Cajun™ P550/P220
Command Line Interface
Reference Guide
Version 4.0

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Cajun™ P550™/P220 Command Line Interface Reference Guide Version 4.0

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Preface

Overview

The *Cajun P550/P220 Command Line Interface Reference Guide* provides reference material for the Cajun P550/P220 Command Line Interface.

CAUTION: As the Cajun P550/P220 Command Line Interface is still under construction, this guide will be updated frequently.

Overview of The Contents

This guide contains the following chapters:

Chapter 1, Using the Command Line Interface — Provides information on how to use the Cajun P550 Command Line Interface.

Chapter 2, AFT — Provides descriptions of the AFT commands.

Chapter 3, AppleTalk — Provides descriptions of the Appletalk commands.

Chapter 4, Buffering — Provides descriptions of the buffering commands.

Chapter 5, Console — Provides descriptions of the console commands.

Chapter 6, DVMRP — Provides descriptions of the DVMRP commands.

Chapter 7, Hunt — Provides descriptions of the Hunt Group commands.

Chapter 8, IGMP — Provides descriptions of the IGMP commands.

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Chapter 11, IPX — Provides descriptions of the IPX commands.

Chapter 12, L3_Cache — Provides descriptions of the Layer 3 Cache commands.

Chapter 13, L3 MCAST— Provides descriptions of the Layer 3 Multicast commands.

Chapter 14, LDAP — Provides descriptions of the LDAP commands.

Chapter 15, Logging — Provides descriptions of the log commands.

Chapter 16, MCAST — Provides descriptions of the Intelligent Multicasting commands.

Chapter 17, Module — Provides descriptions of the module commands.

Chapter 18, OSPF — Provides descriptions of the OSPF commands.

Chapter 19, Policy — Provides descriptions of the policy commands.

Chapter 20, Port — Provides descriptions of the port commands.

Chapter 21, Power Cool RAM — Provides descriptions of commands for managing system fans, power, and memory.

Chapter 22, SNMP — Provides descriptions of the SNMP commands.

Chapter 23, STAP — Provides descriptions of the STAP commands.

Chapter 24, Switch Fab — Provides descriptions of the commands for managing the switch fabric of the Cajun P550.

Chapter 25, Switch IP— Provides descriptions of the commands for managing IP routes and interfaces.

Chapter 26, System — Provides descriptions of commands for copying and erasing files, displaying system information, and initializing NVRAM.

Chapter 27, Temps — Provides descriptions of commands for managing temperature warnings and shutdowns.

Chapter 28, UI — Provides descriptions of the user interface commands.

Chapter 29, VLAN — Provides descriptions of commands for managing VLANs.

Chapter 30, VRRP — Provides descriptions of the VRRP commands.

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Audience

This guide is intended for:

- ❒ Network manager or administrator
- ❒ Hardware installer

Contacting Lucent Technologies

For information about Lucent Data Networking products and services, please consult the Lucent World Wide Web site at **http://www.lucent.com**.

If you have any questions, please call Technical Support at 1-800-237-0016, press 0 at the prompt, then dial ext. 73300. If you are an international customer, please call Technical Support at 1-813-217-2425.

Online Documentation

Lucent Technologies maintains copies of all technical documentation on the corporate web server. To access online documentation, including HTML and PDF documents, use Netscape Navigator version 4.5 or above or Internet Explorer version 3.x or above and type the URL:

`http://pubs.lucentctc.com/`

Installing Online Documentation and Help Files

Certain resources used by the Web Agent are located off the switch to preserve switch memory. Setting up a help server location for the switch allows the switch to access:

- ❒ Online documentation
- ❒ Bitmaps used as part of the interface (logo, wallpaper)
- ❒ Online help files for the Web Agent

There are two ways to provide this information to the switch:

- ❒ Install the Lucent HTTP documentation server (available on the Lucent user documentation CD, CajunDocs)
- ❒ Add the files to an existing web server on your network

Installing the Lucent HTTP Documentation Server

Lucent provides HTTP server software that you can install to provide access to documentation and online help directly from the switch. The server must be running a Win32 compatible operating system (for example, Windows 95, Windows 98, or Windows NT).

To install the server, you must perform one of the following:

❒ Run the **Setup** program from the CajunDocs CD-ROM

❒ Click on the latest released version of the CajunDocs CD from the Lucent Publications web site (http://pubs.lucentctc.com/cdrom/cajundocs.html) and double-click **setup.exe**. This extracts the server and the online help system to the server machine and drive.

Starting the Lucent HTTP Web Server

To run the Lucent HTTP server:

1. Click on your Win32/NT Start Menu.
2. Select the **CajunDocs** program group and select document server from that program group.

The Lucent document server will launch. To access this server from a Web browser you need to set a server location on the switch, as specified in the next section.

Entering the Server Location at the Switch

To set the location of the documentation server:

1. Launch your Web browser and connect to your switch.
2. Enter your user name and password at the respective prompts and click Login.
3. In the **System Configuration** section of the Web Agent window, click **Server Location**. The **Online Help Configuration** dialog box opens.
4. In the **HTTP Server Location** field, enter the **host name** or **IP address** of the HTTP server followed by the server name with a port designation of *:2010* (for example, for a host named phantom, enter: http://phantom:2010).

If you decide to install your online help on a Web server other than the Lucent HTTP server bundled on the CajunDocs CD-ROM, then specify the URL without a port number if your Web server runs on port 80 (for example, http://www.abc-company.com). If your Web server does not run on port 80, you need to add the port number (for example, http://host/path:port).

Note: The default port number for HTTP is port 80. The default port number for telnet is 126.

Adding the Document Files to an Existing Server

If you decide to install your online help on a Web server other than the Lucent HTTP server bundled on the CajunDocs CD-ROM, transfer the help subdirectory to that Web server and enter the URL for that web server in the Server Location field.

For example, if you transfer the CajunDocs help directory to your company server (http://www.abc-company.com) you would need to:

1. Install the online help and documentation from the CajunDocs CD to a Windows95 or NT node in your network.
2. Transfer the entire help subdirectory located in **C:\CajunDocs** to the root directory of your Web server.
3. Launch your browser and connect to your switch.
4. Enter your user name and password at the respective prompts and click Login.
5. In the **System Configuration** section of the Web Agent window, click **Server Location**. The Online Help Configuration dialog box opens.
6. In the **HTTP Server Location** field, enter the **server location** (for example, http://www.abc-company.com).
7. In the **HELP Directory Location** field, enter the **directory name** of your help files. For example, help.

Note: The default for the help directory is *help*. You do not need to change this unless you changed the name of your help directory prior to transferring it to your Web server.

Downloading an Updated CajunDocs CD from the Internet

The server and help files are available on the Internet. To download update your CajunDocs CD:

1. Launch a web browser and go to the **CajunDocs Installer** Web page at:

   http://pubs.lucentctc.com/cdrom/cajundocs.html

2. Click the latest version CajunDocs CD-ROM installer to download into the directory you previously created.

For more information on this product, refer to the online documentation that comes on your CajunDocs CD-ROM or refer to http://pubs.lucentctc.com to review the online documentation there.

Documentation Feedback

If you have comments about the technical accuracy or general quality of this document please contact us at:

`techpubs@lucent.com`

Please cite the document title, part number, and page reference, if appropriate.

Related Documents

This section provides information on supporting documentation, including:

- ❒ Lucent Documents
- ❒ Reference Documents

Lucent Documents

The following documents provide additional information on Lucent products:

P500 Manager User's Guide, which describes the installation and use of Lucent's Java-based, multiswitch element management system.

For a complete list of Acacia documents, refer to our web site (http://www.acacianet.com/).

Reference Documents

The following documents supply related background information:

❒ *Internetworking with TCP/IP Volume I* — 3rd Edition, Douglas E. Comer, ISBN 0-13-216987-8.

❒ *Internet Routing Architectures* — Cisco Press, Bassam Halabi

❒ *Routing in the Internet* — Christian Huitema, ISBN 0-13-132192-7

❒ *Interconnections: Bridges and Routers* — Radia Perlman, ISBN 0-201-56332-0

Terminology

Throughout the book, the term Layer 2, often followed by the abbreviation L2, is used to indicate switching capabilities. For example, the name, *Layer 2 Supervisor Module*, indicates a supervisor module that enables switching.

The terms, Multilayer and Layer 3, often followed by the abbreviation L3, refer to the combined ability to switch and route. For example, the name, *Multilayer Supervisor Module*, indicates a supervisor module that provides switching and routing capabilities.

Using Note, Caution, and Warning

Note: Provides additional information about a procedure or topic.

CAUTION: Indicates a condition that may damage hardware or software.

WARNING: Indicates a condition that may cause *bodily injury* or *death*.

1 Overview

Overview

This chapter describes:

- ❒ Command Mode Summaries
- ❒ Accessing/Exiting the Command Modes
- ❒ Basic Functions
- ❒ Accessing the CLI

Command Mode Summaries

The Cajun P550/P220 CLI consists of various command modes. The commands you can enter depend on the mode you are in. Each command mode has a distinct prompt. This manual describes the main command modes listed in Table 1-1.

Table 1-1. *Main Command Mode Summaries*

Mode	Description	To Access	Prompt
User	The mode you are in after login. It includes a limited number of commands to display status and statistic information.	Log in.	Cajun>
Privileged	Contains the commands from the User mode and the commands to set operating parameters.	From the User mode, enter **enable**.	Cajun#
Global	Commands to configure the system as a whole.	From the Privileged mode, enter **configure**.	Cajun (configure)#
Router	Commands to configure the routing protocols.	From Global mode, enter **router protocol**.	Cajun (config-router:protocol)#
Interface	Commands to configure the interfaces.	From Global mode, enter **interface type number**.	Cajun (config-if:interface)#
To exit a command mode, enter the **exit** command.			

Accessing/Exiting the Command Modes

Use the following information to access and exit the command modes.

Table 1-2. *Accessing/Exiting the Command Modes*

Main Command Modes			
Mode	**To Access**	**Prompt**	**To Exit**
User	Log in.	Cajun>	Enter **exit**.
Privileged	From the User mode, enter **enable**.	Cajun#	**Disable** or **exit** returns to the User mode.
Global Configuration	From the Privileged mode, enter **configure**.	Cajun (configure)#	**Exit** returns to the Privileged mode.
Interface Configuration	From Global the Configuration mode, enter **interface type number**.	Cajun (configure-if)#	**Exit** returns to the Global Configuration mode. **End** or **exit** returns to Privileged mode.
Router Configuration	From the Global Configuration mode, enter **router type**.	Cajun (configure-router:dvmrp)#	**Exit** returns to the Global Configuration mode. **End** returns to the Privileged mode.

Basic Functions

Help

Enter a question mark (**?**) at the system prompt to display the commands in a mode. For other help, use the following commands.

Table 1-3. *Basic Functions*

Command	**Description**	**Example**
partial-command**?** (First tokens only - not whole syntax)	Lists the commands that begin with the specified character string. There is no space between the command and question mark.	Cajun# m? mrinfo Cajun#
partial-command **<Tab>**	Completes a command name.	Cajun# **conf<Tab>** Cajun# **configure**
partial-command **+**	Lists the remaining syntax of all commands that begin with the character string.	Cajun> leg +
+	Lists all of the commands for the current mode - complete syntax and help descriptions.	Cajun# +
?	Lists, if unique, all commands for the current command mode.	Cajun (config-subif)# ?
command **?** (Gives the next token (parameter or keyword))	Lists the command parameters (with a brief explanation, if available). There is a space between the command and the question mark.	Cajun# clear ?
command][parameter] **?** (Gives the next token (parameter or keyword))	Lists the arguments for a parameter. There is a space between the parameter and the question mark.	Cajun# show ip ospf ?

Command Syntax Conventions

Convention	Description
keyword	A command keyword. An alphanumeric string with “-” allowed.
<parameter>	Variables for which you supply values. A command parameter name, where the name can be anything.
[optional]	Optional syntax that can be a keyword, parameter, option or any combination thereof.
{option1|option2 }	Required - one of the alternatives must be selected. The “|” symbol, which stands for “or” is only valid in this context.
[a{optional1|optional2}]	Choice(s) for optional syntax.
[...,expansion]	Zero or more occurrences of "expansion" are possible. Expansion must be a keyword, parameter, options or any combination thereof. Complete contents of the bracket [...<uid1><uid2>] (“user-ids”) implies that users must be added to the system two at a time.

No Form of Commands

Most CLI commands have a **no** form. In general, the **no** form disables a feature/function or restores a default for Layer 3 commands. **Clear** disables the Layer 2 **set** commands. The Description section of each command describes the **no** or **clear** form (if applicable to the command).

Command Line History Keys

The history buffer stores the last **20** commands you have entered. Use these key sequences to recall commands from the history buffer.

Keys	Function
Ctrl-P	Recalls the most recent command in the history buffer. Repeat the key sequence to recall the other previous commands.
Ctrl-N	Returns to the more recent command in the history buffer after Ctrl-P is used to recall commands. Repeat the key sequence to recall the other most recent commands.
Ctrl-C	Enables you to exit from help command (+).

Accessing the CLI

There are two ways to access the Cajun P550/P220 CLI:

1. Using telnet
2. Using a serial interface.

Using Telnet

To access the CLI using telnet:

1. Obtain the name and password for the user account you will be using.
2. At the system prompt, enter **telnet** and the IP address or hostname to which you are telnetting.

```
telnet <IP address> or hostname
```

Using a Serial Interface

To access the CLI using a serial interface (such as HyperTerminal):

1. Obtain the IP address you want to access.
2. Set up a new connection within the serial interface and proceed to connect with the host as directed by the instructions in the specific serial interface software you are using.

2 AFT

Overview

This chapter describes:

- clear aft instance invalid-learned-entries vlan
- clear aft instance learned-entries vlan
- set aft agetime
- set aft auto-sizing-threshold
- set aft entry
- set aft instance vlan (auto-increment)
- set aft instance vlan (hash-table-size)
- set aft super-agetime
- show aft config
- show aft entry
- show aft instance

clear aft instance invalid-learned-entries vlan

Command Mode: Configuration

Description

Delete all learned entries from a particular AFT instance.

Command Syntax

To Enable:	`clear aft instance invalid-learned-entries vlan {<vlan-id> | name <vlan-name>}`

Table 2-1. *Parameters, Keywords, Arguments*

Name	Definition
mac-address	The MAC address associated with this entry.
vlan-id	Specifies the AFT instance associated with the ID of this VLAN.
name	**vlan-name** - Specifies the AFT instance associated with the name of this VLAN.

Sample Output

This example clears all invalid learned entries in the AFT instance for the vlan named "Default."

```
Cajun(configure)# clear aft instance invalid-learned-entries vlan
1
All Invalid Learned Entries successfully deleted in AFT Instance
for Vlan "Default" (vlanID 1).
```

clear aft instance learned-entries vlan

Command Mode: Configuration

Description

Delete all learned entries and invalid learned entries from a particular AFT instance.

Command Syntax

To Enable:	`clear aft instance learned-entries vlan {<vlan-id> | name <vlan-name>}`

Table 2-2. *Parameters, Keywords, Arguments*

Name	Definition
mac-address	The MAC address associated with this entry.
vlan	**vlan-id** - The ID of the VLAN.
name	**vlan-name** - The name of the VLAN.

Sample Output

This example clears all learned entries.

```
Cajun(configure)# clear aft instance learned-entries vlan 1
All Learned Entries successfully deleted in AFT Instance for Vlan
“Default” (vlanID 1).
```

set aft agetime

Command Mode: Configuration

Description

Set the AFT age time. The default time is 300 seconds.

Command Syntax

To Enable:	`set aft agetime <age-time-value>`

Table 2-3. *Parameters, Keywords, Arguments*

Name	Definition
age-time-value	Enter the amount of time, in seconds, after which aft entries become invalid. The range is **10-10000 seconds.**

Sample Output

This example sets the aft age time to 350 seconds.

```
Cajun(configure)# set aft agetime 350
AFT Age Time successfully set to 350.
```

set aft auto-sizing-threshold

Command Mode: Configuration

Description

Set the AFT auto sizing threshold (percentage before auto-incrementing hash tables). The default percentage is 40%.

Command Syntax

To Enable:	`set aft auto-sizing-threshold <threshold-value>`

Table 2-4. *Parameters, Keywords, Arguments*

Name	Definition
threshold-value	Enter the desired percentage full that a hash table must be before it auto-increments itself. Valid values range from **5-90** percent.

