:

- MSTP is enabled on the switch by default.
- MST region name is set to Fortinet by default.
- BPDU migration check is disabled by default.
- Forward time is set to 15 seconds by default.
- Hello time is set to 2 seconds by default.
- Maximum bridge age (max-age) is set to 20 seconds by default.
- Maximum hops is set to 20 by default.
- Bridge priority is set to 32768 by default.

Options & Parameters

bpd-migration-check { <slot/port> all }	Force the specified port (or all ports) to transmit RSTP or MSTP BPDUs. Note: This operation is available only in bridges that support RSTP or MSTP.
configuration {name <name> revision <0-65535> }	Name specifies the name of the MST region in which the switch is operating (maximum of 32 characters); revision sets the configuration identifier revision level. The default MST region name is Fortinet (appropriate for a single chassis, which can have any name for its MST region). See notes below. If configuring a multi-chassis fabric, use this command to change the MST region name to FortiSwitchFabric. In most cases, the revision number is not to be changed.
force-version {802.1d 802.1s 802.1w}	Sets the force protocol version parameter, determining which variety of spanning-tree is to be used by the switch. 802.1d enables STP, 802.1s enables MSTP, and 802.1w enables RSTP.
forward-time <4-30>	Sets the bridge forward delay time in seconds. Value must be greater than or equal to (bridge max age / 2) + 1.
hello-time <1-10>	Sets the hello time in seconds. Value must be less than or

	equal to (bridge max age / 2) - 1.
max-age <6-40>	Sets the bridge max age in seconds. Value must be less than or equal to 2*(bridge forward delay time - 1).
max-hops <1-127>	Sets the MSTP maximum hops parameter for the common and internal spanning tree.
mst instance <1-4094>	Creates an MST instance with the specified identifier. The bridge priority is set to 32768 on leaf switches, or automatically determined based on the spine ID for spine switches.
mst <0-4094> priority <0-61440>	Sets the bridge priority for a specified MST instance. Used primarily for troubleshooting and debugging; appropriate bridge priority is set automatically based on spine settings.
mst <0-4094> vlan <1-4094>	Adds the specified VLAN to the specified MST instance.

Notes

- The default MST region name is “Fortinet” – appropriate for a single switch. In order for the switch to participate in a fabric, the MST region name must be changed to “FortiSwitch” (case sensitive).
- Each FortiSwitch-1000 switch operating as a standalone switch (i.e., not in a fabric) must be the only device in its MST region; if there is more than one FortiSwitch-1000 in your network and they are not configured together as a fabric, each must have its own unique MST region name.
- The FortiSwitch-1000 uses STP version 802.1s (MSTP) by default; to use STP or RSTP, the operator must use the appropriate **spanning-tree force-version** command.
- Interface-level spanning-tree configuration is done in Config-LAG Mode and Config-Port Mode.
- Specifying an MST identifier of 0 indicates that there is only a single spanning tree in operation.

Examples

bpdu-migration-check:

```
(FS1KCH1032000249) (Config)# spanning-tree bpdu-migration-check 2/1
```

configuration:

```
(FS1KCH1032000249) (Config)# spanning-tree configuration name FortiSwitch
```

This sets the MST region name to “FortiSwitch” in order to prepare this switch to participate in a multi-chassis fabric deployment.

force-version:

```
(FS1KCH1032000249) (Config)# spanning-tree force-version 802.1d
```

forward-time:

```
(FS1KCH1032000249) (Config)# spanning-tree forward-time 20
```

hello-time:

```
(FS1KCH1032000249) (Config)# spanning-tree hello-time 12
```

max-age:

```
(FS1KCH1032000249) (Config)# spanning-tree max-age 35
```

max-hops:

```
(FS1KCH1032000249) (Config)# spanning-tree max-hops 65
```

mst instance:

```
(FS1KCH1032000249) (Config)# spanning-tree mst instance 1
```

mst priority:

```
(FS1KCH1032000249) (Config)# spanning-tree mst 13 priority 0
```

This sets the bridge priority for MST instance 13 to a value of 0. Note that this would usually be done only for troubleshooting or debugging purposes.

mst vlan:

```
(FS1KCH1032000249) (Config)# spanning-tree mst 1 vlan 1
```

4.2.29 System

Syntax

```
system { line-card <1-12> { admin-state | power-state } | fabric-card <1-6> { admin-state | power-state } }
```

Purpose

To enable or disable the power state or admin state of an individual line card or fabric card.

Defaults

- Admin state is enabled on all cards by default.
- Power state is enabled on all cards by default.

Options & Parameters

line-card <1-12>	Specifies that a line-card is to be configured. <1-12> specifies which line card.
fabric-card <1-6>	Specifies that a fabric-card is to be configured. <1-6> specifies which fabric card.
admin-state	Enables or disables the admin state of the card. Disabling the admin state of a card leaves its software running but detaches all of its ports.
power-state	Enables or disables the power state of the card, allowing the operator to power down a single card without affecting the rest of the chassis.

Note

Use the “no” form of this command to disable admin- or power-state of an individual card.

Example

```
(FS1KCH1032000249) (Config)# system line-card 1 admin-state
```

4.2.30 users

Syntax

```
users {access-mode <user_name> {readonly | readwrite} | default-login <list_name> | login  
<user_name> <list_name> | name <user_name> | password <user_name> | snmpv3 {access-  
mode <user_name> {readonly | readwrite} | authentication <user_name> {none | md5 | sha} |  
encryption <user_name> { none | des <key> } } }
```

Purpose

To create and configure user login accounts for access to the switch.

Defaults

SNMPv3 access mode is set to read-write by default for “admin” and to read-only by default for all other users.

Options & Parameters

access-mode <user_name> {readonly readwrite}	Sets the access mode for the specified user.
default-login <list_name>	Sets the default authentication list for non-configured users.
login <user_name> <list_name>	Sets the authentication list for the specified user.
name <user_name>	Adds a new user with the specified name.
password <user_name>	Sets or re-sets the login password for the specified user. User is prompted to enter old and new passwords; for no password, press enter.
snmpv3 access-mode <user_name> {readonly readwrite}	Sets the Simple Network Management Protocol version 3 (SNMPv3) access mode for the specified user.
snmpv3 authentication <user_name> {none md5 sha}	Sets the SNMPv3 authentication mode for the specified user.
snmpv3 encryption <user_name> { none des <key> }	Sets encryption mode for the specified user. If setting the mode to Data Encryption Standard (DES), an encryption key must be supplied. Note: authentication must be enabled for the specified user before encryption can be set.

Examples

access-mode:

```
(FS1KCH1032000249) (Config)# users access-mode bob readonly
```

default-login:

```
(FS1KCH1032000249) (Config)# users default-login defaultLoginList
```

login:

(FS1KCH1032000249) (Config)# users login bob bobsLoginList

name:

(FS1KCH1032000249) (Config)# users name bob

passwd:

(FS1KCH1032000249) (Config)# users passwd bob

Enter old password:

Enter new password:***

Confirm new password:***

Password Changed!

snmpv3 access-mode:

(FS1KCH1032000249) (Config)# users snmpv3 access-mode bob readonly

snmpv3 authentication:

(FS1KCH1032000249) (Config)# users snmpv3 authentication bob md5

snmpv3 encryption:

(FS1KCH1032000249) (Config)# users snmpv3 encryption bob des 0E329232EA6D0D73

4.2.31 **vlan**

Syntax

vlan

Purpose

To enter Config-VLAN Mode in order to create or configure a VLAN.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config)# vlan
```

5 Debug Mode

5.1 Overview

The Debug Mode provides commands for debugging purposes and low-level visibility into switch functions.

NOTE: Many Debug Mode commands have the potential to DAMAGE THE SYSTEM, and should be used ONLY under direct guidance from a Fortinet support technician.

For further information, please contact Fortinet Technical Support:

5.1.1 Access

This mode is accessed by using the **debug** command in Enable Mode.

5.1.2 Exit

To exit from this mode, use the **exit** or **end** command to return to Enable Mode.

5.2 Commands

clear config	Reset the running configuration to factory defaults.
crm	Display congestion rate management information.
cross-connect	Display the cross connect details of the chassis.
end	Exit to Enable Mode.
exit	Exit to Enable Mode.
filter-msg	Filter the debug messages.
flow-ordering	Configure flow ordering.
garp	Display GVRP information and enable trace.
hapi	Debug Hardware Assisted Parallel Interface (HAPI) port.
internal-trunk	Enable/disable internal trunk mode.
lACP	Display information and enable traces for Link Aggregation Control Protocol (LACP) debugging.

mstp	Display information and enable traces for Multiple Spanning Tree Protocol (MSTP) debugging.
nim	Set NIM traces or dump log entries.
path-builder	Configure path builder.
port-trace	Set port traces.
redundancy	Display HA redundancy information.
switching-chip	Debug the switching chip.
slot-info	Display slot information for all cards.
svlan	Create new SVLANs or delete existing SVLANs.
vsp	VSP debug command.

6 File Mode

6.1 Overview

The File Mode provides commands for image updating and file transfer.

6.1.1 Access

This mode is accessed by using the **file** command in Enable Mode.

6.1.2 Exit

To exit from this mode, use the **exit** or **end** command to return to Enable Mode.

6.2 Commands

Command	Purpose
copy	Copy files/images from/to internal or external disks.
delete	Delete files from the internal or external disks.
dir	Display the contents of the internal or external disks.
end	Exit to Enable Mode.
exit	Exit to Enable Mode.
ftp	Upload/download files from an FTP server.
script	Apply/show/validate configuration scripts.
system	Update the system image
tftp	Upload/download files from a TFTP server.
update	Update bootloader images.
verify system image	Verify checksum of image file.

6.2.1 copy

Syntax

```
copy { [standby:] [path/] <source_file_name> | default-config | running-config | startup-config } { [standby:] [path/] <destination_file_name> | startup-config }
```

Purpose

To copy files or images to and from the internal or external disk. If no path is specified, the files/images are copied *from* and *to* the internal disk (the disk inside the active management card).

Options & Parameters

standby:	Use of the standby: token specifies that the file is to be copied to or from the disk attached to the standby management card (if any).
[path/]	Specifies a file path for the source or destination file. If none is specified, the source and destination paths are both assumed to be the internal disk.
disk	Specifies the internal disk as the file path.
extdisk	Specifies the external disk as the file path.
<source_file_name>	The name of the file being copied.
<destination_file_name>	The name of the file to which data is being copied.
default-config	Specifies the factory default configuration settings file as the source to copy from. Note: default-config cannot be used as the destination.
running-config	Specifies the currently running configuration (saved or not) as the source to copy from. Note: you cannot use running-config for the destination.
startup-config	Specifies the startup configuration file as the source or the destination. (See examples below.) Note: when changes made to the running configuration are saved on exit from the CLI, these changes are saved to the startup configuration file on the internal disk of the active management card.

Notes & Examples

Each FortiSwitch Ethernet Fabric Switch management card has two storage locations: the internal disk (specified by **disk** in the CLI) and the external disk (specified by **extdisk** in the CLI). Because the external disk can be easily removed, the configuration file used by the switch at startup is stored on the internal disk. By default, the **copy** command uses the internal disk of the active management card as both its default source path and its default destination path.

Also please note that as of the date of this publication, the external disk is not yet supported.

default example:

```
(FS1KCH1032000249) (File)# copy newbootfile bootfile.062707
```

This will copy the file “newbootfile” on the internal disk into the file “bootfile.062707,” also on the internal disk.

copying from external to internal disk:

```
(FS1KCH1032000249) (File)# copy extdisk/monkeyfile disk/monkeyfile
```

This copies a file called “monkeyfile” from the active management card’s external disk to its internal disk.

While the **copy** command is primarily used for copying u-boot image files, system image files, core dump files, trace files, syslog files, etc. between the internal and external disks of a single management card, the command can also be used for the following.

To reset the startup configuration to the manufacturer default configuration:

```
(FS1KCH1032000249) (File)# copy default-config startup-config
```

This copies the settings from the default configuration file to the startup configuration file on the internal disk of the active management card.

to copy the currently running configuration to a file:

```
(FS1KCH1032000249) (File)# copy running-config startup-config
```

This copies the running configuration to the startup configuration files on **both** management cards.