Sample Output

This example sets the aft auto sizing threshold to 60%.

```
Cajun(configure)# set aft auto-sizing-threshold 60
AFT Auto Sizing Threshold successfully set to 60%
```

set aft entry

Command Mode: Configuration

Description

Create a static AFT entry or modify an existing static or learned AFT entry. The negative form of this command deletes a static or learned aft entry.

Command Syntax

To Enable:	`set aft entry <mac-address> vlan {<vlan-id> | name <vlan-name>} port-binding {filter | forward <mod-port-spec>} [persistence {ageout | permanent}] [priority {normal|high}]`
To Disable:	`clear aft entry <mac-address> vlan {<vlan-id> | name <vlan-name>}`

Table 2-5. Parameters, Keywords, Arguments

Name	Definition
mac-address	The MAC address associated with this entry.
vlan	The keyword for per VLAN commands. **vlan-id** - The numerical ID of a specific VLAN.
name	The keyword for the VLAN name. **vlan-name** - The name of the vlan.
port-binding	Options include: filter - AFT entries with a filter port binding are dropped when received. forward - The port from which the mac address is forwarded. **mod-port-spec** - Specifies a particular port.
persistence	Options include: ageout - The entry is aged as per-learned entries. permanent - The entry is not aged out.
priority	Options include: normal - The AFT entry has normal priority. high - The AFT entry has high priority.

Sample Output

This example sets an aft entry on “Default” vlan, with a port binding option of “forward,” a persistence option of “ageout” and a “normal” priority.

```
Cajun(configure)# set aft entry 44:44:44:44:44:44 vlan name
“Default” port-binding forward 3/1 persistence ageout priority
normal
AFT Entry successfully created.
```

set aft instance vlan (auto-increment)

Command Mode: Configuration

Description

Set the auto-increment flag for a particular VLAN's AFT instance.

Command Syntax

To Enable:	`set aft instance vlan {<vlan-id> | name <vlan-name>} auto-increment-ht-size {true|false}`

Table 2-6. *Parameters, Keywords, Arguments*

Name	Definition
vlan	The AFT instance associated with the VLAN. **vlan-id** - The numerical ID of a specific VLAN.
name	The keyword for the VLAN name. **vlan-name** - The name of the vlan.
auto-increment-ht-size	Specify whether or not the hash table should auto-increment itself. The options are: • **true** - The hash table auto-increments itself. • **false** - The hash table does not auto-increment itself.

Sample Output

This example sets the auto-increment flag for the aft instance vlan named “Default” to false, which means that the hash table does not auto-increment itself.

```
Cajun(configure)# set aft instance vlan name ‘Default”
auto-increment-ht-size false
AFT Instance Hash Table Auto-Increment for Vlan “Default” (vlanID
1) successfully set to false
```

set aft instance vlan (hash-table-size)

Command Mode: Configuration

Description

Set the hash table size for a particular VLAN's AFT instance.

Command Syntax

To Enable:	`set aft instance vlan {<vlan-id> | name <vlan-name>} hash-table-size {16|32|64|128|256|512|1024|2048|4096|8192}`

Table 2-7. *Parameters, Keywords, Arguments*

Name	Definition
vlan	The AFT instance associated with the VLAN. **vlan-id** - The numerical ID of a specific VLAN.
name	The keyword for the VLAN name. **vlan-name** - The name of the vlan.
hash-table-size	Specifies the hash table size. The table size specified must be one of the following (all values are power of 2): **16|32|64|128|256|512|1024|2048|4096|8192**

Sample Output

This example sets the AFT instance vlan named “default” hash table size to 2048.

```
Cajun(configure)# set aft instance vlan name “Default”
hash-table-size 2048
AFT Instance Hash Table Size for Vlan “Default” (vlanID 1)
successfully set to 2048
```

set aft super-agetime

Command Mode: Configuration

Description

Set the AFT super age time. The default is seven (7) days.

Command Syntax

To Enable:	`set aft super-agetime <super-age-time-value>`

Table 2-8. *Parameters, Keywords, Arguments*

Name	Definition
super-age-time-value	Enter the amount of time, in days, after which invalid aft entries are removed. The range is **1-30 days.**

Sample Output

This example sets the aft super age time to 8 days.

```
Cajun(configure)# set aft super-agetime 8
AFT Super Age Time successfully set to 8
```

show aft config

Command Mode: Configuration

Description

Show the global configuration of the Address Forwarding Table.

Command Syntax

To Enable:	`show aft config`

Sample Output

```
Cajun> show aft config
AFT Manager Configuration:
==========================
Age Time: 300
Super Age Time: 604800

AFT PLE Configuration:
======================
Initial Hash Table Size:   1024
Utilization Threshold:     40%
Bkt Size To Trig Util:     32
HT Size Mult To Trig Util: 12
```

show aft entry

Command Mode: User

Description

Search for, and display all AFT entries that match the criteria specified in the command.

Command Syntax

To Enable:	`show aft entry [mac <wildcard-mac-address>] [vlan {<vlan-id> | name <vlan-name>}] [port-binding {cpu|filter|forward [<mod-port-spec>]}] [status {learned|management|self|multicast}]`

Table 2-9. *Parameters, Keywords, Arguments*

Name	Definition
mac	The MAC address associated with this entry. **wildcard-mac-address** - the wildcard is indicated by a single asterisk (*) before the MAC address.
vlan	**vlan-id** - the ID of the VLAN.
name	**vlan-name** - the name of the VLAN.
port-binding	Binds the port to the specified VLAN. **cpu** - the supervisor module (it stores the entry). **filter** - filters the entry. **forward** - forwards the entry. **mod-port-spec** - the module and port.
status	The status of the address entry. Options include: • learned • management • self • multicast

Sample Output

```
Cajun> show aft entry
AFT Entries matching search criteria: “All Entries”
=========================================================================
MAC Address       Port         Valid   VlanGID  Priority  Persistence
Status
-----------       ----         -----   -------  --------  -----------
01:80:C2:00:00:00 cpu          valid   2        high      permanent
self
01:80:C2:00:00:01 cpu          valid   2        high      permanent
self
01:80:C2:00:00:02 filter       valid   2        normal    permanent
self
01:80:C2:00:00:03 filter       valid   2        normal    permanent
self
01:80:C2:00:00:04 filter       valid   2        normal    permanent
self
.
.
.
```

show aft instance

Command Mode: User

Description

Show the AFT instance for a particular VLAN or show all AFT instances for all VLANs. If no VLAN parameter is specified, all instances show on the switch.

Command Syntax

To Enable:	`show aft instance [vlan {<vlan-id> | name <vlan-name> }]`

Table 2-10. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	Specifies the aft instance associated with the ID of this VLAN.
name	**vlan-name** - Specifies the aft instance associated with the name of this VLAN.

Sample Output

```
Cajun> show aft instance
AFT Instance Configuration:
===========================
Instance for Vlan “Default” (vlanID 1)
  AutoSizeHT:            true
  UseConfHTsize:         false
  KeepInvalidInCol:      false
  UseInvalidInBktSizing: true
  KeepInvalidInBkt:      false
  ConfigHTsize:          1024
```

```
Instance for Vlan “Discard” (vlanID 8193)
  AutoSizeHT:            false
  UseConfHTsize:         false
  KeepInvalidInCol:      false
  UseInvalidInBktSizing: true
  KeepInvalidInBkt:      false
  ConfigHTsize:          1
.
.
.
```

3 Appletalk

Overview

This chapter describes:

- appletalk access-group
- appletalk access-list
- appletalk address
- appletalk admin-state
- appletalk cable-range
- appletalk echo
- appletalk mac-format
- appletalk routing
- appletalk static cable-range
- appletalk vlan
- appletalk zone
- clear appletalk arp
- clear appletalk route
- clear appletalk traffic
- ping appletalk
- show appletalk access-lists
- show appletalk arp
- show appletalk globals
- show appletalk interface

- ❒ show appletalk nbp
- ❒ show appletalk route
- ❒ show appletalk static cable-range
- ❒ show appletalk traffic
- ❒ show appletalk zone

appletalk access-group

Command Mode: Interface

Description

Assign an access list to an Apple Talk interface. The **no** form of this command removes the access list from the interface.

Command Syntax

To Enable:	`appletalk access-group <access-list-number>`
To Disable:	`no appletalk access-group <access-list-number>`

Table 3-1. *Parameters, Keywords, Arguments*

Name	Definition
access-list-number	A decimal value which specifies the identifier of the access list. This is a number between 600 and 663.

Sample Output

`Cajun(config-if:serial0)#` **appletalk access-group 625**

System Supported: P550R

appletalk access-list

Command Mode: Configuration

Description

Create an Appletalk Access List. The **no** form of this command removes an Appletalk Access List. The default is to permit all zones and all NBP objects.

The access list applies to either an Appletalk zone name or to the object portion of an NBP entity. To delete a zone from the zone list, delete the static route first.

Command Syntax

To Enable:	`appletalk access-list <access-list-number> {{deny|permit} {zone|nbp} <name>|additional-zones|additional-nbps}`
To Disable:	`[no] appletalk access-list <access-list-number>`

Table 3-2. *Parameters, Keywords, Arguments*

Name	Definition
access-list • access-list-number • deny | permit • zone | nbp	Number of an access list. • **access-list-number** is the identifier (in decimal) of the access list. The access-list-number for nbp must be between **600** and **631**. The access-list-number for zone must be between **632** and **663**. • **Deny** does not permit access when conditions match. Specifying “deny” denies access if the conditions are matched; specifying “permit” permits access if the conditions are matched. • **Permit** allows access when conditions match. • **Zone** applies the access-list to Appletalk Zone names. Specifying “zone” indicates that this access list applies to Appletalk Zone Names. Specifying “nbp” indicates that this access list applies to the name field of Appletalk Name Binding Protocol (NBP) entities. • **Nbp** applies the access-list to the name field of Appletalk Naming Binding Protocol (NBP) entities.
name	The name of the zone or NBP object to which this entry applies.
additional-zones	Additional zone names. This keyword defines the default action to take for access check, which apply to zones.
additional-nbps	Additional Naming Binding Protocol entities. This keyword defines the default action to take for access checks, which apply to nbp.

System Supported: P550R

appletalk address

Command Mode: Interface

Description

Configure an Appletalk Phase I Address for an Interface. The **no** form of this command removes the Appletalk interface itself.

Command Syntax

To Enable:	`appletalk address <network.node>`
To Disable:	`[no] appletalk address`

Table 3-3. *Parameters, Keywords, Arguments*

Name	Definition
network.node	• **network** - A 16-bit network number between **0** and **66279**. • **node** - An 8-bit node number between **0** and **254**. Separate the *network* and *node* values with a period. When omitted, the Appletalk address defaults to 0.0.

System Supported: P550R

appletalk admin-state

Command Mode: Interface

Description

Set the administrative state of an Appletalk Interface. The default value is up.

Command Syntax

To Enable:	`appletalk admin-state {up|down}`

Table 3-4. *Parameters, Keywords, Arguments*

Name	Definition
up|down	The administrative state of an Appletalk interface. • **up** - The administrative state of the interface is active. • **down** - The administrative state of the interface is inactive.

System Supported: P550R

appletalk cable-range

Command Mode: Interface

Description

Configure an Appletalk Phase II for an interface. The **no** form of this command disables Appletalk for this interface.

Command Syntax

To Enable:	`appletalk cable-range <cable-range>[<network.node>]`
To Disable:	`[no] appletalk cable-range`

Table 3-5. *Parameters, Keywords, Arguments*

Name	Definition
cable-range	An optional parameter to indicate the range of the Appletalk network values to be used on this interface. Specify start and end values between 0 and 65279 and separate the values with a hyphen. The starting network number must be less than the ending network number. When *cable-range* is omitted, the interface tries to configure the Appletalk network and obtains its configuration from another Appletalk router.
network.node	The AppleTalk network address to assign to the interface. When *network.node* is omitted, the Appletalk address defaults to 0.0. • **network** - A 16-bit network number between **0** and **66279**. • **node** - An 8-bit node number between **0** and **254**.

Sample Output

```
Cajun(config-if:serial0)# appletalk cable-range 222.244
```

System Supported: P550R

appletalk echo

Command Mode: Privileged

Description

Send an Appletalk echo request to a specified Appletalk node.

Command Syntax

To Enable:	`appletalk echo <network.node>`

Table 3-6. *Parameters, Keywords, Arguments*

Name	Definition
network.node	• **network** - The DDP network address of the Appletalk device. • **node** - The DDP node address of the Appletalk device.

System Supported: P550R

appletalk mac-format

Command Mode: Interface

Description

Set the Appletalk Interface MAC format to be used. The default value is **snap.** The **no** form of this command resets the MAC format for the interface to the default value.

Command Syntax

To Enable:	`appletalk mac-format {ethv2|snap}`
To Disable:	`[no] appletalk mac-format`

Table 3-7. *Parameters, Keywords, Arguments*

Name	Definition
ethv2|snap	• **ethv2** - Ethernet Version 2. • **snap** - Subnetwork Access Protocol.

Sample Output

This example sets the Appletalk Interface MAC format to ethv2.

`Cajun(config-if:serial0)#` **appletalk mac-format ethv2**

System Supported: P550R

appletalk routing

Command Mode: Configuration

Description

Enable Appletalk routing. The **no** form of this command disables Appletalk routing. The default for Appletalk routing is **disabled**.

Command Syntax

To Enable:	`appletalk routing`
To Disable:	`[no] appletalk routing`

System Supported: P550R

appletalk static cable-range

Command Mode: Configuration

Description

Create an appletalk static route. The **no** form of this command removes the static route itself, or only removes a zone from the static route if the zone name is supplied.

Command Syntax

To Enable:	`appletalk static cable-range <cable-range> to <network.node> [floating] zone <zone-name>`
To Disable:	`[no] appletalk static cable-range <cable-range> to <network.node>`

Table 3-8. *Parameters, Keywords, Arguments*

Name	Definition
cable-range	The range of Appletalk network values to be used for this static route. Specify start and end values, in decimal, between 0 and 65279 and separate the values with a hyphen. The starting network number must be less than the ending network number. The next hop appletalk router is specified via the network.node parameter.
network.node	Specifies the Appletalk Network Address of the next hop to the destination network. (Both numbers are in decimal.) • **network** - A 16-bit network number between **0** and **66279**. • **node** - An 8-bit node number between **0** and **254**.

floating	Specifies that a dynamic route update for this network can replace the route entry created by this command. The floating argument is optional. If supplied, the route defined via this command may be overwritten by an appletalk routing update. The default is to ignore appletalk route updates for this cable range.
zone	• **zone-name** - The zone-name specifies a zone name to be associated with this destination. When the keyword zone and the zone-name are omitted, the static route is removed.

Sample Output

This example creates a static route to a remote router whose address is 1.5 on the remote network 110-120 in the remote zone “adams”.

`Cajun(config)#` **appletalk static cable-range 110-120 to 1.5 zone adams**

System Supported: P550R

appletalk vlan

Command Mode: Interface

Description

Assigns the Appletalk interface to a VLAN. The **no** form of this command resets the VLAN to the discard VLAN, which is the default value.

Command Syntax

To Enable:	`appletalk vlan {<vlan-id>|name<vlan-name>}`
To Disable:	`[no] appletalk vlan`

Table 3-9. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	The ID of the VLAN Appletalk uses for the interface.
name	**vlan-name** - The name of the VLAN Appletalk uses for the interface.

System Supported: P550R

appletalk zone

Command Mode: Interface

Description

Add an Appletalk zone name to an interface. The **no** form of this command removes a specifically named zone name from an interface, or all zone names, if no zone name is specified. The first zone added is the default zone. This command can be issued, as needed, to assign additional zone names to an interface.

Command Syntax

To Enable:	`appletalk zone [<zone-name>]`
To Disable:	`[no] appletalk zone`

Table 3-10. *Parameters, Keywords, Arguments*

Name	Definition
zone zone-name	The name of the zone you want to add to the interface. The first zone added is the default zone.

System Supported: P550R

clear appletalk arp

Command Mode: Configuration

Description

Delete a single or all entries from the Appletalk AARP and Appletalk Routing tables and clear the Appletalk counters.

Command Syntax

To Enable:	`clear appletalk arp [<network.node>]`

Table 3-11. *Parameters, Keywords, Arguments*

Name	Definition
network.node	• **network** - The AppleTalk network address to delete from the AARP table. This is a 16-bit network number in the range **0** to **65279**. • **node** - An 8-bit node number in the range **0** to **254**. To delete all dynamic entries, omit the argument. Local and static entries cannot be deleted.

System Supported: P550R

clear appletalk route

Command Mode: Configuration

Description

Delete a single or all Appletalk routing entries from the Appletalk Routing Table.

Command Syntax

To Enable:	`clear appletalk route [<network>]`

Table 3-12. *Parameters, Keywords, Arguments*

Name	Definition
network	**network** - The number of the network to which the route provides access. To delete all dynamic entries, omit the argument. Local and static route entries cannot be deleted.

Sample Output

This example deletes all entries from the Appletalk Routing table.

```
Cajun(config)# clear appletalk route
```

System Supported: P550R

clear appletalk traffic

Command Mode: Configuration

Description

Clear the Appletalk counters.

Command Syntax

To Enable:	`clear appletalk traffic`

System Supported: P550R

ping appletalk

Command Mode: Privileged

Description

Send an Appletalk Echo Request to a specific Appletalk node.

Command Syntax

To Enable:	`ping appletalk <network.node>`

Table 3-13. *Parameters, Keywords, Arguments*

Name	Definition
network.node	• **network** - The DDP network address of the Appletalk device. • **node** - The DDP node address of the Appletalk device.

System Supported: P550R

show appletalk access-lists

Command Mode: User

Description

Display currently defined Appletalk access lists.

Command Syntax

To Enable:	show appletalk access-lists

Sample Output

```
Cajun> show appletalk access-list
        Apple Talk Access Lists
        Index Type Operation Name
          606  NBP Deny      Lime
          632  Zone Permit   Zone700
          633  Zone Permit   Zone500
          640  Zone Permit   Area0
          650  Zone Permit   Zone600
          663  Zone Deny
```

System Supported: P550R

show appletalk arp

Command Mode: User

Description

List entries in the Appletalk ARP Table.

Command Syntax

To Enable:	`show appletalk arp [all]`

Table 3-14. *Parameters, Keywords, Arguments*

Name	**Definition**
all	Shows local and broadcast entries, in addition to dynamic entries listed in the Appletalk Arp Table.

Sample Output

```
Cajun> show appletalk arp
        AT AARP Cache Table
        Hardware Address   DDP Address      Type     TTL Interface
        F0:0D:04:31:00:31    555.55        Remote     60 at_if2
        08:00:07:41:C0:8B   8001.1        Dynamic     50 at_if3
```

System Supported: P550R

show appletalk globals

Command Mode: User

Description

Display information about the router's Appletalk status.

Command Syntax

To Enable:	`show appletalk globals`

Sample Output

```
Cajun> show appletalk globals
        AT Global Statistics
Apple Talk Routing is enabled
```

System Supported: P550R

show appletalk interface

Command Mode: User

Description

Display Appletalk-related interface settings for a specific interface, or all interfaces when **interface-name** is omitted.

Command Syntax

To Enable:	`show appletalk interface [<brief>] [interface-name]`

Table 3-15. *Parameters, Keywords, Arguments*

Name	Definition
brief	A keyword indicating that only summary information is to be displayed.
interface-name	The name of the interface to display.

Sample Output

```
Cajun> show appletalk interface
1 is down, and administratively up
  On vlan LaLa, is down
  Starting Cable Range is 0
  Ending Cable Range is 0
  DDP Network Number 0
  DDP Node Number 0
  Metric is 1
  Frame Type is 802.3 SNAP
 Zone Name is 145 (Default)
```

System Supported: P550R

show appletalk nbp

Command Mode: User

Description

Show all Appletalk Name Binding Protocol (NBP) entries.

Command Syntax

To Enable:	`show appletalk nbp`

Sample Output

```
Cajun> show appletalk nbp
        AppleTalk Name Binding Protocol Table
Index  Object : Type@Zone on Interface
  1 PORT_8000.1:Router@Zone8000 on at_if3
  2 PORT_500.1 :Router@Area0 on at_if2
  3 PORT_300.1 :Router@Zone300 on at_if1
```

System Supported: P550R

show appletalk route

Command Mode: User

Description

Display the contents of the Appletalk Routing Table.

Command Syntax

To Enable:	`show appletalk route [<starting-range>]`

Table 3-16. *Parameters, Keywords, Arguments*

Name	Definition
starting-range	If the starting range is supplied, the entry corresponding to this specific AppleTalk network is displayed; otherwise, the entire routing table is displayed.

Sample Output

```
Cajun> show appletalk route 8000
AppleTalk Route Table
Start-End    Next Hop  Metric  State      Owner    Interface
8000-8001      0.0        0    Good       Local      at_if3
```

\System Supported: P550R

show appletalk static cable-range

Command Mode: User

Description

Display the static routes that are configured for Appletalk.

Command Syntax

To Enable:	`show appletalk static cable-range [<starting-range>]`

Table 3-17. *Parameters, Keywords, Arguments*

Name	Definition
starting-range	If the starting range is supplied, the entry corresponding to this specific static route is displayed; otherwise, the entire routing table is displayed.

Sample Output

```
    Cajun# show appletalk static cable-range
AppleTalk StaticRoute Table
Start-End   Next Hop  Metric  State  Owner  Interface
9000-9001    350.50     1     Good  Static    at_if1
```

System Supported: P550R

show appletalk traffic

Command Mode: User

Description

Display Appletalk Protocol Counters and Statistics.

Command Syntax

To Enable:	`show appletalk traffic`

Sample Output

```
Cajun> show appletalk traffic
        AT Traffic Statistics
        Echo Req Tx                    0 Echo Replies Rcv              0
       Echo Req Rcv                  0
        DDP Output Counter             0 DDP Output Short              0
        DDP Output Long               0 DDP Input Counter             0
        DDP Fwd Counter               0 DDP Local Counter             0
        No Client                      0 No Route                      0
        Too Short                      0 Too Long                      0
        Broadcast Error                0 Short PDU in Error            0
        TTL Expired                   0 Checksum Error                0
        AARP Req Rcv                   0 AAPR Replies Rcv              0
         AARP Invalid PDU               0
        AARP Req Tx                    0 AARP Replies Tx               0
        Config Address Error          0 Config Zone Error             0
```

System Supported: P550R

show appletalk zone

Command Mode: User

Description

Display the contents of the Appletalk Zone Information Table (ZIT).

Command Syntax

To Enable:	`show appletalk zone [<zone-name>]`

Table 3-18. *Parameters, Keywords, Arguments*

Name	Definition
zone-name	The name of the zone corresponding to the entry. When omitted, all entries in the table are displayed.

Sample Output

```
Cajun> show appletalk zone Zone1
     AppleTalk Zone Table
     Index Start-End Name
      418     1-10   Zone1
      418   500-600  Zone1
```

System Supported: P550R

4 Buffering

Overview

This chapter describes:

- set buffering fabric-port (age-timer)
- set buffering fabric-port (hipri-alloc)
- set buffering fabric-port (hipri-service-ratio)
- set buffering fabric-port (priority threshold)
- set buffering port (age-timer)
- set buffering port (highpri-allocation)
- set buffering port (hipri-service-ratio)
- set buffering port (pri-threshold)
- show buffering fabric-port
- show buffering port

set buffering fabric-port (age-timer)

Command Mode: Configuration

Description

Set the input or output buffer age timer range for a fabric port. The default age-timer range is 160-320.

Command Syntax

To Enable:	`set buffering fabric-port <fabric-port-spec> [routing] {input|output} age-timer {160-to-320|640-to-1280}`

Table 4-1. *Parameters, Keywords, Arguments*

Name	Definition
fabric-port-spec	Enter a particular fabric port or a range of fabric ports on a module.
routing	Set the routing buffer parameters.
input|output	Input or output buffering.
age-timer	The age-timer ranges are: • 160-to-320 • 640-to-1280

System Output

This example sets the buffer age-timer range for fabric port 4/1 to the 640-1280 range.

```
Cajun(configure)# set buffering fabric-port 4/1 routing input
age-timer 640-to-1280
Buffers for fabric-port 4/1 set.
```

set buffering fabric-port (hipri-alloc)

Command Mode: Configuration

Description

Set the input or output buffer high priority allocation percentage. The default percentage value is 20%.

Note: The switch must be rebooted for changes to this parameter to take effect.

Command Syntax

To Enable:	`set buffering fabric-port <fabric-port-spec> [routing] {input|output} hipri-alloc {10|20|30|40|50}`

Table 4-2. *Parameters, Keywords, Arguments*

Name	Definition
fabric-port-spec	Enter a particular fabric port or a range of fabric ports on a module.
routing	Set the routing buffer parameters.
input|output	Input or output buffering.
hipri-alloc	The high priority allocation percentage ranges are: **10**, **20**, **30**, **40**, or **50**.

System Output

This example sets the buffer high priority allocation percentage for fabric port 4/1 to 30%.

```
Cajun(configure)# set buffering fabric-port 4/2 routing output
hipri-alloc 30
Buffers for fabric-port 4/2 set.
```

set buffering fabric-port (hipri-service-ratio)

Command Mode: Configuration

Description

Set the input or output buffer priority threshold for a fabric port. The default ratio is 999-to-1.

Command Syntax

To Enable:	`set buffering fabric-port <fabric-port-spec> [routing] {input|output} hipri-service-ratio {3-to-1|99-to-1|999-to-1|9999-to-1}`

Table 4-3. *Parameters, Keywords, Arguments*

Name	Definition
fabric-port-spec	Enter a particular fabric port or a range of fabric ports on a module.
routing	Set the routing buffer parameters.
input|output	Input or output buffering.
age-timer	The age-timer ranges are: 160-to-320 640-to-1280
hipri-service-ratio	The priority service ratios are: **3-to-1**, **99-to-1**, **999-to-1**, **9999-to-1**

System Output

This example sets the buffer high priority threshold ratio for fabric port 4/1 to 9999-to-1.

```
Cajun(configure)# set buffering fabric-port 4/1 routing input
hipri-service-ratio 9999-to-1
Buffers for fabric-port 4/1 set.
```

set buffering fabric-port (priority threshold)

Command Mode: Configuration

Description

Set the input or output buffer priority threshold for a fabric port. The default value for the priority threshold is 4.

Command Syntax

To Enable:	`set buffering fabric-port <fabric-port-spec> [routing] {input | output} pri-threshold {1 | 2 | 3 | 4 | 5 | 6 | 7 | all-frames-normal-priority}`

Table 4-4. *Parameters, Keywords, Arguments*

Name	Definition
fabric-port-spec	Enter a particular fabric port or a range of fabric ports on a module.
routing	Set the routing buffer parameters.
input|output	Input or output buffering.
pri-threshold	The priority threshold ranges are: 1, 2, 3, 4, 5, 6 or 7 all-frames-normal-priority

System Output

This example sets the buffer priority threshold ratio for fabric port 4/1 to 5.

```
Cajun(configure)# set buffering fabric-port 4/1 routing output
pri-threshold 5
Buffers for fabric-port 4/1 set.
```

set buffering port (age-timer)

Command Mode: Configuration

Description

Set the output buffer age timer range for a physical port.

Command Syntax

To Enable:	`set buffering port <mod-port-spec> output age-timer {21 | 42 | 84 | 168 | 336 | 672 | 1340}`

Table 4-5. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-spec	Specifies the module and the port.
output	The output buffer.
age-timer	The ranges for the age timer are: **21, 42, 84, 168, 336, 672 or 1340**

set buffering port (highpri-allocation)

Command Mode: Configuration

Description

Set the output buffer high priority allocation percentage for a physical port.

Command Syntax

To Enable:	`set buffering port <mod-port-spec> output hipri-alloc {10 | 20 | 30 | 40 | 50}`

Table 4-6. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-spec	Specifies the module and the port.
output	The output buffer.
hipri-alloc	The high priority allocation percentage ranges are: **10**, **20**, **30**, **40**, or **50**.

set buffering port (hipri-service-ratio)

Command Mode: Configuration

Description

Set the output buffer high priority service ratio for a physical port.

Command Syntax

To Enable:	`set buffering port <mod-port-spec> output hipri-service-ratio {1-to-1|3-to-1|7-to-1|15-to-1| 31-to-1|63-to-1|127-to-1|255-to-1|511-to-1| 1023-to-1|2047-to-1| 4095-to-1|8191-to-1| 16383-to-1|32767-to-1}`

Table 4-7. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-spec	Specifies the module and the port.
output	The output buffer.
hipri-service-ratio	The priority service ratios are: **1-to-1, 3-to-1,| 7-to-1, 15-to-1, 31-to-1, 63-to-1, 127-to-1, 255-to-1, 511-to-1, 1023-to-1, 2047-to-1, 4095-to-1, 8191-to-1, 16383-to-1,** or **32767-to-1.**

set buffering port (pri-threshold)

Command Mode: Configuration

Description

Set the output buffer priority threshold for a physical port.

Command Syntax

To Enable:	`set buffering port <mod-port-spec> output pri-threshold {1|2|3|4|5|6|7| all-frames-normal-priority}`

Table 4-8. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-spec	Specifies the module and the port.
output	The output buffer.
pri-threshold	The priority threshold ranges are: 1, 2, 3, 4, 5, 6 or 7 all-frames-normal-priority

show buffering fabric-port

Command Mode: User

Description

Display the buffering configuration and statistics for a fabric port.

Command Syntax

To View:	`show buffering fabric-port [<fabric-port-spec> [...,<fabric-port-spec>] ]`

Table 4-9. *Parameters, Keywords, Arguments*

Name	Definition
fabric-port-spec	Specifies a fabric port.

System Output

```
Cajun> show buffering fabric-port 4/1-4/10
Fabric Port: 4/1-4/19                  Input Buffer Output Buffer
------------ -----------               ------------ -------------
 Memory(KB):                                    256     496
 Age Timer(ms):                           160-to-320     160-to-320
 HiPri Allocation(%) run:                        20     20
 HiPri Allocation(%) cfg:                        20     20
 Priority Threshold:                              4      4
 High Pri Service Ratio:                    999-to-1     999-to-1
 High Overflow Drops:                             0      0
 Overflow Drops:                                  0      0
 High Stale Drops:                                0      0
 Stale Drops:                                     0      0
 Congestion Drops:                                0      0
------------ -----------               ------------ -------------
.
.
.
```

show buffering port

Command Mode: User

Description

Displays the buffer configuration and statistics for a physical port.

Command Syntax

To View:	`show buffering port [<mod-port-spec> […,<mod-port-spec>]]`

Table 4-10. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-spec	Specifies a particular port or a range of ports on a module.

System Output

```
Cajun> show buffering port 6/19
Physical Port: 6/19                      Input Buffer      Output Buffer
-------------- -------                  ------------       -------------
 Memory(KB):                                        16           116
 Age Timer(ms):                                      -           168
 HiPri Allocation(%) run:                            -            20
 HiPri Allocation(%) cfg:                            -            20
 Priority Threshold:                                 -             4
 High Pri Service Ratio:                             -     1023-to-1
 High Overflow Drops:                                -             0
 Overflow Drops:                                     0             0
 High Stale Drops:                                   -             0
 Stale Drops:                                        0             0
```

5 Console

Overview

This chapter describes:

- set console baud
- set console databits
- set console flowcontrol
- set console initcmd
- set console parity
- set console stopbits
- set console type
- set console type
- show console

set console baud

Command Mode: Configuration

Description

Set console port baud rate. The default value is **9600**.

Command Syntax

To Enable:	`set console baud {`**`300|1200|2400|4800|9600|19200|38400|57600|115200`**`}`

Table 5-1. *Parameters, Keywords, Arguments*

Name	Definition
`300|...|115200`	A required parameter that sets the serial console port to the indicated baud rate. The value indicates the baud rate of interest.

Sample Output

This example sets the console baud rate to 19200.

```
Cajun(configure)# set console baud 19200
```

set console databits

Command Mode: Configuration

Description

Set the databit width for the console serial port. The default value is **8**.

This command is not applicable when the console serial port is configured in PPP mode. The input will not be accepted or stored when the console serial port is configured in PPP mode.

However, if the console serial port is configured as TTY mode and the databits width is configured, the console serial port can be changed to PPP mode and the databit width is saved until TTY mode is restored.

Command Syntax

To Enable:	`set console databits {7|8}`

Table 5-2. *Parameters, Keywords, Arguments*

Name	Definition
7|8	This is a required parameter. The number indicates the number of bits used in the data stream.

Sample Output

This example sets the databit width for the console serial port to 7.

```
Cajun(configure)# set console databits 7
```

set console flowcontrol

Command Mode: Configuration

Description

Sets the flow control type for the serial console port. The default for both TTY and PPP is **xon/xoff**.