```
(FS1KCH1032000249) (File)# copy running-config config061907
```

This copies the running configuration to a file called “config061907” on the internal disk.

to copy files between the active and standby management cards:

```
(FS1KCH1032000249) (File)# copy startup-config standby:startup-config
```

This copies the startup configuration file from the internal disk of the active management card to the internal disk of the standby management card.

To copy files to or from an external location (using a network address or other locator), use the **ftp** or **tftp** commands. (See page 228 and page 232)

6.2.2 delete

Syntax

`delete [standby:] [path/] <file_name>`

Purpose

To delete files; files can be deleted from the internal or external disk of the active or standby management card.

Defaults

Deletes the specified file from the internal disk attached to the active management card.

Options & Parameters

standby:	Specifies that files are to be deleted from a disk attached to the standby management card.
[path/]	Specifies the file path of the file to be deleted; extdisk/ <file_name> specifies that the file is to be deleted from the external disk.
<file_name>	Specifies the file to be deleted.

Example

(FS1KCH1032000249) (File)# delete oldDefault.scr

This will delete the file “oldDefault.scr” from the internal disk attached to the active management card.

6.2.3 dir

Syntax

`dir [disk | LOG | CORE | extdisk | standby:disk | standby: extdisk]`

Purpose

To display the contents of the internal or external disk.

Defaults

The contents of the internal disk attached to the active management card are displayed by default.

Options & Parameters

disk	Displays the contents of the internal disk attached to the active management card.
LOG	Displays the contents of the LOG directory of the internal disk attached to the active management card.
CORE	Displays the contents of the CORE directory of the internal disk attached to the active management card.
extdisk	Displays the contents of the external disk attached to the active management card. Note: as of the date of this publication, the external disk is not yet supported.
standby:disk	Displays the contents of the internal disk attached to the standby management card.
standby:extdisk	Displays the contents of the external disk attached to the standby management card. Note: as of the date of this publication, the external disk is not yet supported.

Example

```
(FS1KCH1032000249) (File)# dir extdisk
**Wed May 23 21:40 23119854 deflinux.mgmt.img
Thu Jan 1 00:01 159 config.scr
Fri Jun 1 21:31 204 sy
Thu Jun 14 00:45 541 myscript
* Tue Jun 19 20:14 0 slog2.txt
[etc.]
```

6.2.4 end

Syntax

end

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) (File)# end

6.2.5 **exit**

Syntax

exit

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) (File)# **exit**

6.2.6 ftp

Syntax

ftp <ip_address> [1-65535]

Purpose

To connect to a File Transfer Protocol (FTP) server in order to upload or download files.

Defaults

The FTP connection uses destination TCP port 21 by default.

Options & Parameters

<ip_address>	Specifies the valid host IP address for the FTP server.
[1-65535]	Specifies the destination TCP port on the FTP server. If no port number is entered, the default is port 21.

Example

```
(FS1KCH1032000249) (File)# ftp 10.10.50.52 1021
```

```
Connected to 10.10.50.52.
```

```
220 (vsFTPD 2.0.5)
```

```
Name (10.10.50.52:root): anonymous
```

```
331 Please specify the password.
```

```
Password:
```

```
230 Login successful.
```

```
Remote system type is UNIX.
```

```
Using binary mode to transfer files.
```

6.2.7 script

Syntax

```
script {apply | show | validate } <script_name.scr>
```

Purpose

To apply, view or evaluate a configuration script stored on an attached disk.

Defaults

If no file path is supplied, script is assumed to be on the internal disk of the active management card.

Options & Parameters

apply	Applies the specified configuration script.
show	Shows the contents of the specified configuration script.
validate	Validates the specified configuration script.
<script_name.scr>	Specifies the script to be acted upon. The extension .scr is optional.

Notes

If the script to be acted upon does not reside on the internal disk of the active management card, a file path (e.g., **extdisk/** , **standby:disk/** , etc.) must be supplied.

Running a configuration script adds to the running configuration rather than replacing it. To replace the running configuration with a configuration script, first reset the configuration to manufacturer defaults by using the **clear config** command, then use **script** to run the script.

Examples

apply:

```
(FS1KCH1032000249) (File)# script apply mincfg.scr
```

show:

```
(FS1KCH1032000249) (File)# script show extdisk/oldDefault.scr
```

```
1 : !Current Configuration:
```

```
2 : !
```

```
3 : !System Description "FortiSwitch Ethernet Fabric Switch"
```

```
4 : !System Description REL-1.0.0-BETA built on rhe3 at Fri Jun 15 10:17:21 PDT 2007 by build
```

```
[etc.]
```

validate:

```
(FS1KCH1032000249) (File)# script validate mincfg.scr
```

```
configure
mgmt-ip sshd
vlan
exit
Configuration script 'mincfg.scr' validated.
```

6.2.8 system image

Syntax

system image { **fabric** { <1-6> | **all** } | **line** { <1-12> | **all** } | **mgmt** { <1-2> | **all** } } <file_name>

Purpose

To update the system image of management cards, line cards, and fabric cards.

Options & Parameters

fabric { <1-6> all }	Updates the system image for the specified fabric card or for all fabric cards.
line { <1-12> all }	Updates the system image for the specified line card or for all line cards.
mgmt { <1-2> all }	Updates the system image for the specified management card or for both management cards.
<file_name>	Specifies the file from which the system image is to be updated.

Notes

Caution: There are six different image types used by the switch: boot-loader images and system images for three different card types (management, fabric and line). Before using the **system image** or **update boot-loader** command, be sure that you are loading the appropriate image file.

Also note when upgrading system files that all system images on all cards should be from the same build; Fortinet recommends upgrading *all* system images when performing a system upgrade. Images are first copied to the management card, then updated; see *FortiSwitch-1000 Install Guide* for further details on the update procedure.

To update the boot-loader image (BIOS) for a card, use the **update** command. (See page 233) (Note that boot-loader images are rarely updated in the field.)

Examples

fabric all:

```
(FS1KCH1032000249) (File)# system image fabric all wfos.1-3-0.fc.img
```

line all:

```
(FS1KCH1032000249) (File)# system image line all wfos.1-3-0.lc.img
```

mgmt all:

```
(FS1KCH1032000249) (File)# system image mgmt all wfos.1-3-0.mc.img
```

6.2.9 tftp

Syntax

```
tftp {get <ip_address>:<file_path>/<file_name> [target_file] | put <file_name>
<ip_address>:<file_path>/[target_file] }
```

Purpose

To upload or download files to or from a Trivial File Transfer Protocol (TFTP) server.

Options & Parameters

get	Downloads the specified file from the specified TFTP server.
put	Uploads the specified file to the specified TFTP server.
<ip_address>	Specifies the valid host IP address for the TFTP server.
<file_path>	Specifies the file path.
<file_name>	Specifies the file name.
[target_file]	Specifies the optional target file name. If none is specified, the name of the source file is used.

Examples

get:

```
(FS1KCH1032000249) (File)# tftp get 172.67.0.115:/scripts/20070621Default.scr newDefault.scr
```

This goes to the “scripts” directory at the specified IP address and downloads a file called “20070621Default.scr” into a file called “newDefault.scr” on the internal disk of the active management card.

put:

```
(FS1KCH1032000249) (File)# tftp put newDefault.scr 172.67.0.115:/scripts/
```

This copies a file called “newDefault.scr” from the internal disk of the active management card to a file of the same name in the “scripts” directory at the specified IP address.

6.2.10 update boot-loader

Syntax

```
update boot-loader { disk | extdisk } <image_name> { fabric | line | mgmt } <card_number>
```

Purpose

To update the boot loader image on a specific card.

Options & Parameters

{ disk extdisk }	Specifies whether the image file is on the internal or external disk.
<image_name>	Specifies the file name of the image file from which to update.
{ fabric line mgmt }	Specifies the card type of the card being updated.
<card_number>	Specifies the number of the card being updated. A valid number must be supplied: fabric cards: 1-6 line cards: 1-12 management cards: 1-2

Notes

Caution: There are six different image types used by the switch: boot-loader images and system images for three different card types (management, fabric and line). Before using the **system image** or **update boot-loader** command, be sure that you are loading the appropriate image file; **boot-loader images are rarely updated in the field.**

Also note when upgrading system files that all system images on all cards should be from the same build; Fortinet recommends upgrading *all* system images when performing a system upgrade. Images are first copied to the management card, then updated; see *FortiSwitch Install Guide* for further details on the update procedure. To update the system image for a card, use the **system image** command (see page 231).

Example

```
(FS1KCH1032000249) (File)# update boot-loader extdisk ubootimage.img fabric 2
```

This updates the boot loader (BIOS) image on fabric card 2 from a file named "ubootimage.img" on the external disk.

6.2.11 verify system image

Syntax

```
verify system image { fabric | line | mgmt } <file_name>
```

Purpose

To verify the checksum of an image file.

Options & Parameters

fabric	Specifies that the image to be verified is for a fabric card.
line	Specifies that the image to be verified is for a line card.
mgmt	Specifies that the image to be verified is for a management card.
<file_name>	Specifies the file name for the image to be verified.

Examples

Management card example showing failed verification:

```
(FS1KCH1032000249) (File)# verify system image mgmt linux.dmsk.mc.img  
verify image: Bad data checksum 8a18fb4c 64b762ea  
verify system image: Failed
```

Fabric card example showing successful verification:

```
(FS1KCH1032000249) (File)# verify system image fabric linux.dmsk.fc.img  
Image:      FortiSwitch-1000 FC 3253 x.x.x  
Creation:   Sat Aug 9 15:03:32 2008  
Data Size:  11050249 Bytes  
Data Checksum: 0xBA1B8F5E
```

7 Config-LAG Mode

7.1 Overview

The Config-LAG Mode provides configuration commands for LAGs.

7.1.1 Access

This mode is accessed by using the **lag** command in Config Mode (and specifying a LAG ID).

7.1.2 Exit

To exit from this mode, use the **exit** command to return to Config Mode or the **end** command to return to Enable Mode.

7.2 Commands

add-port	Add a port to this LAG.
delete-port	Delete a port from this LAG.
end	Exit to Enable Mode.
exit	Exit to Config Mode.
fdb-table static	Configure a static MAC address to the port.
garp	Configure Generic Attribute Registration Protocol (GARP) parameters.
gmrp	Configure GARP Multicast Registration Protocol (GMRP) parameters.
gvrp	Configure GARP VLAN Registration Protocol (GVRP) parameters.
lACP	Enable/disable Link Aggregation Control Protocol (LACP) on the LAG.
mtu	Set the default MTU size.
name	Configure a name for the port LAG.
shutdown	Disable the LAG. The configuration remains unchanged, but no traffic is forwarded by the

	LAG.
spanning-tree	Set the spanning tree operational mode.
vlan	Configure VLAN parameters.

7.2.1 add-port

Syntax

`add-port <slot/port>`

Purpose

To add a port to the LAG being configured.

Options & Parameters

<code><slot/port></code>	Specifies the port to be added to the LAG in slot/port format.
--------------------------------	--

Note

IMPORTANT: GVRP must be disabled on member ports before they are added to the LAG. Adding member ports with GVRP enabled to a LAG may prevent the LAG from passing traffic.

To enable GVRP on a LAG, first disable GVRP on the member ports using the **no gvrp port-mode** command in Config-Port Mode (see page 263), then assemble the LAG, then enable GVRP on the LAG using the **gvrp port-mode** command in Config-LAG Mode (see page 244).

Example

(FS1KCH1032000249) (Config-LAG 1)#add-port 2/1

7.2.2 delete-port

Syntax

`delete-port <slot/port>`

Purpose

To remove a port from the LAG being configured.

Options & Parameters

<code><slot/port></code>	Specifies the port to be removed from the LAG in slot/port format.
--------------------------------	--

Notes

Removing all ports from a LAG does not delete the LAG itself. To remove the LAG, use the **no** form of the **lag** command in Config Mode.

Example

```
(FS1KCH1032000249) (Config-LAG 1)#delete-port 2/1
```

7.2.3 end

Syntax

end

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config-LAG 1)# end
```

7.2.4 **exit**

Syntax

`exit`

Purpose

To exit to Config Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config-LAG 1)# exit
```

7.2.5 fdb-table static

Syntax

fdb-table static <mac_address>

Purpose

To add a static MAC address to the LAG.

Options & Parameters

<mac_address>

Specifies the static MAC address to add to the FDB table for the LAG.

Notes

To configure the FDB table aging timeout, use the **fdb-table aging-time** command in Config Mode.

If a static MAC address is already configured in the chassis, the CLI will reject the configuration command. If the configured static MAC is already learned in the FDB table, the management software will overwrite the MAC entry with the newly configured static entry.

At any point, FortiSwitch software can only handle any MAC address at one single port. This is different from typical Independent VLAN Learning (IVL) switches, which can configure multiple entries of the same MAC address as long as they have the same VLAN tag.

Example

```
(FS1KCH1032000249) (Config-LAG 1)#fdb-table static 00:1A:F6:00:03:61
```

7.2.6 garp timer

Syntax