Command Syntax

To Enable:	`set console flowcontrol {none|xon/xoff}`

Table 5-3. *Parameters, Keywords, Arguments*

Name	Definition
none|xon/xoff	This is a required parameter. Indicates either the lack of use of flow control, or that the software based xon/xoff flow control is in use. Equivalent to the Cajun CLI command: console flowctrl [none | xon/xoff]

Sample Output

This example sets the console flow control to none.

```
Cajun(configure)# set console flowcontrol none
```

set console initcmd

Command Mode: Configuration

Description

Sets the modem initialization string for console serial port modem control software. The default Modem Configuration String is **AT&D0S0=1**.

This command is not applicable when the console serial port is configured in TTY mode. The input will not be accepted or stored when the serial port is configured in TTY mode.

The init command string is used to configure the attached external modem so that dial-in sessions will be properly accepted by the modem and the connection successfully completed between the Cajun and the remote system. The set console initcmd is only accepted when the console serial port is configured as PPP mode. Please read your modem's reference literature to find the correct AT parameters.

There are few configurations and Lucent-recommended modems that do not require a modem initialization string.

Command Syntax

To Enable:	`set console initcmd [init_cmd_string]`

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Table 5-4. *Parameters, Keywords, Arguments*

Name	Definition
[init_cmd_string]	An optional parameter, however, when the parameter is missing, it means that the modem initialization string is <null>.

Sample Output

```
Cajun(configure)# set console initcmd AT&D0S0=1
```

set console parity

Command Mode: Configuration

Description

Sets the parity for the console serial port. The default setting is **none.**

The concept of parity is not applicable to the console serial port when it is configured in PPP mode. When the console serial port is configured in PPP mode, the parity value cannot be accepted or stored.

However, to save a parity value, the console serial port mode can be changed to TTY mode, the parity value set, and the console serial port mode returned to PPP mode. The parity value is saved until the console serial port is reconfigured as TTY mode.

Command Syntax

To Enable:	set console parity {**none|even|odd**}

Table 5-5. *Parameters, Keywords, Arguments*

Name	Definition
none|even|odd	Required parameter. The value indicates the type of parity to be applied to the console serial port.

Sample Output

This example sets the console parity to even.

```
Cajun(configure)# set console parity even
```

set console stopbits

Command Mode: Configuration

Description

Sets the serial console port stopbits to 1 or 2 bits wide. The default setting is **1**.

Stopbits is not compatible with the serial console port configured in PPP mode. The stopbits parameter cannot be accepted or saved when the serial console port is configured as PPP mode.

However, to configure the serial console port stopbits parameter, the serial console port can be configued as TTY mode and the stopbits parameter set. The serial console port can then be reconfigued as PPP mode. The stopbits parameter is saved until the console serial port is reconfigured as TTY mode.

Command Syntax

To Enable:	`set console stopbits {1|2}`

Table 5-6. *Parameters, Keywords, Arguments*

Name	Definition
1|2	A required parameter that indicates to the serial console port the width of the stopbits. Stopbits is not compatible with the serial console port configured in PPP mode.

Sample Output

This example sets the serial console port stopbits to 2 bits wide

```
Cajun(configure)# set console stopbits 2
```

set console transfer ppp

Command Mode: Configuration

Description

Transfers control of the serial console port and the CLI session to the PPP protocol layer.

This command is only accepted when the console serial port is configured in PPP mode.

When accepted, this command immediately terminates the current CLI session, logs the user out, and switches the I/O on the serial console port from the CLI processing software to the PPP layer. The remote host also needs to simultaneously change its I/O to use PPP software. This command is NOT stored (no back-end), and is only for use when the user has successfully dialed-into the Cajun. This command can only be accepted when the Console Serial Port is configured in PPP mode.

The command cannot be accepted from a telnet session, it can only be accepted over directly connected serial sessions, and most preferably from a post-dial modem terminal session on the remote host.

Command Syntax

To Enable:	`set console transfer ppp`

Sample Output

```
Cajun(configure)# set console transfer ppp
```

set console type

Command Mode: Configuration

Description

Set the console type to the indicated value - either tty or ppp. The default is **tty**.

Command Syntax

To Enable:	`set console type {tty|ppp}`

Table 5-7. *Parameters, Keywords, Arguments*

Name	Definition
tty|ppp	Required parameter. • **tty** - Sets the serial console port mode to use straight ascii interface, in other words, "dumb terminal." • **ppp** - Sets the serial console port mode, upon the conclusion of the current TTY:CLI session, to interact with an external modem, and to permit the use of a PPP connection and PPP packets contained in Async-PPP frames.

Sample Output

This example sets the console type to PPP.

```
Cajun(configure)# set console type ppp
```

show console

Command Mode: User

Description

Show the serial console port configuration.

Command Syntax

To View:	show console

Sample Output

```
Cajun> show console
          Type: TTY
      Baudrate: 9600 bps
  Flow control: XON/XOFF
     Data bits: 8
        Parity: None
     Stop bits: 1
```

6 DVMRP

Overview

This chapter describes:

- ip dvmrp
- ip dvmrp interface type
- ip dvmrp interface-metric
- ip dvmrp graft-retransmit-interval
- ip dvmrp min-route-flash-update
- ip dvmrp neighbor-probe-interval
- ip dvmrp neighbor-timeout
- ip dvmrp prune-message-lifetime
- ip dvmrp prune-retransmit-interval
- ip dvmrp route-limit
- ip dvmrp stats-reset
- ip dvmrp timers basic
- ip dvmrp remote-tunnel-address
- ip multicast prune-source
- ip multicast ttl-threshold
- router dvmrp
- show ip dvmrp
- show ip dvmrp designated forwarders
- show ip dvmrp downstream dependent routers

- ❒ show ip dvmrp forwarding cache
- ❒ show ip dvmrp interface
- ❒ show ip dvmrp interface neighbors
- ❒ show ip dvmrp routes

ip dvmrp

Command Mode: Interface

Description

Enable and configure DVMRP services on an interface. The **no** form of this command disables DVMRP services on an interface.

Command Syntax

To Enable:	`ip dvmrp`
To Disable:	`[no] ip dvmrp`

Sample Output

```
Cajun(config-if:serial0)# ip dvmrp
```

System Supported: P550R

ip dvmrp graft-retransmit-interval

Command Mode: Router-DVMRP

Description

Set the DVMRP graft message retransmit interval. Use the **no** form of this command to return to the default value of **5**.

Command Syntax

To Enable:	`ip dvmrp graft-retransmit-interval <graft-retransmit-int>`
To Disable:	`[no] ip dvmrp graft-retransmit-interval`

Table 6-1. *Parameters, Keywords, Arguments*

Name	Definition
graft-retransmit -interval	The DVMRP graft message retransmit interval. The range is **5-15** seconds.

System Output

This example configures the ip dvmrp graft retransmit interval for six seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp graft-retransmit-interval
?
<graft-retransmit-int> - Graft retransmit interval (5-15) sec
Cajun(configure router:dvmrp)# ip dvmrp graft-retransmit-interval
6
```

System Supported: P550R

ip dvmrp interface-metric

Command Mode: Interface

Description

Configure the DVMRP interface metric. The **no** form of this command restores the default, which is **1**.

Command Syntax

To Enable:	`ip dvmrp interface-metric <intf-metric>`
To Disable:	`[no] ip dvmrp interface-metric`

Table 6-2. *Parameters, Keywords, Arguments*

Name	Definition
interface-metric	DVMRP interface metric or hop count. The range is **1** to **3** hops.

Sample Output

```
Cajun(config-if:serial0)# ip dvmrp interface-metric 2
```

System Supported: P550R

ip dvmrp interface type

Command Mode: Interface

Description

Configure DVMRP interface type. The **no** form of this command restores the interface to the default interface type: **broadcast**.

Command Syntax

To Enable:	`ip dvmrp interface type {broadcast|nonEncapsulatedTunnel|IPIPTunnel}`
To Disable:	`[no] ip dvmrp interface type`

Table 6-3. *Parameters, Keywords, Arguments*

Name	Definition
interface type	DVMRP interface type. The case-sensitive keywords are **broadcast**, **nonEncapsulatedTunnel**, and **IPIPTunnel**.

Sample Output

```
Cajun(config-if:serial0)# ip dvmrp interface type IPIPTunnel
```

System Supported: P550R

ip dvmrp min-route-flash-update

Command Mode: Router-DVMRP

Description

Set the DVMRP minimum route flash update period. Use the **no** form of this command to return to the default value of **5**.

Command Syntax

To Enable:	`ip dvmrp min-route-flash-update <min-update-value>`
To Disable:	`[no] ip dvmrp min-route-flash-update`

Table 6-4. *Parameters, Keywords, Arguments*

Name	Definition
min-update-value	The DVMRP minimum route flash update period, measured in seconds. The range is **5-20** seconds.

System Output

This example configures the ip dvmrp minimum route flash update period for ten seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp min-route-flash-update ?
<min-flash-update> - Minimum flash update interval (5-20) sec
Cajun(configure router:dvmrp)# ip dvmrp min-route-flash-update 10
```

System Supported: P550R

ip dvmrp neighbor-probe-interval

Command Mode: Router-DVMRP

Description

Set the DVMRP neighbor probe interval. Use the **no** form of this command to return to the default value of **10 seconds**.

Command Syntax

To Enable:	`ip dvmrp neighbor-probe-interval <neighbor-probe>`
To Disable:	`[no] ip dvmrp neighbor-probe-interval`

Table 6-5. *Parameters, Keywords, Arguments*

Name	Definition
neighbor-probe	The DVMRP neighbor probe interval, which is measured in seconds. The range is **5-45** seconds.

System Output

This example configures the ip dvmrp neighbor probe interval for eleven seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp neighbor-probe-interval ?
        <neighbor-probe> - Neighbor probe interval (5-45) sec
Cajun(configure router:dvmrp)# ip dvmrp neighbor-probe-interval 11
```

System Supported: P550R

ip dvmrp neighbor-timeout

Command Mode: Router-DVMRP

Description

Set the DVMRP neighbor timeout interval. Use the **no** form of this command to return to the default value of **35 seconds.**

Command Syntax

To Enable:	`ip dvmrp neighbor-timeout <neighbor-timeout>`
To Disable:	`[no] ip dvmrp neighbor-timeout`

Table 6-6. *Parameters, Keywords, Arguments*

Name	Definition
neighbor-timeout	The DVMRP neighbor timeout interval, which is measured in seconds. The range is **1-50** seconds.

System Output

This example configures the ip dvmrp neighbor timeout interval for thirty-six seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp neighbor-timeout ?
        <neighbor-timeout> - Neighbor timeout period (10-50) sec
Cajun(configure router:dvmrp)# ip dvmrp neighbor-timeout 36
```

System Supported: P550R

ip dvmrp prune-message-lifetime

Command Mode: Router-DVMRP

Description

Set the DVMRP prune message lifetime. Use the **no** form of this command to return to the default value of **7200 seconds.**

Command Syntax

To Enable:	`ip dvmrp prune-message-lifetime <prune-lifetime>`
To Disable:	`[no] ip dvmrp prune-message-lifetime`

Table 6-7. *Parameters, Keywords, Arguments*

Name	Definition
prune-lifetime	The DVMRP upstream prune message lifetime. The message lifetime is measured in seconds. The range is **100-7200** seconds.

System Output

This example configures the ip dvmrp prune message lifetime for fifteen hundred seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp prune-message-lifetime ?
<prune-lifetime> - Prune message lifetime (100-7200) sec
Cajun(configure router:dvmrp)# ip dvmrp prune-message-lifetime
1500
```

System Supported: P550R

ip dvmrp prune-retransmit-interval

Command Mode: Router-DVMRP

Description

Set the DVMRP prune message retransmit interval. Use the **no** form of this command to return to the default value of **3 seconds.**

Command Syntax

To Enable:	`ip dvmrp prune-retransmit-interval <prune-retransmit-int>`
To Disable:	`[no] ip dvmrp prune-retransmit-interval`

Table 6-8. *Parameters, Keywords, Arguments*

Name	Definition
prune-retransmit-int	The DVMRP prune message retransmit interval. The interval is measured in seconds. The range is **3-13** seconds.

System Output

This example configures the ip dvmrp prune message retransmit interval for ten seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp prune-retransmit-interval
?
<prune-retransmit-int> - Prune message retransmit interval (3-13)
sec
Cajun(configure router:dvmrp)# ip dvmrp prune-retransmit-interval
10
```

System Supported: P550R

ip dvmrp remote-tunnel-address

Command Mode: Interface

Description

Configure the DVMRP remote-tunnel-address on an interface. The **no** form of this command restores the default, which is: **no defined address**.

Command Syntax

To Enable:	`ip dvmrp remote-tunnel-address <IP-Address>`
To Disable:	`[no] ip dvmrp remote-tunnel-address`

Table 6-9. *Parameters, Keywords, Arguments*

Name	Definition
IP-Address	IP address of the DVMRP remote tunnel.

System Supported: P550R

ip dvmrp route-limit

Command Mode: Router-DVMRP

Description

Set the maximum routes allowed in DVMRP. Use the **no** form of this command to return to the default value of **5000 routes.**

Command Syntax

To Enable:	`ip dvmrp route-limit <route-limit>`
To Disable:	`[no]ip dvmrp route-limit`

Table 6-10. *Parameters, Keywords, Arguments*

Name	Definition
route-limit	The maximum number of routes allowed. The range is between **10-20000** routes.

System Output

This example configures the ip dvmrp route limit to five thousand, five hundred.

```
Cajun(configure router:dvmrp)# ip dvmrp route-limit ?
        <route-limit>
Cajun(configure router:dvmrp)# ip dvmrp route-limit 5500
```

System Supported: P550R

ip dvmrp stats-reset

Command Mode: Router-DVMRP

Description

Reset the DVMRP global statistics.

Command Syntax

To Enable:	`ip dvmrp stats-reset`

System Output

This example shows the command for ip dvmrp stats-reset.

```
Cajun(configure router:dvmrp)# ip dvmrp stats-reset
```

System Supported: P550R

ip dvmrp timers basic

Command Mode: Router-DVMRP

Description

Adjust the DVMRP network timers. Use the **no** form of this command to return to the default values.

Command Syntax

To Enable:	`ip dvmrp timers basic <rte-update> <rte-expire> <rte-holddown>`
To Disable:	`[no] ip dvmrp timers basic`

Table 6-11. *Parameters, Keywords, Arguments*

Name	Definition
rte-update	Configures the DVMRP route reporting interval. The range of frequencies at which updates are sent is **30-90** seconds. The default value is **60** seconds.
rte-expire	Interval of time, in seconds, after which a DVMRP route expires. The interval range is **70-190** seconds. The default value is **140** seconds.
rte-holddown	The amount of time, in seconds, that must pass before the route is removed from the routing table. The range is **140-380** seconds. The default value is **120** seconds.

System Output

This example configures the ip dvmrp timers basic with route update time of 35 seconds, a route expiration time of 75 seconds and route holddown time of 145 seconds.

```
Cajun(configure router:dvmrp)# ip dvmrp timers basic +
<rte-update> <rte-expire> <rte-holddown>
Cajun(configure router:dvmrp)# ip dvmrp timers basic 35 75 145
Cajun(configure router:dvmrp)#
```

System Supported: P550R

ip multicast prune-source

Command Mode: Interface

Description

Configure the host address used in DVMRP prune packets forwarded on this interface. The **no** form of this command restores the default, which is: **host-addr.**

Command Syntax

To Enable:	`ip multicast prune-source {host-addr|network-addr}`
To Disable:	`[no] ip multicast prune-source`

Table 6-12. *Parameters, Keywords, Arguments*

Name	Definition
host-addr	Enter the host address. The full host address goes into the prune packet for the source address.
network-addr	Enter the network address. Only the network portion of the address goes into the packet.

System Supported: P550R

ip multicast ttl-threshold

Command Mode: Interface

Description

Configure the time-to-live for DVMRP packets forwarded on this interface. The **no** form of this command restores the default, which is: **0**.

Command Syntax

To Enable:	`ip multicast ttl-threshold <ttl-thresh>`
To Disable:	`[no] ip multicast ttl-threshold`

Table 6-13. *Parameters, Keywords, Arguments*

Name	Definition
ttl-thresh	Indicates the time to live threshold. The range is 0,1,2: • **0- None** • **1-127** • **2-225** - only outbound broadcasts are accepted.

System Supported: P550R

router dvmrp

Command Mode: Configuration

Description

Enable DVMRP services on an interface. The **no** form of the command disables DVMRP services. The default state is disables.

Command Syntax

To Enable:	`router dvmrp`
To Disable:	`[no] router dvmrp`

Sample Output

This example enables DVMRP routing and assigns a process number of 50.

```
Cajun(configure)# router DVMRP 50
```

System Supported: P550R

show ip dvmrp

Command Mode: User

Description

Display the system-wide configuration information about the DVMRP protocol.