```
garp timer {join <10-100> | leave <20-600> | leave-all <200-6000> }
```

Purpose

To configure the Generic Attribute Registration Protocol (GARP) timer attributes.

Defaults

- The default GVRP join time is 20 centiseconds.
- The default GVRP leave time is 60 centiseconds.
- The default interval for the generation of leave-all packets is 1000 centiseconds.

Options & Parameters

join <10-100>	Specifies the GVRP join time – the interval between transmission of GARP packets registering membership for a VLAN or multicast group – in centiseconds.
leave <20-600>	Specifies the GVRP leave time – the interval between receiving an unregister request for a VLAN or a multicast group and deleting the VLAN entry – in centiseconds.
leave-all <200-6000>	Specifies the frequency with which “leave-all” packets – packets deleting all registration entries – are generated.

Notes

All forms of the **garp timer** command only have an effect when GVRP is enabled.

The “no” form of this command resets the specified time to the default:

no garp timer join resets the GVRP join time to 20 centiseconds

no garp timer leave resets the GVRP leave time to 60 centiseconds

no garp timer leave-all resets the “leave-all” generation interval to 1000 centiseconds

Examples

```
(FS1KCH1032000249) (Config-LAG 1)#garp timer join 30
```

```
(FS1KCH1032000249) (Config-LAG 1)#garp timer leave 200
```

```
(FS1KCH1032000249) (Config-LAG 1)#garp timer leave-all 2000
```

7.2.7 gmrp port-mode

Syntax

gmrp port-mode

Purpose

To enable GARP Multicast Registration Protocol (GMRP) on the LAG.

Options & Parameters

This command has no options or parameters.

Notes

In order for GMRP to be enabled on an individual LAG, GMRP admin mode must be enabled in Config Mode by using the **gmrp admin-mode** command. (See page 186)

Example

```
(FS1KCH1032000249) (Config-LAG 1)#gmrp port-mode
```

7.2.8 gvrp port-mode

Syntax

`gvrp port-mode`

Purpose

To enable or disable GARP VLAN Registration Protocol (GVRP) on this LAG.

Options & Parameters

This command has no options or parameters.

Notes

- **IMPORTANT:** You must disable GVRP on the member ports before assembling them into a LAG; failure to do so will create a LAG which cannot pass traffic.
- In order for GVRP to work on the LAG, GVRP must be enabled on the switch by using the `gvrp admin-mode` command in Config Mode. (See page 187)

Example

```
(FS1KCH1032000249) (Config-LAG 1)#gvrp port-mode
```

7.2.9 lacp

Syntax

lacp

Purpose

To enable Link Aggregation Control Protocol (LACP) on the LAG.

Defaults

LACP is enabled on all LAGs by default.

Options & Parameters

This command has no options or parameters.

Notes

When LACP is disabled on a LAG, the LAG becomes “static.” To disable LACP, use the **no** form of the command.

Examples

default:

```
(FS1KCH1032000249) (Config-LAG 1)lacp
```

This enables LACP on LAG 1.

“no” form:

```
(FS1KCH1032000249) (Config-LAG 1)no lacp
```

This disables LACP on LAG 1.

7.2.10 mtu

Syntax

mtu <64-10232>

Purpose

To set the Maximum Transmission Unit (MTU) value for the LAG.

Defaults

The MTU value is set to 1522 bytes (tagged) or 1518 bytes (untagged) by default.

Options & Parameters

<64-10232>	Specifies the Maximum Transmission Unit (MTU) size in bytes for the LAG.
------------	--

Example

(FS1KCH1032000249) (Config-LAG 1)#mtu 10232

7.2.11 name

Syntax

name <lag_name>

Purpose

To set the name for the LAG.

Defaults

Unnamed LAGs are called “default” by default.

Options & Parameters

<lag_name>	Specifies the name to be used for the LAG. Name can be up to 15 alphanumeric characters in length.
------------	--

Notes

A LAG name is used to identify the purpose or nature of the LAG to the operator. The LAG name appears in the output of the **show lag** commands. (See **show lag brief** on page 30 or **show lag** on page 104)

Example

```
(FS1KCH1032000249) (Config-LAG 1)#name office7LAG
```

7.2.12 shutdown

Syntax

shutdown

Purpose

To disable the LAG.

Options & Parameters

This command has no options or parameters.

Notes

This command leaves the configuration unchanged, but prevents the LAG from forwarding traffic. To remove the LAG entirely, use the **no** form of the **lag** command. (See page 189)

When a LAG is shut down, its admin mode is disabled and its link status is changed to “down.” For all its member ports, link status is “down” but admin mode remains enabled.

When a LAG is shut down, users cannot add new member ports to the LAG or delete any existing member ports from the LAG. To add or delete member ports, first enable the LAG using the “no” form of this command.

Example

```
(FS1KCH1032000249) (Config-LAG 1)#shutdown
```

7.2.13 spanning-tree

Syntax

```
spanning-tree { edgeport | hello-time <1-10> | port-mode | mst { <0> | <1-4094> } { cost { <1-200000000> | auto } | external-cost { <1-200000000> | auto } | port-priority <0-240> } }
```

Purpose

To set and configure the spanning tree operational mode for the LAG.

Defaults

- There is no default behavior for this command.
- STP is enabled by default on all LAGs (port mode is enabled by default).
- The hello time for the LAG is set to 2 seconds by default.
- Port priority is set to 128 by default.

Options & Parameters

edgeport	Configures the LAG as an edge port.
hello-time <1-10>	Sets the hello-time for the LAG in seconds. If not specified, default is 2.
port-mode	Enables the LAG for use by spanning trees.
mst { <0> <1-4094> }	Configures a Multiple Spanning Tree (MST) instance. Using 0 as the instance identifier configures the common and internal spanning tree. To configure another existing MST, use its identifier (between 1 and 4094).
cost { <1-200000000> auto }	Specifies the path cost (within the MST region) for the LAG when used by the specified MST instance. If auto is used in place of a numeric value, the path cost value is calculated automatically on the basis of link speed.
external-cost { <1-200000000> auto }	Specifies the external path cost (outside the MST region) for the LAG when used by the specified MST instance. If auto is used in place of a numeric value, the external path cost value is calculated automatically on the basis of link speed. Note: spanning tree version 802.1s (MSTP) is the default; if using version 802.1d (STP) or version 802.1w (RSTP) instead, use the external-cost option for configuring path cost for the LAG.
port-priority <0-240>	Specifies the priority for the port used by the specified MST instance.

Notes

- Switch-level spanning-tree configuration is performed in Config Mode. (See **spanning-tree** on page 211)
- MSTP (802.1s) is the default spanning tree protocol used on the FortiSwitch-1000. If you have configured the switch to run STP or RSTP instead, use the **external-cost** option to configure spanning tree path cost for the LAG.

Examples

edgeport:

(FS1KCH1032000249) (Config-LAG 1)#spanning-tree edgeport

hello-time:

(FS1KCH1032000249) (Config-LAG 1)#spanning-tree hello-time 10

mst:

(FS1KCH1032000249) (Config-LAG 1)#spanning-tree mst 0 external-cost auto

port-mode:

(FS1KCH1032000249) (Config-LAG 1)#spanning-tree port-mode

7.2.14 vlan

Syntax