Command Syntax

To View:	show ip dvmrp

Sample Output

```
Cajun> show ip dvmrp

DVMRP state is Enabled
    Neighbor probe interval: 10
    Neighbor timeout interval: 35
    Minimum flash update interval: 5
    Maximum number of routes allowed: 5000
    Route report interval: 60
    Route expire period: 140
    Route holddown period: 120
    Prune message lifetime: 7200
    Prune message retransmit interval: 3
    Graft message retransmit interval: 5
    Probe messages received: 0
    Probe messages transmitted: 0
    Report messages received: 0
    Report messages transmitted: 0
    Prune messages received: 0
    Prune messages transmitted: 0
    Graft messages received: 0
    Graft messages transmitted: 0
    Graft acknowledge messages received: 0
    Graft acknowledge messages transmitted: 0
   Unknown messages received: 0
Valid route report messages received: 0
    Total remote and local route entries: 0
   Total triggered route entries:
```

System Supported: P550R

show ip dvmrp designated forwarders

Command Mode: User

Description

Display all DVMRP designated forwarding routers for the source network address and address mask.

Command Syntax

To View:	`show ip dvmrp designated forwarders <ip-addr> <mask>`

Table 6-14. *Parameters, Keywords, Arguments*

Name	Definition
designated forwarders	Display DVMRP designated forwarder information. • **ip-addr** - the IP address. • **mask** - the mask for the associated IP subnet.

Sample Output

```
 Cajun> show ip dvmrp designated forwarders 44.0.0.0.255.0.0.0
DVMRP designated forwarders for route entry 44.0.0.0/255.0.0.0
      Forwarder interface: vlan9
      Forwarder network address: 9.0.0.100
      Forwarder cost to source network: 3

      Forwarder interface: vlan11
      Forwarder network address: 11.0.0.10
      Forwarder cost to source network: 2
```

System Supported: P550R

show ip dvmrp downstream dependent routers

Command Mode: User

Description

Display all DVMRP downstream dependent neighbor routers for the source network address and address mask.

Command Syntax

To View:	`show ip dvmrp downstream dependent routers <ip-addr> <mask>`

Table 6-15. *Parameters, Keywords, Arguments*

Name	Definition
downstream dependent routers	Display DVMRP downstream dependency information. • **ip-addr** - The IP address. • **mask** - The mask for the associated IP subnet.

Sample Output

```
    Cajun> show ip dvmrp downstream dependent routers
44.0.0.0/255.0.0.0
      DVMRP designated forwarders for route entry 44.0.0.0/255.0.0.0
              Neighbor network adders: 9.0.0.10
              Found on interface: vlan9
              Neighbor supported major/minor version 0/0x0
              Neighbor received probe from this router: Yes
              Neighbor supports prune function: No
              Neighbor supports generation ID function: No
              Neighbor supports MTRACE requests: No
              Neighbor is SNMP manageable: No
```

System Supported: P550R

show ip dvmrp forwarding cache

Command Mode: User

Description

Display the DVMRP forwarding cache.

Command Syntax

To View:	show ip dvmrp forwarding cache

Sample Output

```
Cajun> show ip dvmrp forwarding cache
  DVMRP forwarding cache

          Destination group address: 225.0.0.100
          Source subnetwork: 9.0.0.0
          Source address mask: 255.0.0.0
          Upstream interface: vlan9
          Upstream neighbor (router) address: 9.0.0.100
          Neighbor supports generation ID function: No
          Invalid flows from upstream: 0
          Packets forwarded through cache entry: 1
          Upstream interface is pruned: No
          Downstream interface(s):

                Interface: vlan11
                Interface type: Broadcast
                Interface is pruned: No
                Prune expiration tie in (sec): n/a
                Neighbor supports MTRACE requests: No
                Neighbor is SNMP manageable: No
          Upstream source(s):

                Flow source address: 9.0.0.33
                Payload protocol type: UDP
                Source port number: n/a
                Destination port number: n/a
```

show ip dvmrp interface

Command Mode: User

Description

Display DVMRP interface related information.

Command Syntax

To View:	show ip dvmrp interface

Sample Output

```
Cajun> show ip dvmrp interface
DVMRP circuit IFIndex 8 on interface vlan40 state is up

Interface address and mask: 10.0.4.94/255.255.255.0
Interface type: Broadcast
Prune message flow source address: Use source host address
Current neighbors on interface: 0
Interface metric: 1
Interface scope: 0
Invalid protocol message received: 0
Invalid route messages received: 0
Route messages transmitted: 0
```

System Supported: P550R

show ip dvmrp interface neighbors

Command Mode: User

Description

Display all DVMRP neighbors on all DVMRP configured interfaces.

Command Syntax

To View:	`show ip dvmrp interface neighbors`

Sample Output

```
Cajun> show ip dvmrp interface neighbors

DVMRP neighbor routers on interface vlan9

Neighbor network address: 9.0.0.10
Neighbor supported major/minor version: 0/0x0
Neighbor expiration period in (sec): 122
Neighbor received probe from this router: Yes
Neighbor supports prune function: No
Neighbor supports generation ID function: No
Neighbor supports MTRACE requests: No
Invalid route messages received: 0
Neighbor is SNMP manageable: No
```

System Supported: P550R

show ip dvmrp routes

Command Mode: User

Description

Display all DVMRP routes.

Command Syntax

To View:	`show ip dvmrp routes`

Sample Output

```
Cajun> show ip dvmrp routes
DVMRP route table

Source network and mask: 10.0.4.94/255.255.255.0
Reporting router: 10.0.6.96
Reporting router interface: vlan60
Route metric: 3
Expiration period in (sec): 18
.
.
.
```

System Supported: P550R

7 Huntgroups

Overview

This chapter describes:

- set huntgroup
- set huntgroup (redistribute)
- show huntgroup

set huntgroup

Command Mode: Configuration

Description

Create a huntgroup, modify an existing huntgroup or remove a huntgroup. If no load-sharing value is specified, then a huntgroup is created with load-sharing enabled. Use the **clear huntgroup** form of this command to remove a huntgroup.

Command Syntax

To Enable:	set huntgroup <huntgroup-name> [load-sharing {enable|disable}]
To Disable:	clear huntgroup <huntgroup-name>

Table 7-1. *Parameters, Keywords, Arguments*

Name	Definition
huntgroup-name	The unique string used to identify a huntgroup. If the name is not unique to the huntgroup, then it is assumed that an existing huntgroup is being modified.
load-sharing	The load sharing capability**.** • **enable|disable** - Enables or disables load sharing.

Sample Output

This example creates huntgroup **hg1** and disables load-sharing.

```
Cajun(configure)# set huntgroup hg1 load-sharing disable
HuntGroup “hg1” created
```

set huntgroup (redistribute)

Command Mode: Configuration

Description

Redistribute learned addresses to a huntgroup. The MAC addresses are redistributed among the huntgroup ports.

Command Syntax

To Enable:	set huntgroup <huntgroup-name> redistribute

Table 7-2. *Parameters, Keywords, Arguments*

Name	Definition
huntgroup-name	The unique identifier of a huntgroup.

Sample Output

This example redistributes **hg1.**

```
Cajun(configure)# set huntgroup hg1 redistribute
HuntGroup “hg1” successfully redistributed
```

show huntgroup

Command Mode: User

Description

Display a single, or all huntgroup configurations. If no huntgroup name is specified, then all huntgroups are displayed.

Command Syntax

To View:	show huntgroup [<huntgroup-name>]

Table 7-3. *Parameters, Keywords, Arguments*

Name	Definition
huntgroup-name	The name of the huntgroup to be displayed.

Example

This example shows detailed huntgroup information.

```
Cajun> show huntgroup

                                          Base-   Load-     #
HuntGroup Name                     HGID    Port   Sharing   Ports
-------------------------------   -----   -----   -------   -----
huntgroup1                        1         3/1    Enable   2
   Switch Ports:  3/1,  3/2
huntgroup2                        2         3/3    Enable   2
   Switch Ports:  3/3,  3/4
Cajun(configure)# show huntgroup huntgroup1
                                          Base-   Load-     #
HuntGroup Name                     HGID    Port   Sharing   Ports
-------------------------------   -----   -----   -------   -----
huntgroup1                        1         3/1    Enable   2
   Switch Ports:  3/1,  3/2
                                            Switch Ports:  3/1
```

1

IGMP

Overview

This chapter describes:

- ip igmp
- ip igmp max-groups
- ip igmp process-leaves
- ip igmp querier
- ip igmp querier-timeout
- ip igmp query-interval
- ip igmp query-max-response-time
- ip igmp query-timeout
- ip igmp robustness
- ip igmp version
- mtrace
- router igmp
- show ip igmp groups
- show ip igmp statistics

ip igmp

Command Mode: Interface

Description

Enable the Internet Group Management Protocol (IGMP) on an interface. The **no** form of this command disables IGMP. and restores a default.

Command Syntax

To Enable:	`ip igmp`
To Disable:	`[no] ip igmp`

Sample Output

`Cajun(config-if:serial0)#` **ip igmp**

System Supported: P550R

ip igmp max-groups

Command Mode: Interface

Description

Set the maximum number of IGMP groups on an interface. The **no** form of this command restores the default value, which is **32 groups**.

Command Syntax

To Enable:	`ip igmp max-groups <number>`
To Disable:	`[no] ip igmp max-groups`

Table 1-1. *Parameters, Keywords, Arguments*

Name	Definition
number	Maximum number IGMP groups on the interface. The range is **1-2000**.

Sample Output

`Cajun(config-if:serial0)#` **ip igmp max-groups 50**

System Supported: P550R

ip igmp process-leaves

Command Mode: Interface

Description

Enable the processing of leave requests on an interface. The **no** form of this command disables the processing of leave requests on an interface and returns it to the default state: **enabled**.

Command Syntax

To Enable:	`ip igmp process-leaves`
To Disable:	`[no] ip igmp process-leaves`

System Supported: P550R

ip igmp querier

Command Mode: Interface

Description

Enable group queries on an interface. The **no** form of this command disables group queries on an interface. The default state is **disabled**.

Command Syntax

To Enable:	`ip igmp querier`
To Disable:	`[no] ip igmp querier`

System Supported: P550R

ip igmp querier-timeout

Command Mode: Interface

Description

Set the neighbor group querier timeout in seconds. The **no** form of this command restores the default value of **255 seconds.**

Command Syntax

To Enable:	`ip igmp querier-timeout <nbr-qry>`
To Disable:	`[no] ip igmp querier-timeout`

Table 1-2. *Parameters, Keywords, Arguments*

Name	Definition
nbr-qry	The neighbor group querier timeout in seconds. The range is **60-300** seconds.

System Supported: P550R

ip igmp query-interval

Command Mode: Interface

Description

Configure the frequency at which the router send IGMP host-query messages. The **no** form of this command restores the default value of **125 seconds.**

Command Syntax

To Enable:	`ip igmp query-interval <req-intvl>`
To Disable:	`[no] ip igmp query-interval`

Table 1-3. *Parameters, Keywords, Arguments*

Name	Definition
req-intvl	The number of seconds between host-query messages. The range is **1-65535** seconds.

System Supported: P550R

ip igmp query-max-response-time

Command Mode: Interface

Description

Configure the maximum response time advertised in IGMP queries. The **no** form of this command restores the default value of **10 seconds.**

Command Syntax

To Enable:	`ip igmp query-max-response-time <max-rsp-intvl>`
To Disable:	`[no] ip igmp query-max-response-time`

Table 1-4. *Parameters, Keywords, Arguments*

Name	Definition
max-rsp-intvl	The maximum response time advertised in IGMP queries. The range is **1-25** seconds.

System Supported: P550R

ip igmp query-timeout

Command Mode: Interface

Description

Configure the timeout period before the router takes over as the querier for the interface. Use the **no** form of this command to reset the default value to **255 seconds.**

Command Syntax

To Enable:	`ip igmp query-timeout <nbr-qry>`
To Disable:	`[no] ip igmp query-timeout`

Table 1-5. *Parameters, Keywords, Arguments*

Name	Definition
nbr-query	The neighbor group querier timeout, in seconds. The range is **60-300** seconds.

System Supported: P550R

ip igmp robustness

Command Mode: Interface

Description

Configure the IGMP robustness variable. Use the **no** form of this command to restore the default value of **2.**

Command Syntax

To Enable:	`ip igmp robustness <robustness>`
To Disable:	`[no] ip igmp robustness`

Table 1-6. *Parameters, Keywords, Arguments*

Name	Definition
robustness	IGMP robustness variable. The range is **1-65535**.

System Supported: P550R

ip igmp version

Command Mode: Interface

Description

Configure the version of IGMP that the router uses. Use the **no** form of this command to restore the default value of **2.**

Command Syntax

To Enable:	`ip igmp version {2 | 1}`
To Disable:	`[no] ip igmp version`

Table 1-7. *Parameters, Keywords, Arguments*

Name	Definition
version	The version of IGMP the router uses (**1** or **2**).

System Supported: P550R

mtrace

Command Mode: Privileged

Description

Trace the path from a source to a destination branch for a multicast distribution tree.

The trace follows the multicast path from the destination to the source by passing an mtrace request packet to each hop. The responses are unicast to the querying router by the first hop router to the source. The mtrace command is helpful in isolating multicast routing failures.

Command Syntax

To Enable:	`mtrace <source> [<destination>] [<group>]`

Table 1-8. *Parameters, Keywords, Arguments*

Name	Definition
src	The IP address of the Multicast Capable source. This is a unicast address that represents the beginning of the path to be traced.
destination	The IP address of the unicast destination. If omitted, the trace starts from the system at which the command is typed.
group	The Multicast Address of the group address to be traced. The default address is: **224.2.0.1**. (The group used for MBONE audio.)

Sample Output

This is an example of mtrace output.

```
     Cajun# mtrace 10.0.2.129 10.0.4.177 255.0.1.1
              OutIntf      InIntf        Prot FwdTTL
 -1           10.0.6.96,    10.0.5.96     DVMRP      thresh^32   0 ms
 -2           10.0.5.95,    10.0.1.95     DVMRP    thresh^32   1391000
 ms
     -3       10.0.2.63,    10.0.1.63     DVMRP    thresh^32   2054500
     ms
 Round trip time 0 ms
```

System Supported: P550R

router igmp

Command Mode: Configuration

Description

Globally enable or disable IGMP. The **no** form of the command disables a IGMP. The default state is: **disabled**.

Command Syntax

To Enable:	`router igmp`
To Disable:	`[no] router igmp`

System Supported: P550R

show ip igmp groups

Command Mode: User

Description

Display multicast groups, learned via IGMP, that are directly connected to the router.

Command Syntax

To View:	show ip igmp groups

Sample Output

```
Cajun> show ip igmp groups
   GROUP(s) for intf4, state is up
   Group Address is 225.0.1.1
   Group Reporter Address is 10.0.4.198
   Entry Expiration Period in (sec) is 207
   Group Created on 99-May-05 14:12;04
   .
   .
   .
```

System Supported: P550R

show ip igmp statistics

Command Mode: User

Description

Display IGMP statistics for all interfaces.

Command Syntax

To View:	`show ip igmp statistics`

Sample Output

```
Cajun> show igmp statistics
intf4 is up
   Internet address is 10.0.4.94, subnet mask is 255.255.255.0
   Next Query Request in seconds 113
   Neighbor Querier Timeout in seconds 0
   Number of Group Join Requests Received on this interface 110
   Number of Group Leave Request Received on this interface 0
   Number of Group Reports Received on this interface 4711
   Number of Unknown Messages Received on this interface 0
   Number of Current Groups on this interlace 7
   .
   .
   .
```

1

IP

Overview

This chapter describes:

- arp
- arp timeout
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- ip address
- ip admin-state
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- ip default-gateway
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- ❒ show ip irdp
- ❒ show ip route
- ❒ show ip route summary
- ❒ show ip traffic
- ❒ show tcp connections
- ❒ show tcp statistics
- ❒ show udp statistics

arp

Command Mode: Configuration

Description

Add a permanent entry to the Address Resolution Protocol (ARP) cache. The **no** form of this command removes an entry.

Command Syntax

To Enable:	`arp <ip-address> <hardware-address>`
To Disable:	`[no] arp <ip-address> <hardware-address>`

Table 1-1. *Parameters, Keywords, Arguments*

Name	Definition
ip-address	IP address, in dotted decimal format, of the local data link.
hardware-addr	48-bit address of the local data link.

arp timeout

Command Mode: Configuration

Description

Configure the amount of time that an entry remains in the ARP cache. To restore the default value, use the **no** form of this command.