```
vlan { acceptframe { all | vlanonly } | participation {auto <1-4094> | exclude <1-4094> | include <1-4094> } priority <0-7> | pvid <1-4094> | tagging <1-4094> }
```

Purpose

To configure VLAN parameters for the LAG.

Defaults

- The frame acceptance mode is set to “all” by default.
- The VLAN ID is set to 1 by default.

Options & Parameters

acceptframe { all vlanonly }	Configures the handling of untagged frames. Using all causes the LAG to accept all untagged or priority frames received and assign them the value of the VLAN ID for this LAG. Using vlanonly causes the LAG to drop all frames that do not have a VLAN tag.
participation { auto exclude include } <1-4094>	Sets the participation of this LAG in the specified VLAN.
priority <0-7>	Specifies the value for untagged frames received by this LAG.
pvid <1-4094>	Sets the VLAN ID for untagged frames received by the LAG.
tagging <1-4094>	Enables tagging for the specified VLAN. When tagging is enabled, traffic is transmitted as tagged frames.

Examples

acceptframe:

```
(FS1KCH1032000249) (Config-LAG 1)#vlan acceptframe all
```

participation:

```
(FS1KCH1032000249) (Config-LAG 1)#vlan participation auto
```

priority:

```
(FS1KCH1032000249) (Config-LAG 1)#vlan priority 0
```

pvid:

```
(FS1KCH1032000249) (Config-LAG 1)#vlan pvid 3255
```

tagging:

(FS1KCH1032000249) (Config-LAG 1)#vlan tagging 4045

8 Config-Port Mode

8.1 Overview

The Config-Port Mode provides configuration commands for individual ports.

8.1.1 Access

This mode is accessed by using the **port** command in Config Mode (and specifying a port to be configured).

8.1.2 Exit

To exit from this mode, use the **exit** command to return to Config Mode or the **end** command to return to Enable Mode.

8.2 Commands

Command	Purpose
description	Enter a description for the port.
end	Exit to Enable Mode.
exit	Exit to Config Mode.
fabric-control	Configure the bandwidth allocation of the fabric.
fdb-table	Configure static MAC addresses to the port.
flow-control	Enable 802.3x flow control on the port.
garp	Configure Generic Attribute Registration Protocol (GARP) parameters.
gmrp	Configure GARP Multicast Registration Protocol (GMRP) parameters.
gvrp	Configure GARP VLAN Registration Protocol (GVRP) parameters.
monitor	Configure port mirroring.
mtu	Set the default MTU size.
shutdown	Disable a port.

spanning-tree	Set the spanning tree operational mode.
vlan	Configure VLAN parameters.

8.2.1 description

Syntax

description <*description*>

Purpose

To create a description for the port.

Options & Parameters

<*description*>

Specifies the description for the port. Description text may be up to 256 printing characters except “!” and “?” and is to be entered in quotations marks.

Example

(FS1KCH1032000249) (Config-Port 2/1)# description "in-band management port"

8.2.2 end

Syntax

end

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config-Port 2/1)# end
```

8.2.3 **exit**

Syntax

exit

Purpose

To exit to Config Mode.

Options & Parameters

This command has no options or parameters.

Example

(FS1KCH1032000249) (Config-Port 2/1)# **exit**

8.2.4 fabric-control

Syntax

```
fabric-control { partition <2-1000> vlan { <1-4094> [1-4094] | all } | priority { 802.1d |  
diffserv } }
```

Purpose

To link a port VLAN to a fabric partition or to link frame priority to partition class.

Options & Parameters

partition <2-1000>	Specifies a partition to which to link one or more VLANs.
vlan { <1-4094> [1-4094] all }	Specifies which VLANs are to be added to the specified partition. Up to 20 VLANs can be added individually; all adds all available VLANs to the partition. The incoming traffic tagged with these VLANs is forwarded internally using only member SVLANs of the partition.
priority { 802.1p diffserv }	Specifies which priority field in the frame is used to delineate the partition class (default, a, b or c). If 802.1p is selected, then the frames priorities map to partition classes as follows: 0, 1: default 2, 3: a 4, 5: b 6, 7: c If diffserv is selected, then the frames priorities map to partition classes as follows: 0-31: default 32-63: a 64-95: b 96-127: c

Notes

- The **fabric-control** command in Config-Port mode is used exclusively to configure the port in relation to the fabric; to create the partitions and configure the fabric itself, use the **fabric-control** command in Config Mode.
- In addition to the default partition, a maximum of three additional partitions can be created on a port.

Example

```
(FS1KCH1032000249) (Config-Port 2/1)#fabric-control partition 2 vlan all
```

This adds all the available VLANs on port 2/1 to partition #2 without specifying a priority.

8.2.5 fdb-table static

Syntax

fdb-table static <mac_address>

Purpose

To add a static MAC address to the port.

Options & Parameters

<mac_address>

Specifies the static MAC address to add to the FDB table for the port.

Notes

- To configure the FDB table aging timeout, use the **fdb-table aging-time** command in Config Mode.
- If a static MAC address is already configured in the chassis, the CLI will reject the configuration command. If the configured static MAC is already learned in the FDB table, the management software will overwrite the MAC entry with the newly configured static entry.
- At any point, FortiSwitch software can only handle a given MAC address at one single port. This is different from typical Independent VLAN Learning (IVL) switches, which can configure multiple entries of the same MAC address as long as they have the same VLAN tag.

Example

```
(FS1KCH1032000249) (Config-Port 2/1)#fdb-table static 00:1A:F6:00:03:61
```

8.2.6 flow-control

Syntax

flow-control

Purpose

To enable 802.3x flow control for the port.

Defaults

802.3x flow control is disabled by default.

Options & Parameters

This command has no options or parameters.

Notes

The **flow-control** command in Config-Port mode enables 802.3x flow control (i.e., PAUSE) for the port only. To enable flow control on non-configurable internal ports (on line cards and fabric cards), use the **flow-control** command in Config Mode.

To show the state of flow control for a specific port, use the **show port** command in Enable Mode.

Example

```
(FS1KCH1032000249) (Config-Port 2/1)#flow-control
```

8.2.7 garp timer

Syntax

garp timer {**join** <10-100> | **leave** <20-600> | **leave-all** <200-6000> }

Purpose

To configure the Generic Attribute Registration Protocol (GARP) timer attributes.