Command Syntax

To Enable:	`arp timeout <seconds>`
To Disable:	`[no] arp timeout`

Table 1-2. *Parameters, Keywords, Arguments*

Name	Definition
seconds	The amount of time, in seconds, that an entry remains in the arp cache

clear arp-cache

Command Mode: Configuration

Description

Delete all dynamic entries from the ARP cache and the IP route cache.

Command Syntax

To Enable:	`clear arp-cache`

clear ip route

Command Mode: Configuration

Description

Delete routes from the IP routing table.

Command Syntax

To Enable:	`clear ip route {<network> [<mask>] | *}`

Table 1-3. *Parameters, Keywords, Arguments*

Name	Definition
network	The network or subnet address to remove.
mask|*	The route to clear from the table. • ***** - Clears all routes. • **mask** - Subnet address to remove.

ip address

Command Mode: Interface

Description

Assign an IP address to an interface. To remove an IP address or disable IP processing, use the **no** form of this command.

Command Syntax

To Enable:	`ip address <ip-address> <mask>`
To Disable:	`[no] ip address <ip-address> <mask>`

Table 1-4. *Parameters, Keywords, Arguments*

Name	Definition
ip-address	The IP address assigned to the interface.
mask	Mask for the associated IP subnet.

Sample Output

This example assigns IP address 170.180.5.33 to serial interface 1.

```
Cajun (config)# interface serial1
Cajun (config-if:serial1) # ip address 170.180.5.33
```

System Supported: P550R

ip admin-state

Command Mode: Interface

Description

Set the administrative state of an IP interface. The default state is **down**.

Command Syntax

To Enable:	`ip admin-state {up|down}`

Table 1-5. *Parameters, Keywords, Arguments*

Name	Definition
up|down	Administrative state of the interface. The choices are **up** (active) or **down** (inactive).

Sample Output

`Cajun(config-if:serial0)#` **ip admin-state up**

ip bootp-dhcp relay

Command Mode: Configuration

Description

Enable relaying bootp and dhcp service to the bootp/dhcp server. The **no** form of this command disables bootp/dhcp relay. The default state is **disabled**.

Command Syntax

To Enable:	`ip bootp-dhcp relay`
To Disable:	`[no] ip bootp-dhcp relay`

ip bootp-dhcp server

Command Mode: Configuration

Description

Add a bootp/dhcp server definition. The **no** form of this command removes a definition.

Command Syntax

To Enable:	`ip bootp-dhcp server <ip-address>`
To Disable:	`[no] ip bootp-dhcp server <ip-address>`

Table 1-6. *Parameters, Keywords, Arguments*

Name	Definition
`relay`	Relay bootp and dhcp service to the bootp/dhcp server.
ip-address	The IP address necessary to add a bootp/dhcp server to the system.

Sample Output

This example adds a bootp/dhcp server to the system with the specified IP address.

```
Cajun(configure)# ip bootp-dhcp server 122.56.4.7
```

ip default-gateway

Command Mode: Configuration

Description

Define a default gateway (router) when IP routing is disabled. The **no** form of this command removes a default gateway. The default state is **disabled**.

Command Syntax

To Enable:	`ip default-gateway <ip-address>`
To Disable:	`[no] ip default-gateway <ip-address>`

Table 1-7. *Parameters, Keywords, Arguments*

Name	Definition
`ip-address`	IP address of the router.

Sample Output

This example defines the router at address 128.88.84.34 as the default gateway.

```
Cajun(configure)# ip default-gateway 128.88.84.34
```

System Supported: P550R

ip helper-address

Command Mode: Configuration

Description

Enable the forwarding of User Datagram Protocol (UDP) broadcasts. The **no** form of this command disables the forwarding of UDP broadcast packets to an address. The default state is **disabled**.

Command Syntax

To Enable:	`ip helper-address <address> [{tftp|dns|time| netbios-name|netbios-date|bootp-server| bootp-client|tacacs}]`
To Disable:	`[no] ip helper-address <address> [{tftp|dns|time| netbios-name|netbios-date|bootp-server| bootp-client|tacacs}]`

Table 1-8. *Parameters, Keywords, Arguments*

Name	Definition
ip-address	The destination broadcast or host address to which UDP broadcast packets are forwarded. There can be more than one helper address per interface. Options are: • tftp • dns • time • netbios-name • netbios-data • bootp-server • bootp-client • tacacs

Sample Output

`Cajun(config-if:serial0)#` **ip helper-address 123.65.34.9**

ip mac-format

Command Mode: Configuration

Description

Set the MAC format of the IP interfaces. The **no** form of this command restores the default **ethv2.**

Command Syntax

To Enable:	`ip mac-format {ethv2|snap}`
To Disable:	`[no] ip mac-format {ethv2|snap}`

Table 1-9. *Parameters, Keywords, Arguments*

Name	Definition
ethv2|snap	Set the MAC format of the IP interface to either **ethv2**, which is the default, or to **snap** (Subnetwork Access Protocol).

Sample Output

This example sets the MAC format of the IP interfaces, on serial interface 0, to the Subnetwork Access Protocol (**snap**).

`Cajun(config-if:serial0)#` **ip mac-format snap**

ip max-arp-entries

Command Mode: Configuration

Description

Specify the maximum number of ARP cache entries allowed in ARP cache.

Command Syntax

To Enable:	`ip max-arp-entries <value>`

Table 1-10. *Parameters, Keywords, Arguments*

Name	Definition
value	The space available for the IP address table. When you increase the number of entries, it may cause the table to be relearned more frequently, making address space.

ip max-route-entries

Command Mode: Configuration

Description

Specify the maximum number of routes that can be added to the routing table. These routes refer to IP Unicast entries only.

Command Syntax

To Enable:	`ip max-route-entries <value>`

Table 1-11. *Parameters, Keywords, Arguments*

Name	Definition
value	The space available for the IP address table. When you increase the number of entries, it may cause the table to be relearned more frequently, making address space.

ip multicast-routing

Command Mode: Configuration

Purpose

Globally enable IP multicast routing. IP multicast routing must be enabled to configure IGMP or DVMRP. The **no** form of this command disables IP multicast routing. The default state is **disabled**.

Command Syntax

To Enable:	`ip multicast-routing`
To Disable:	`[no] ip multicast-routing`

Sample Output

This example enables IP multicast routing.

```
Cajun(configure)# ip multicast-routing
```

ip netbios-rebroadcast

Command Mode: Configuration

Description

Enable NETBIOS rebroadcasts on an interface. The **no** form of this command disables NETBIOS rebroadcasts on an interface.

Command Syntax

To Enable:	`ip netbios-rebroadcast [{both|inbound|outbound| disable} ]`
To Disable:	`[no] ip netbios-rebroadcast`

Table 1-12. *Parameters, Keywords, Arguments*

Name	Definition
`both|inbound| outbound|disable`	Indicates how broadcasts are accepted. • **both** - inbound and outbound broadcasts are accepted. • **inbound** - only inbound broadcasts are accepted. • **outbound** - only outbound broadcasts are accepted. • **disable** - no broadcasts are accepted.

Sample Output

`Cajun(config-if:serial0)#` **ip netbios-rebroadcast inbound**

ip netmask-format

Command Mode: Configuration

Description

Specify the format of netmasks in the **show** command output. The **no** form of this command restores the default, which is a **dotted decimal format**.

Command Syntax

To Enable:	`ip netmask-format {bitcount|decimal|hexadecimal}`
To Disable:	`[no] ip netmask-format {bitcount|decimal|hexadecimal}`

Table 1-13. *Parameters, Keywords, Arguments*

Name	Definition
bitcount|decimal| hexadecimal	The keywords are: • **bitcount** - Addresses are followed by a slash and the total number of bits in the netmask. For example, 131.108.11.0/24 indicates the netmask is 24 bits. • **decimal** - The network masks are in dotted decimal notation. For example, 255.255.255.0. • **hexadecimal** - The network masks are in hexadecimal format as indicated by the leading 0X. For example, 0XFFFFFF00.

Sample Output

This example displays netmasks in bitcount format.

```
Cajun(configure)# ip netmask-format bitcount
```

ip proxy-arp

Command Mode: Interface

Description

Enable proxy ARP on an interface. The **no** form of this command disables proxy ARP on an interface. The default state is **enabled**.

Command Syntax

To Enable:	`ip proxy-arp`
To Disable:	`[no] ip proxy-arp`

Sample Output

This example disables proxy ARP on serial interface 0.

`Cajun(config-if:serial0)#` **no ip proxy arp**

ip proxy-arp-default-route

Command Mode: Configuration

Description

Enable the default route as the route for proxy ARPs. The **no** form of this command to restores the default, which is **disabled**.

Command Syntax

To Enable:	`ip proxy-arp-default-route`
To Disable:	`[no] ip proxy-arp-default-route`

Sample Output

This example enables the default route for proxy ARPs.

`Cajun(configure)#` **ip proxy-arp-default-route**

ip proxy-arp-limit

Command Mode: Configuration

Description

Enable proxy ARP. When enabled, the router only responds to ARP requests when the source and target IP address are in the same IP network and different IP subnets.

When disabled, the router only responds to ARP requests when the source and target IP address are in different networks. The **no** form of this command restores the default, which is **disabled**.

Command Syntax

To Enable:	`ip proxy-arp-limit`
To Disable:	`[no] ip proxy-arp-limit`

Sample Output

This example enables proxy ARP.

`Cajun(configure)#` **ip proxy-arp-limit**

ip redirects

Command Mode: Interface

Description

Enable the sending of redirect messages when the router is forced to resend a packet through the same interface on which it was received. The **no** form of this command disables the sending of redirect messages. The default state is **enabled**, unless LRRP is configured.

Command Syntax

To Enable:	`ip redirects`
To Disable:	`[no] ip redirects`

Sample Output

`Cajun(config-if:serial0)#` **ip redirects**

ip reset-stats

Command Mode: Configuration

Description

Reset the IP statistics.

Command Syntax

To Enable:	`ip reset-stats`

Sample Output

This example resets the IP statistics.

`Cajun(configure)#` **ip reset-stats**

ip route

Command Mode: Configuration

Description

Establish a static route. The **no** form of this command removes a static route. The default static routing type is **Low**.

Command Syntax

To Enable:	`ip route <ip-addr> <mask> <next-hop> <cost> {[high|low]}`
To Disable:	`[no] ip route <ip-addr> <mask> <next-hop> <cost> {[high|low]}`

Table 1-14. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	IP address of the static route.
mask	Mask of the IP address.
next-hop	Displays the next hop address in the network.
cost	The path cost. • **high | low** - A high or low routing preference.

ip route-preference

Command Mode: Configuration

Description

Assign preference values to routes. The IP routing table uses these values to determine the best routes. The **no** form of this command restores the default.

Command Syntax

To Enable:	`ip route-preference {local|rip|ospf-intra| ospf-inter|ospf-extra|static-hp|static-lp} <value>`
To Disable:	`[no] ip route-preference {local|rip|ospf-intra| ospf-inter|ospf-extra|static-hp|static-lp} <value>`

Table 1-15. *Parameters, Keywords, Arguments*

Name	Definition
local|rip|ospf-intra| ospf-inter|ospf-extra| static-hp|static-lp	The route keywords are: • **local** - locally connected routes. • **rip** - route learned via the RIP protocol. • **ospf-intra** - OSPF intra-area routes. • **ospf-extra** - OSPF external routes • **static-hp** - high preference static routes. • **static-lp** - low preference static routes.
value	Preference value assigned to the specified route. The higher the value, the more preferable the route.

ip routing

Command Mode: Configuration

Description

Enable IP routing. The **no** form of this command disables IP routing. The default state is **enabled**.

Command Syntax

To Enable:	`ip routing`
To Disable:	`[no] ip routing`

Sample Output

This example enables IP routing.

`Cajun(configure)#` **ip routing**

ip routing-mode

Command Mode: Interface

Description

Set the IP routing mode on an interface. The **no** form of this command restores the default setting to **RT_MGMT**.

Command Syntax

To Enable:	`ip routing-mode {RT_MGMT|RT_ONLY|MGMT_ONLY}`
To Disable:	`[no] ip routing-mode`

Table 1-16. *Parameters, Keywords, Arguments*

Name	Definition
`RT_MGMT|RT_ONLY|MGMT_ONLY`	• RT_MGMT (default) -- Enables IP forwarding and local Packet consumption. • RT_ONLY -- Enables IP forwarding but local packet consumption is disabled. • MGMT_ONLY -- Enables Local packet consumption but IP forwarding is disabled.

Sample Output

This example enables local packet consumption and disables IP forwarding on serial interface 1.

`Cajun(config-if:serial1)#` **ip routing-mode MGMT_ONLY**

ip source-route

Command Mode: Configuration

Description

Allow the router to handle IP datagrams with source-routing header options. The **no** form of this command discards any IP datagrams containing a source-route option. The default state is **enabled**.

Command Syntax

To Enable:	`ip source-route`
To Disable:	`[no] ip source-route`

Sample Output

This example specifies that the router handles IP datagrams with source-routing header options.

```
Cajun(configure)# no ip source-route
```

ip telnet inactivity-period

Command Mode: Configuration

Description

Set the IP telnet inactivity period. Specify how many seconds a telnet session remains open with no activity. The default is **900 seconds,** or **15 minutes**. Setting it to 0 disables the timer so that sessions never close because of inactivity.

Command Syntax

To Enable:	`ip telnet inactivity-period <timeout>`

Table 1-17. *Parameters, Keywords, Arguments*

Name	Definition
timeout	The telnet inactivity timeout period, measured in seconds.

Sample Output

This example sets the ip telnet inactivity timeout period to 800 seconds.

`Cajun(configure)#` **ip telnet inactivity-period 800**

ip vlan

Command Mode: Interface

Description

Specify the VLAN on which an IP interface resides. The **no** form of this command restores the IP interface to the Discard vlan.

Command Syntax

To Enable:	`ip vlan {<vlan-id>|name <vlan-name>| Ethernet-Console|Serial-Console}`
To Disable:	`[no] ip vlan`

Table 1-18. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	ID of the VLAN.
vlan-name	Name of the VLAN.

Sample Output

`Cajun(config-if:serial0)#` **ip vlan 100**

System Supported: P550R

ip irdp

Command Mode: Interface

Description

Enable and configure the ICMP Router Discovery Protocol (IRDP) on an interface. The **no** form of this command restores a default, which is **enabled**.

Command Syntax

To Enable:	`ip irdp`
To Disable:	`[no] ip irdp`

ip irdp holdtime

Command Mode: Interface

Description

Set the router discovery lifetime. The **no** form of this command restores the default, which is **three times the maxadvertinterval value**.

Command Syntax

To Enable:	`ip irdp holdtime <seconds>`
To Disable:	`[no] ip irdp holdtime`

Table 1-19. *Parameters, Keywords, Arguments*

Name	Definition
seconds	The length of time, in seconds, that advertisements are held valid. The holdtime value must be greater than the maxadvertinterval value and cannot be greater than **9000** seconds. The range is **5 - 9000** seconds.

Sample Output

`Cajun(config-if:serial0)#` **ip irdp address 12.45.34.7 holdtime 2000**

ip irdp maxadvertinterval

Command Mode: Interface

Description

Set the router discovery maximum time interval between IRDP messages. The **no** form of this command restores the default value of **600 seconds**.

Command Syntax

To Enable:	`ip irdp maxadvertinterval <seconds>`
To Disable:	`[no] ip irdp maxadvertinterval`

Table 1-20. *Parameters, Keywords, Arguments*

Name	Definition
seconds	Maximum interval in seconds between advertisements. The range is **4 - 1800** seconds.

ip irdp minadvertinterval

Command Mode: Interface

Description

Set the router discovery minimum time interval between IRDP messages. The **no** form of this command restores the default value of **0.75 times the maxadvertinterval**.

Command Syntax

To Enable:	`ip irdp minadvertinterval <seconds>`
To Disable:	`[no] ip irdp minadvertinterval`

Table 1-21. *Parameters, Keywords, Arguments*

Name	Definition
seconds	The minimum interval, in seconds, between advertisements. The range is **3 - 1799** seconds. Changing the maxadvertinterval value defaults to the minadvertinterval value to three-quarters of the new value.

ip irdp multicast

Command Mode: Interface

Description

Set the router discovery addressing mode, forcing this interface to use the multicast address (224.0.0.1) instead of IP broadcasts. The **no** form of this command sets the use of a broadcast address.