Defaults

- The default GVRP join time is 20 centiseconds.
- The default GVRP leave time is 60 centiseconds.
- The default interval for the generation of leave-all packets is 1000 centiseconds.

Options & Parameters

join <10-100>	Specifies the GVRP join time – the interval between transmission of GARP packets registering membership for a VLAN or multicast group – in centiseconds.
leave <20-600>	Specifies the GVRP leave time – the interval between receiving an unregister request for a VLAN or a multicast group and deleting the VLAN entry – in centiseconds.
leave-all <200-6000>	Specifies the frequency with which “leave-all” packets – packets deleting all registration entries – are generated.

Notes

All forms of the **garp timer** command only have an effect when GVRP is enabled.

The “no” form of this command resets the specified time to the default:

no garp timer join resets the GVRP join time to 20 centiseconds

no garp timer leave resets the GVRP leave time to 60 centiseconds

no garp timer leave-all resets the “leave-all” generation interval to 1000 centiseconds

Examples

(FS1KCH1032000249) (Config-Port 2/1)#garp timer join 30

(FS1KCH1032000249) (Config-Port 2/1)#garp timer leave 200

(FS1KCH1032000249) (Config-Port 2/1)#garp timer leave-all 2000

8.2.8 gmrp port-mode

Syntax

gmrp port-mode

Purpose

To enable GARP Multicast Registration Protocol (GMRP) on the port.

Options & Parameters

This command has no options or parameters.

Notes

In order for GMRP to be enabled on an individual port, GMRP admin mode must be enabled in Config Mode by using the **gmrp admin-mode** command. (See page 186)

Example

```
(FS1KCH1032000249) (Config-Port 2/1)#gmrp port-mode
```

8.2.9 gvrp port-mode

Syntax

gvrp port-mode

Purpose

To enable or disable GARP VLAN Registration Protocol (GVRP) on this port.

Options & Parameters

This command has no options or parameters.

Notes

In order for GVRP to work on the port, GVRP must be enabled on the switch by using the **gvrp admin-mode** command in Config Mode. (See page 187)

Example

(FS1KCH1032000249) (Config-Port 2/1)#gvrp port-mode

8.2.10 monitor

Syntax

```
monitor <slot/port> { rx | tx | both }
```

Purpose

To enable and configure a destination for port mirroring.

Defaults

Port mirroring is disabled by default.

Options & Parameters

<code><slot/port></code>	Specifies the mirrored (source) port (in slot/port format) for a port mirroring session. The port currently being configured is the mirroring (destination) port. Note: source and destination ports must be on the same card.
<code>{ rx tx both }</code>	Specifies the mirroring mode. The rx option mirrors only traffic received, tx mirrors only traffic transmitted, and both mirrors all traffic on the source port.

Notes

- Port mirroring forwards a copy of each incoming or outgoing packet (or both) from one port of a switch to another port where the packet can be studied (source and destination ports must be on the same card). In this command, the source port (port being mirrored) is specified, and the destination port is the port currently being configured in Config-Port Mode.
- Mirroring does not affect the client on the original port.
- Maximum number of mirrors supported:
 - **5 mirrors per destination** (i.e., one port can be configured to mirror up to five other ports on the same line card)
 - **2 destinations per line card** (i.e., two different ports on a single line card can be configured to mirror other ports)
 - **4 destinations per system** (i.e., for a given switch, a maximum of four ports can be configured to mirror other ports)

Example

```
(FS1KCH1032000249) (Config-Port 4/1)#monitor 4/3 mode both
```

This enables mirroring of both incoming and outgoing packets on port 4/3, with the mirror destination being port 4/1.

8.2.11 mtu

Syntax

mtu <64-10232>

Purpose

To set the Maximum Transmission Unit (MTU) value for the port.

Defaults

The MTU value is set to 1522 bytes (tagged) or 1518 bytes (untagged) by default.

Options & Parameters

<64-10232>	Specifies the Maximum Transmission Unit (MTU) size in bytes for the port.
------------	---

Example

(FS1KCH1032000249) (Config-Port 2/1)#mtu 10232

8.2.12 shutdown

Syntax

shutdown

Purpose

To disable the port.

Options & Parameters

This command has no options or parameters.

Notes

- This command leaves the configuration unchanged, but prevents the port from forwarding traffic.
- When a port is shut down, its admin mode is disabled and its link status is changed to “down.”

Example

```
(FS1KCH1032000249) (Config-Port 2/1)#shutdown
```

8.2.13 spanning-tree

Syntax

```
spanning-tree { edgeport | hello-time <1-10> | port-mode | mst { <0> | <1-4094> } { cost { <1-200000000> | auto } | external-cost { <1-200000000> | auto } | port-priority <0-240> } }
```

Purpose

To set and configure the spanning tree operational mode for the port.

Defaults

- There is no default behavior for this command.
- STP is enabled by default on all ports (port mode is enabled by default).
- The hello time for the port is set to 2 seconds by default.
- Port priority is set to 128 by default.

Options & Parameters

edgeport	Configures the port as an edge port.
hello-time <1-10>	Sets the hello-time for the port in seconds. If not specified, default is 2.
port-mode	Enables the port for use by spanning trees.
mst { <0> <1-4094> }	Configures a Multiple Spanning Tree (MST) instance. Using 0 as the instance identifier configures the common and internal spanning tree. To configure another existing MST, use its identifier (between 1 and 4094).
cost { <1-200000000> auto }	Specifies the path cost (within the MST region) for the port when used by the specified MST instance. If auto is used in place of a numeric value, the path cost value is calculated automatically on the basis of link speed.
external-cost { <1-200000000> auto }	Specifies the external path cost (outside the MST region) for the port when used by the specified MST instance. If auto is used in place of a numeric value, the external path cost value is calculated automatically on the basis of link speed. Note: spanning tree version 802.1s (MSTP) is the default; if using version 802.1d (STP) or version 802.1w (RSTP) instead, use the external-cost option for configuring path cost for the port.
port-priority <0-240>	Specifies the priority for the port used by the specified MST instance.

Notes

- Switch-level spanning-tree configuration is performed in Config Mode. (See **spanning-tree** on page 211)
- MSTP (802.1s) is the default spanning tree protocol used on the FortiSwitch-1000. If you have configured the switch to run STP or RSTP instead, use the **external-cost** option to configure spanning tree path cost for the port.