Command Syntax

To Enable:	`ip irdp multicast`
To Disable:	`[no] ip irdp multicast`

ip irdp preference

Command Mode: Interface

Description

Set the router preference in the IRDP message. The **no** form of this command restores the default value of **0.**

Command Syntax

To Enable:	`ip irdp preference <number>`
To Disable:	`[no] ip irdp preference`

Table 1-22. *Parameters, Keywords, Arguments*

Name	Definition
number	The range is **-231** to **231** and the default is **0**. A higher value increases the router's preference level. A particular router can be modified so that it is the preferred router to which others home.

ping

Command Mode: Privileged

Description

Check host reachability and network connectivity.

Command Syntax

To Enable:	`ping <ip-addr> [<count> [<delay> [<size> [<timeout> [{quiet}]]]]]`

Table 1-23. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	IP address of the target system.
count	The number of ping attempts you want to perform with this operation. The default is 5. • **delay** - The number of milliseconds the switch waits between generating pings. the default is 1000. • **size** - The size of the packet sent during a ping operation. • **timeout** - The number of seconds to wait for an ICMP reply. The default is 2. • **quiet** - Include this keyword to disable the display of the ping operation in progress.

Sample Output

```
Cajun# ping 192.168.0.115
#1: Ping ok, RTT 0.000 seconds
#2: Ping ok, RTT 0.000 seconds
#3: Ping ok, RTT 0.000 seconds
#4: Ping ok, RTT 0.000 seconds
#5: Ping ok, RTT 0.000 seconds
Ping of 192.168.0.115 completed: 5 OK, 0 Failed
```

show ip arp

Command Mode: User

Description

Display the Address Resolution Protocol (ARP) cache.

Command Syntax

To View:	`show ip arp [static]`

Table 1-24. *Parameters, Keywords, Arguments*

Name	Definition
static	Display static ip ARP information.

Sample Output

```
Cajun> show ip arp static
        IP ARP Table
        Mac Addr                IP Address
        02:e0:3b:e0:90:bf        192.168.0.1
        f0:0d:04:29:17:ff        192.168.0.115
        00:a0:c9:70:c4:82        192.168.0.139
        ff:ff:ff:ff:ff:ff        192.168.0.255
```

show ip interface

Command Mode: User

Description

Display multicast-related information for each IGMP interface.

Command Syntax

To View:	`show ip interface [<interface-name>]`

Table 1-25. *Parameters, Keywords, Arguments*

Name	Definition
interface-name	The name of the interface whose information you want to display.

Sample Output

```
Cajun> show ip interface
192.168.0.115 is up, and administratively up
  On Ethernet Console, is up
  Internet address is 192.168.0.115, subnet mask is 255.255.255.0
  MTU is 1500 bytes
  Proxy ARP is enabled
  ICMP redirects are not sent
```

show ip irdp

Command Mode: User

Description

Display Internet Router Discovery Protocol (IRDP) configuration.

Command Syntax

To View:	`show ip irdp [<interface-name>]`

Table 1-26. *Parameters, Keywords, Arguments*

Name	Definition
interface-name	Interface-name is an optional argument. If specified, it requests ICMP Router Discovery Protocol information only for the specified interface.

Sample Output

```
Cajun> show ip irdp
Router# show ip irdp
Console has ICMP Router Discovery Protocol enabled.
  Network address is 192.168.60.53, subnet mask is 255.255.255.0
  Advertisements sent using Multicast.
  Advertisements occur between every 450 and 600 seconds
  Advertisements valid for 1800 seconds.
  Preference set to 0.
ip_if1 has ICMP Router Discovery Protocol disabled.
  Network address is 10.1.1.10, subnet mask is 255.255.255.0
  Advertisements sent using Multicast.
  Advertisements occur between every 450 and 600 seconds
  Advertisements valid for 1800 seconds.
  Preference set to 0
```

System Supported: P550R

show ip route

Command Mode: User

Description

Display information about the IP unicast routing table.

Command Syntax

To View:	`show ip route [static]`

Table 1-27. *Parameters, Keywords, Arguments*

Name	Definition
static	Display IP Static route information.

Sample Output

```
Cajun> show ip route static
0.0.0.0 0.0.0.0    via    192.168.0.1 cost=1 pref=low
```

show ip route summary

Command Mode: User

Description

Display the current state of the routing table.

Command Syntax

To View:	`show ip route summary`

Sample Output

```
Cajun> show ip route summary
IP Route Summary:
        Current number of routes: 2
        Peak number of routes   : 2
        Total routes added      : 2
        Total routes deleted    : 0
        RIP route changes       : 0
        RIP queries             : 0
```

System Supported: P550R

show ip traffic

Command Mode: User

Description

Display IP traffic statistics information.

Command Syntax

To View:	`show ip traffic`

Sample Output

```
Cajun> show ip traffic
IP statistics:
  Rcvd:  349 total, 250 local destination
        0 packet header errors,         0 unknown protocol
         0 with address errors,         0 discarded
        a gateway
 Frags:  0 reassembled, 0 couldn't reassemble
       0 fragmented, 0 couldn't fragment
  Sent:  90 generated, 0 forwarded
         0 no route,         0 discarded

ICMP statistics:
  Rcvd:  45 total, 0 ICMP errors, 0 unreachables, 0 time exceeded
         0 parameter, 0 quench, 0 redirects, 45 echo, 0 echo reply
         0 timestamp request, 0 timestamp reply
          0 mask requests, 0 mask replies
  Sent:  64 total, 0 ICMP errors, 0 unreachables, 0 time exceeded
         0 parameter, 0 quench, 0 redirects, 0 echo, 45 echo reply
         0 timestamp request, 0 timestamp reply
          0 mask requests, 19 mask replies
.
.
.
```

show tcp connections

Command Mode: User

Description

Display TCP connection information.

Command Syntax

To View:	show tcp connections

Sample Output

```
Cajun> show tcp connections
lhost:lport          fhost:fport          window(l/r)  tstate
outq(s/u)
192.156.77.23:23     199.92.235.111:2623  1024/536     Established
0/0
192.156.77.23:23     199.92.235.111:2622  3896/8049    TIMEWAIT  0/0
0.0.0.0:80          0.0.0.0:0           1024/536     LISTEN        0/0
0.0.0.0:23          0.0.0.0:0           4096/536     LISTEN        0/0
```

System Supported: P550R

show tcp statistics

Command Mode: User

Description

Display TCP statistics.

Command Syntax

To View:	`show tcp statistics`

Sample Output

```
Cajun> show tcp statistics
TCP statistics
            Retransmit timeout algorithm        : vanj
            Retransmit timeout minimum          : 0 (millisecs)
            Retransmit timeout maximum          : 240000 (millisecs)
            Maximum num of connections          : 150
            Number of Active opens              : 0
            Number of Passive opens             : 0
            Attempted connection fails          : 0
            Estab. connection resets            : 0
            Established connections             : 0
            Segments received                   : 16
            Segments sent                       : 0
            Segments retransmitted              : 0
```

System Supported: P550R

show udp statistics

Command Mode: User

Description

Display UDP connection statistics.

Command Syntax

To View:	`show udp statistics`

Sample Output

```
Cajun> show udp statistics
UDP statistics
              Total datagrams received          : 31
              Datagrams without ports           : 0
              Datagrams in error                : 0
              Total Datagrams sent              : 0
```

2

IP-RIP

Overview

This chapter describes:

- default-metric
- ip rip authentication key
- ip rip authentication mode
- ip rip default-route-mode
- ip rip poison-reverse
- ip rip receive version
- ip rip send version
- ip rip send-receive-mode
- network
- output-delay
- router rip
- timers basic
- triggered updates
- show ip rip statistics

default-metric

Command Mode: Interface

Description

Set the default RIP route metric. The **no** form of this command restores the default. The default state is: built-in, automatic metric translations, as appropriate for each routing protocol.

Command Syntax

To Enable:	`default-metric <number>`
To Disable:	`[no] default-metric`

Table 2-1. *Parameters, Keywords, Arguments*

Name	Definition
number	The default RIP route metric value. The range is **0** to **15**.

Sample Output

This example sets the default RIP metric value to **10**.

```
Cajun(config-if:serial0)# default-metric 10
```

ip rip authentication key

Command Mode: Interface

Description

Set the authentication string used on the interface. The **no** form of this command clears the password.

Command Syntax

To Enable:	`ip rip authentication key <password>`
To Disable:	`[no] ip rip authentication key`

Table 2-2. *Parameters, Keywords, Arguments*

Name	Definition
`password`	`The authentication string for the interface. Up to 16 characters are allowed.`

ip rip authentication mode

Command Mode: Interface

Description

Specify the type of authentication used in RIP Version 2 packets. Use the **no** form of this command to restore the default value of **none**.

Command Syntax

To Enable:	`ip rip authentication mode {simple|md5|none}`
To Disable:	`[no] ip rip authentication mode`

Table 2-3. *Parameters, Keywords, Arguments*

Name	Definition
`simple|md5|none`	The authentication type used in RIP Version 2 packets. Types include: • **simple** - clear text authentication. • **md5** - keyed MD5 authentication. • **None** - No authentication.

Sample Output

`Cajun(config-if:serial0)#` **ip rip authentication mode md5**

System Supported: P550R

ip rip default-route-mode

Command Mode: Interface

Description

Set the RIP default route characteristics. The **no** form of this command disables the default route characteristics.

Command Syntax

To Enable:	`ip rip default-route-mode {talk-only|listen-only| talk-listen|disable}`
To Disable:	`[no] ip rip default-route-mode {talk-only| listen-only|talk-listen|disable}`

Table 2-4. *Parameters, Keywords, Arguments*

Name	Definition
`talk-only| listen-only| talk-listen|disable`	The RIP default route characteristics. • **talk-only** - The default route is advertised in RIP updates but ignored on incoming neighbor updates. • **listen-only** - The default route is suppressed from RIP updates but accepted on incoming neighbor updates. • **talk-listen** - The default route is advertised and accepted. • **disable** - The default route is not advertised or accepted.

Sample Output

`Cajun(config-if:serial0)#` **ip rip default-route-mode talk-listen**

System Supported: P550R

ip rip poison-reverse

Command Mode: Interface

Description

Enable split-horizon with poison reverse on an interface. The **no** form of this command disables the poison-reverse mechanism. The default state is **disabled**.

The split-horizon technique prevents information about routes from exiting the router interface through which the information was received. This prevents routing loops.

Poison reverse updates explicitly indicate that a network or subnet is unreachable rather than implying they are not reachable. Poison reverse updates are sent to defeat large routing loops.

Command Syntax

To Enable:	`ip rip poison-reverse`
To Disable:	`[no] ip rip poison-reverse`

Sample Output

`Cajun(config-if:serial0)#` **ip rip poison-reverse**

ip rip receive version

Command Mode: Interface

Description

Specify a RIP version to receive on an interface basis. Use the **no** form of this command to follow the global version rules. The Global default is RIP **Version 1**.

Command Syntax

To Enable:	`ip rip receive version [1] [2]`
To Disable:	`[no] ip rip receive version`

Table 2-5. *Parameters, Keywords, Arguments*

Name	Definition
`[1] [2]`	The version of the RIP packets received on an interface. • **1** - accept RIP Version 1 packets. • **2** - accept RIP Version 2 packets.

Sample Output

`Cajun(config-if:serial0)#` **ip rip receive version 2**

System Supported: P550R

ip rip send version

Command Mode: Interface

Description

Specify a RIP version to send on an interface basis. Use the **no** form of this command to follow the global version rules. The Global default is RIP **Version 1**.

Command Syntax

To Enable:	`ip rip send version [1] [2]`
To Disable:	`[no] ip rip send version`

Table 2-6. *Parameters, Keywords, Arguments*

Name	Definition
`send version`	The version of the RIP packets sent out the interface. • **1** - send RIP Version 1 packets. • **2** - send RIP Version 2 packets.

Sample Output

`Cajun(config-if:serial0)#` **ip rip send version 2**

System Supported: P550R

ip rip send-receive-mode

Command Mode: Interface

Description

Set the RIP Send and Receive mode on an interface. The default state is **talk-listen**.

Command Syntax

To Enable:	`ip rip send-receive-mode [talk-only|listen-only| talk-listen]`

Table 2-7. *Parameters, Keywords, Arguments*

Name	Definition
`talk-only|` `listen-only|` `talk-listen`	Set the RIP Send and Receive mode on an interface. • **talk-only** - Set RIP to only transmit updates on the interface and not receive them. • **listen-only** - set RIP to only receive updates on the interface and not transmit them. • **talk-listen** - set RIP to transmit and receive updates on the interface.

Sample Output

`Cajun(config-if:serial0)#` **ip rip send-receive-mode listen-only**

neighbor

Command Mode: Router-RIP

Description

Define the neighbors with which to exchange routing information. The **no** form of this command removes a neighboring router entry. The default state is: **no neighboring routers are defined**.

CAUTION: Adding one or more RIP neighbors ensures that the router only accepts information from these neighbors. Consequently, all other information is filtered. Do not create RIP neighbor(s) if you do not want to filter RIP information from the network.

Command Syntax

To Enable:	`neighbor <ip-address>`
To Disable:	`[no] neighbor <ip-address>`

Table 2-8. *Parameters, Keywords, Arguments*

Name	Definition
ip-address	IP address of a peer router with which routing information will be exchanged.

Sample Output

This example specifies the peer router at 123.1.1.1 is the neighboring router with which to exchange routing information.

`Cajun(configure router:rip)#` **neighbor 123.1.1.1**

network

Command Mode: Router-RIP

Description

Specify a list of networks for the Routing Information Protocol (RIP) routing process. The **no** form of this command removes an entry.

Command Syntax

To Enable:	`network <ip-addr> [<subnet-mask>]`
To Disable:	`[no] network <ip-addr> [<subnet-mask>]`

Table 2-9. *Parameters, Keywords, Arguments*

Name	Definition
ip-address	IP address of the network of directly connected networks. **subnet-mask** - mask of the network(s) on which RIP should run.

Sample Output

This example specifies that RIP is the routing protocol used on all interfaces connected to network 111.0.4.5 and that RIP runs on subnet 255.0.0.0.

```
Cajun(configure router:rip)# network 111.0.4.5 255.0.0.0
```

output-delay

Command Mode: IP-RIP

Description

Specify the interpacket delay for RIP updates. The **no** form of this command removes a delay definition. The default delay time is **0 milliseconds** (no delay).

Command Syntax

To Enable:	`output-delay <delay>`
To Disable:	`[no] output-delay`

Table 2-10. *Parameters, Keywords, Arguments*

Name	Definition
delay	The delay between packets in a multiple-packet RIP update. The range is **8** to **50** milliseconds.

Sample Output

This example sets the interpacket delay for RIP updates to 10 seconds.

`Cajun(configure router:rip)#` **output-delay 10**

router rip

Command Mode: Configuration

Description

Configure the Routing Information Protocol (RIP). The **no** form of the command disables RIP. The default state is **disabled**.

Command Syntax

To Enable:	`router rip`
To Disable:	`[no] router rip`

System Supported: P550R

timers basic

Command Mode: Router-RIP

Description

Adjust RIP network timers. The **no** form of this command restores the default timers. The default for the update timer is **30 seconds**, and the invalid time default is **120 seconds**.

Command Syntax

To Enable:	`timers basic <update> <invalid>`
To Disable:	`[no] timers basic`

Table 2-11. *Parameters, Keywords, Arguments*

Name	Definition
update	Rate, in seconds, updates are sent. This is the fundamental timing parameter of the routing protocol.
invalid	Interval of time, in seconds, after which a route is declared invalid. This value should be at least three times the value of *update*. A route becomes invalid when there is an absence of updates that refresh the route. The route then enters holddown. The route is marked inaccessible and advertised as unreachable. However, the route is still used for forwarding packets.

Sample Output

This example sets the update value to 60 seconds.

```
Cajun(configure router:rip)# timers basic 60
```

triggered updates

Command Mode: Router-RIP

Description

Globally enable the use of RIP triggered updates. The **no** form of this command globally disables RIP triggered updates. The default state is **disabled**.

Command Syntax

To Enable:	`triggered updates`
To Disable:	`[no] triggered updates`

Sample Output

This example globally enables the triggered updates function.

`Cajun(configure router:rip)#` **triggered updates**

show ip rip statistics

Command Mode: User

Description

Display RIP interface statistics.