Examples

edgeport:

```
(FS1KCH1032000249) (Config-Port 2/1)#spanning-tree edgeport
```

hello-time:

(FS1KCH1032000249) (Config-Port 2/1)#spanning-tree hello-time 10

mst:

(FS1KCH1032000249) (Config-Port 2/1)#spanning-tree mst 0 external-cost auto

port-mode:

(FS1KCH1032000249) (Config-Port 2/1)#spanning-tree port-mode

8.2.14 vlan

Syntax

```
vlan { acceptframe { all | vlanonly } | participation {auto <1-4094> | exclude <1-4094> | include <1-4094> } priority <0-7> | pvid <1-4094> | tagging <1-4094> }
```

Purpose

To configure VLAN parameters for the port.

Defaults

The frame acceptance mode is set to “all” by default.

The VLAN ID is set to 1 by default.

Options & Parameters

acceptframe { all vlanonly }	Configures the handling of untagged frames. Using all causes the port to accept all untagged or priority frames received and assign them the value of the VLAN ID for this port. Using vlanonly causes the port to drop all frames that do not have a VLAN tag.
participation { auto exclude include } <1-4094>	Sets the participation of this port in the specified VLAN.
priority <0-7>	Specifies the value for untagged frames received by this port.
pvid <1-4094>	Sets the VLAN ID for untagged frames received by the port.
tagging <1-4094>	Enables tagging on this port for the specified VLAN. When tagging is enabled, traffic is transmitted as tagged frames.

Examples

acceptframe:

```
(FS1KCH1032000249) (Config-Port 2/1)#vlan acceptframe all
```

participation:

```
(FS1KCH1032000249) (Config-Port 2/1)#vlan participation auto 3
```

priority:

```
(FS1KCH1032000249) (Config-Port 2/1)#vlan priority 0
```

pvid:

```
(FS1KCH1032000249) (Config-Port 2/1)#vlan pvid 3255
```

tagging:

(FS1KCH1032000249) (Config-Port 2/1)#vlan tagging 4045

9 Config-VLAN Mode

9.1 Overview

The Config-VLAN Mode provides configuration commands for VLANs.

9.1.1 Access

This mode is accessed by using the **vlan** command in Config Mode.

9.1.2 Exit

To exit from this mode, use the **exit** command to return to Config Mode or the **end** command to return to Enable Mode.

9.2 Commands

end	Exit to Enable Mode.
exit	Exit to Config Mode.
participation	Configure how ports participate in a specified VLAN.
port	Configure 802.1Q port parameters for VLANs.
vlan-id	Create a new VLAN or delete an existing VLAN.

9.2.1 **end**

Syntax

end

Purpose

To exit to Enable Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config-VLAN)# end
```

9.2.2 **exit**

Syntax

exit

Purpose

To exit to Config Mode.

Options & Parameters

This command has no options or parameters.

Example

```
(FS1KCH1032000249) (Config-VLAN)# exit
```

9.2.3 participation all

Syntax

participation all { auto | exclude | include } <1-4094>

Purpose

To configure how all ports participate in a specified VLAN.

Options & Parameters

auto <1-4094>	Sets participation for all ports in the specified VLAN to auto. All ports are always members of the specified VLAN.
exclude <1-4094>	Sets participation for all ports in the specified VLAN to “exclude.” No ports are ever members of the specified VLAN – equivalent to “forbidden”.
include <1-4094>	Sets participation for all ports in the specified VLAN to “include.” All ports are members of the specified VLAN.

Examples

auto:

```
(FS1KCH1032000249) (Config-VLAN)# participation all auto 500
```

exclude:

```
(FS1KCH1032000249) (Config-VLAN)# participation all exclude 500
```

include:

```
(FS1KCH1032000249) (Config-VLAN)# participation all include 500
```

9.2.4 port

Syntax

```
port { acceptframe all { all | vlanonly } | priority all <0-7> | pvid all <1-4094> | tagging all <1-4094> }
```

Purpose

To configure 802.1Q port parameters for VLANs.

Defaults

Frame acceptance mode is set to “all” by default.

VLAN ID for all ports is set to 1 by default.

Options & Parameters

acceptframe all { all vlanonly }	Sets the frame acceptance mode for all ports. If the option all is selected, untagged frames or priority frames received are accepted and assigned the value of the port VLAN ID. If the option vlanonly is selected, only frames received with a VLAN tag will be forwarded. All other frames will be dropped.
priority all <0-7>	Sets the priority for untagged frames received.
pvid all <1-4094>	Specifies the VLAN ID to be assigned to untagged packets received on all ports. If not specified, the default is 1.
tagging all <1-4094>	Enables tagging on frames transmitted by all ports in the specified VLAN. When tagging is enabled, traffic is transmitted as tagged frames.

Examples

acceptframe:

```
(FS1KCH1032000249) (Config-VLAN)# port acceptframe all vlanonly
```

priority:

```
(FS1KCH1032000249) (Config-VLAN)# port priority all 0
```

pvid:

```
(FS1KCH1032000249) (Config-VLAN)# port pvid all 300
```

tagging:

```
(FS1KCH1032000249) (Config-VLAN)# port tagging all 3
```

9.2.5 vlan-id

Syntax

```
vlan-id { <1-4094> | <1-4094> name <new_name> | makestatic <2-4094> }
```

Purpose

To create or name a VLAN, to delete a VLAN, or to make a dynamic (learned) VLAN static.

Defaults

When executed with a valid VLAN ID and no other options, this command creates a static VLAN with the specified ID by default.

Options & Parameters

<code><1-4094></code>	Specifies a valid VLAN. When used with no other options, this creates a static VLAN with the specified ID if it does not already exist.
<code><1-4094> name <new_name></code>	Sets the name of the specified VLAN to the specified name.
<code>makestatic <2-4094></code>	Changes the specified dynamic, learned VLAN to a static VLAN. Note: the default VLAN (VLAN 1) is always static.

Notes

- This command is used for the creation of static VLANs; dynamic VLANs are learned through GVRP protocol.
- If a dynamic VLAN has already been learned via GVRP, a static VLAN with the same ID cannot be created. Instead, use the **makestatic** option to make the VLAN static. (Dynamic VLANs do not persist over a reboot and can not be configured by the operator.)
- Use the **no** form of this command to delete an existing VLAN.

Examples

default:

```
(FS1KCH1032000249) (Config-VLAN)# vlan-id 500
```

name:

```
(FS1KCH1032000249) (Config-VLAN)# vlan-id 500 name testingVlan
```

makestatic:

```
(FS1KCH1032000249) (Config-VLAN)# vlan-id makestatic 500
```

no (deleting an existing VLAN):

```
(FS1KCH1032000249) (Config-VLAN)# no vlan-id 500
```

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