Command Syntax

To View:	`show ip rip statistics`

Sample Output

```
Cajun> show ip rip statistics
intf3  10.0.3.45
   State is                DOWN
   Triggered Updates Sent  0
   Un-triggered Updates Sent0
   Updates Received        0
   Bad Packets Received    0
   Bad Routes Received     0
```

System Supported: P550R

3

IPX

Overview

This chapter describes:

- clear ipx route
- clear ipx service
- ipx advertise-default-route-only
- ipx default-route
- ipx delay
- ipx down
- ipx gns-reply-disable
- ipx gns-response-delay
- ipx network
- ipx output-rip-delay
- ipx output-sap-delay
- ipx rip
- ipx rip-filter
- ipx rip-max-packetsize
- ipx rip-multiplier
- ipx route
- ipx router
- ipx routing
- ipx sap

- ipx sap-max-packetsize
- ipx sap-multiplier
- ipx sap-name-filter
- ipx sap-network-filter
- ipx send-receive-mode
- ipx send-triggered-updates
- ipx service
- ipx type-20-propagation
- ipx update interval
- ipx vlan
- show ipx cache
- show ipx interface
- show ipx route
- show ipx services
- show ipx traffic

clear ipx route

Command Mode: Configuration

Description

Delete routes from the IPX routing table. This command only deletes routes learned via the RIP routing protocol. Static and local routes cannot be deleted using this command.

Command Syntax

To Enable:	`clear ipx route {<network> default|*}`

Table 3-1. *Parameters, Keywords, Arguments*

Name	Definition
{network|default|*}	Delete routes learned via the RIP routing protocol from the IPX routing table. • **network** - The number of the network whose routing table entry you want to display. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can enter AA. • **default** - deletes the default route from the routing table. • ***** - Deletes all routes in the routing table.

Sample Output

This example clears the entry for network 5 from the IPX routing table.

```
Cajun(configure)# clear ip route 5
```

System Supported: P550R

clear ipx service

Command Mode: Configuration

Description

Delete services from the IPX service table. This command only deletes services learned via the SAP protocol. Static services cannot be deleted using this command.

Command Syntax

To Enable:	`clear ipx service {<service-type> <service-name>|*}`

Table 3-2. *Parameters, Keywords, Arguments*

Name	Definition
{service-type service-name|*****}	Delete services learned via the SAP protocol from the IPX service table. • **service-type** -The type number of the service. The range is **0-FFFF**. • **service-name** - The name of the service - the length is **1 to 47** bytes. • ***** - Deletes all services from the routing table.

Sample Output

This example deletes all SAP-learned services in the IPX routing table.

```
Cajun(configure)# clear ipx service *
```

System Supported: P550R

ipx advertise-default-route-only

Command Mode: Interface

Description

Advertise only the default RIP route. The **no** form of this command advertises all known routes out the interface; this is also the default.

Command Syntax

To Enable:	`ipx advertise-default-route-only`
To Disable:	`[no] ipx advertise-default-route-only`

Sample Output

```
Cajun(config-if:serial0)# ipx advertise-default-route-only
```

System Supported: P550R

ipx default-route

Command Mode: Configuration

Description

Forward all packets for which a route to the destination network is unknown, to the default network. The **no** form of this command disables the use of the default network. The default state is **disabled**.

Command Syntax

To Enable:	`ipx default-route`
To Disable:	`[no] ipx default-route`

Sample Output

```
Cajun(configure)# ipx default-route
```

System Supported: P550R

ipx delay

Command Mode: Interface

Description

Set the ticks for an IPX interface. The **no** form of this command restores the system default, which is **1** tick.

Command Syntax

To Enable:	`ipx delay <ticks>`
To Disable:	`[no] ipx delay <ticks>`

Table 3-3. *Parameters, Keywords, Arguments*

Name	Definition
ticks	Number of IBM clock ticks of delay to use. One clock tick is 55 milliseconds (1/18th of a second). The range is **1** to **32000** ticks.

Sample Output

```
Cajun(config-if:serial0)# ipx delay 20000
```

System Supported: P550R

ipx down

Command Mode: Interface

Description

Administratively shut down an IPX network. The **no** form of this command restarts the network. The default state is **disabled**.

Command Syntax

To Enable:	`ipx down`
To Disable:	`[no] ipx down`

Sample Output

```
Cajun(config-if:serial0)# ipx down
```

System Supported: P550R

ipx gns-reply-disable

Command Mode: Interface

Description

Disable the sending of replies to IPX Get Nearest Server (GNS) queries.The **no** form of this command restores the default state, which is **enabled**.

Command Syntax

To Enable:	`ipx gns-reply-disable`
To Disable:	`[no] ipx gns-reply-disable`

Sample Output

```
Cajun(config-if:serial0)# ipx gns-reply-disable
```

System Supported: P550R

ipx gns-response-delay

Command Mode: Interface

Description

Change the delay when responding to IPX Get Nearest Server (GNS) requests. The **no** form of this command restores the default. The default is **zero**, which indicates no delay.

Command Syntax

To Enable:	`ipx gns-response-delay <milliseconds>`
To Disable:	`[no] ipx gns-response-delay <milliseconds>`

Table 3-4. *Parameters, Keywords, Arguments*

Name	Definition
milliseconds	The time, in milliseconds, that the Cisco IOS software waits after receiving a GNS request from an IPX client before responding with a server name to that client. The range is **0** to **5000** milliseconds.

Sample Output

```
Cajun(config-if:serial0)# ipx gns-response-delay 200
```

System Supported: P550R

ipx network

Command Mode: Interface

Description

Enable IPX routing on a particular interface and select the type of encapsulation (optional). The **no** form of this command disables IPX routing. The IPX routing default is **disabled**, and the default encapsulation type is: **arpa**.

Command Syntax

To Enable:	`ipx network <network> [encapsulation {arpa|novell-ether|sap|snap}]`
To Disable:	`[no] ipx network <network> [encapsulation {arpa|novell-ether|sap|snap}]`

Table 3-5. *Parameters, Keywords, Arguments*

Name	Definition
network	The IPX network address. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. The range is **1** to **FFFFFFFD**.
encapsulation	The encapsulation (framing) type. Options are: • **arpa**- Use Novell's Ethernet_II encapsulation. This encapsulation is recommended for networks that handle both TCP/IP and IPX traffic. • **novell-ether** - Use Novell's “Ethernet_802.3” encapsulation. This encapsulation consists of a standard 802.3 Media Access Control (MAC) header followed directly by the IPX header with a checksum of FFFF. It is the default encapsulation used by all versions of NetWare up to and including Version 3.11. • **sap** - Use Novell's Ethernet_802.2 encapsulation.This encapsulation consists of a standard 802.3 MAC header followed by an 802.2 LLC header. This is the default encapsulation used by NetWare Version 3.12 and 4.0. • **snap** - Use Novell Ethernet_Snap encapsulation. This encapsulation consists of a standard 802.3 MAC header followed by an 802.2 SNAP LLC header.

Sample Output

```
Cajun(config-if:serial0)# ipx network 2 encapsulation snap
```

System Supported: P550R

ipx output-rip-delay

Command Mode: Interface

Description

Set the interpacket delay for RIP updates sent on a single interface. The **no** form of this command results in no interpacket delay. The default state is **enabled**, which is a 55 millisecond delay.

Note: On the Cisco system this command takes a delay. On the Cajun system, it is a Boolean.

Command Syntax

To Enable:	`ipx output-rip-delay`
To Disable:	`[no] ipx output-rip-delay`

Sample Output

```
Cajun(config-if:serial0)# ipx output-rip-delay
```

System Supported: P550R

ipx output-sap-delay

Command Mode: Interface

Description

Set the interpacket delay for Service Advertising Protocol (SAP) updates sent on a single interface. The **no** form of this command results in no interpacket delay. The default state is **enabled**, which is a 55 millisecond delay.

Note: On the Cisco system, this command takes a delay. On the Cajun system, it is a Boolean.

Command Syntax

To Enable:	`ipx output-sap-delay`
To Disable:	`[no] ipx output-sap-delay`

Sample Output

```
Cajun(config-if:serial0)# ipx output-sap-delay
```

System Supported: P550R

ipx rip

Command Mode: Interface

Description

Enable IPX RIP on an interface. The **no** form of this command disables IPX RIP on the interface. The default interface setting is IPX RIP **enabled**.

Command Syntax

To Enable:	`ipx rip`
To Disable:	`[no] ipx rip`

Sample Output

```
Cajun(config-if:serial0)# ipx rip
```

System Supported: P550R

ipx rip-filter

Command Mode: Interface

Description

Control which networks are present in RIP packets sent and received on the interface. The **no** form of this command removes the filter from an interface.

Command Syntax

To Enable:	`[no] ipx rip-filter <precedence> <start-network> <end-network> {outbound|inbound|both} {filter| allow} [<filter-ticks> [<filter-hops>]]`
To Disable:	`[no] ipx rip-filter <precedence> <start-network> <end-network> {outbound | inbound | both} {filter | allow} [<filter-ticks> [<filter-hops>]]`

Table 3-6. *Parameters, Keywords, Arguments*

Name	Definition
precedence	A number indicating the precedence of this RIP filter in relation to other RIP filters on this interface. Lower numbers indicate a higher precedence. The range is **0-9999**.
start-network	The first IPX network address this filter should match. The range is **0-FFFFFFFF**.
end-network	The last IPX network address this filter should match. The range is **0-FFFFFFFF**.
outbound|inbound| both	The filter direction. • **outbound** - apply filter to RIP packets sent out the interface. • **inbound** - apply filter to RIP packets received on the interface. • **both** - apply filter to RIP packets in both directions.

filter|allow	The action to take for the IPX network in question. • **filter** - do not add the network to the routing table (inbound RIP packets) or do not advertise the network (outbound RIP packets). • **allow** - add the network to the routing table (inbound RIP packets) or advertise the network (outbound RIP packets).
filter-ticks	Modify the number of ticks to get to the network in the routing table (inbound RIP packets) or in the advertised information (outbound RIP packets). The range is **0** to **32000** ticks.
filter-hops	Modify the number of hops to get to the network in the routing table (inbound RIP packets) or in the advertised information (outbound RIP packets). The range is **0** to **16** hops.

Sample Output

```
Cajun(config-if:serial0)# ipx rip-filter 5 2 3 both allow 10000 5
```

System Supported: P550R

ipx rip-max-packetsize

Command Mode: Interface

Description

To configure the maximum packet size of RIP updates sent out the interface. To restore the default packet size, use the **no** form of this command. The default state is **disabled**.

Note: On a Cisco system, this command takes packetsize. On the Cajun system, it is a Boolean.

Command Syntax

To Enable:	`ipx rip-max-packetsize`
To Disable:	`[no] ipx rip-max-packetsize`

Sample Output

```
Cajun(config-if:serial0)# ipx rip-max-packetsize
```

System Supported: P550R

ipx rip-multiplier

Command Mode: Interface

Description

Configure the interval at which a network's RIP entry ages out. The **no** form of this command restores the default. The default value is **three times the RIP update interval**.

Command Syntax

To Enable:	`ipx rip-multiplier<multiplier>`
To Disable:	`[no] ipx rip-multiplier<multiplier>`

Table 3-7. *Parameters, Keywords, Arguments*

Name	Definition
multiplier	The multiplier used to calculate the interval at which RIP routing table entries age out. This can be any positive number. The value you specify is multiplied by the RIP update interval to determine the aging-out interval.

Sample Output

```
Cajun(config-if:serial0)# ipx rip-multiplier 40
```

System Supported: P550R

ipx route

Command Mode: Configuration

Description

Add a static route to the routing table. The **no** form of this command removes a route from the routing table.

Command Syntax

To Enable:	`ipx route {<network>|default} <network.next-hop-node> [<ticks> [<hops>]]`
To Disable:	`[no] ipx route {<network>|default} <network.next-hop-node>`

Table 3-8. *Parameters, Keywords, Arguments*

Name	Definition
network|default	• **network** - an eight-digit hexadecimal number that identifies the network on which you are establishing a static route. The range is **1** to **FFFFFFFD** and leading zeros can be omitted (for 000000BB, enter **BB**). • **default** - creates a static entry for the default-route.
network next-hop-node	Network number and node address of the next hop to the server. • **next-hop-node** - The argument node is the node number of the target Novell server. This is a 48-bit value represented by a MAC address (aa:bb:cc:dd:ee:ff).
ticks	Number of IBM clock ticks of delay to the network for which you are establishing a static route. The range is **1** to **32000**.
hops	Number of hops to the network for which you are establishing a static route. The range is **1** to **16**.

Sample Output

This example adds a static route to the routing table.

```
Cajun(configure)# ipx route 50 100.02:e0:3b:00:45:63
```

System Supported: P550R

ipx router

Command Mode: Configuration

Description

Enables the IPX RIP and IPX SAP protocols on a global basis. Use the **no** form of the command to disable the protocols. The default state is **enabled**.

Note: The Cisco command also takes eigrp and nlsp as router types.

Command Syntax

To Enable:	`ipx router {rip|sap}`
To Disable:	`[no] ipx router {rip|sap}`

Table 3-9. *Parameters, Keywords, Arguments*

Name	Definition
rip|sap	IPX RIP and IPX SAP protocols.

Sample Output

This example disables IPX RIP on a global basis.

```
Cajun(configure)# no ipx router rip
```

System Supported: P550R

ipx routing

Command Mode: Configuration

Description

Enable IPX routing. The **no** form of this command disables IPX routing. The default state is **disabled**.

Command Syntax

To Enable:	`[no] ipx routing`
To Disable:	`ipx routing`

Sample Output

This example enables IPX routing.

```
Cajun(configure)# ipx routing
```

System Supported: P550R

ipx sap

Command Mode: Interface

Description

Enable IPX SAP on an interface. The **no** form of this command disables IPX SAP on an interface. Default interface setting is IPX SAP **enabled**.

Command Syntax

To Enable:	`ipx sap`
To Disable:	`[no] ipx sap`

Sample Output

```
Cajun(config-if:serial0)# no ipx sap
```

System Supported: P550R

ipx sap-max-packetsize

Command Mode: Interface

Description

Configure the maximum packet size of Service Advertising Protocol (SAP) updates sent out the interface. The **no** form of this command disables this function. The default state is **disabled**.

Note: On a Cisco system, this command takes packetsize. On the Cajun system, it is a Boolean.

Command Syntax

To Enable:	`ipx sap-max-packetsize`
To Disable:	`[no] ipx sap-max-packetsize`

Sample Output

`Cajun(config-if:serial0)#` **ipx sap-max-packetsize**

System Supported: P550R

ipx sap-multiplier

Command Mode: Interface

Description

Configure the interval at which a network or server's Service Advertising Protocol (SAP) entry ages out. The **no** form of this command restores the default, which is three times the SAP update interval.

Command Syntax

To Enable:	`ipx sap-multiplier <multiplier>`
To Disable:	`[no] ipx sap-multiplier <multiplier>`

Table 3-10. *Parameters, Keywords, Arguments*

Name	Definition
multiplier	The multiplier used to calculate the interval SAP routing table entries age out. This can be any positive number. The value you specify is multiplied by the SAP update interval to determine the aging-out interval.

Sample Output

```
Cajun(config-if:serial0)# ipx sap-multiplier 20
```

System Supported: P550R

ipx sap-name-filter

Command Mode: Interface

Description

Specify which services (by name) are present in SAP packets sent and received on the interface. The **no** form of this command removes a filter from the interface.

Command Syntax

To Enable:	`ipx sap-name-filter <precedence> <filter-name> <service-type> {outbound|inbound|both} {filter| allow} [<filter-hops>]`
To Disable:	`[no] ipx sap-name-filter <precedence> <filter-name> <service-type> {outbound|inbound|both} {filter| allow} [<filter-hops>]`

Table 3-11. *Parameters, Keywords, Arguments*

Name	Definition
precedence	A number indicating the precedence of this SAP name filter in relation to other SAP name filters on this interface. Lower numbers indicate a higher precedence. The range is **0-9999**.
filter-name	The name of the service that this filter matches. The filter-name is compared against the Service name for a match. A single asterisk may be present as the last character of filter-name, which matches all remaining characters. Up to **1** to **63** bytes are allowed.
service-type	The number of the IPX service type, in hexadecimal. This is between **0** and **FFFF,** where FFFF matches all service types.

outbound|inbound| both	The filter direction. • **outbound** - Apply filter to SAP packets sent out the interface. • **inbound** - Apply filter to SAP packets received on the interface. • **both** - Apply filter to SAP packets in both directions.
filter|allow	The action to take for the IPX service. • **filter** - Do not add the service to the service table (inbound SAP packets) or do not advertise the service (outbound SAP packets). • **allow** - Add the service to the service table (inbound SAP packets) or advertise the service (outbound SAP packets).
filter-hops	The number of hops to get to the service in the service table (inbound SAP packets) or in the advertised information (outbound SAP packets). The range is **0** to **16** hops.

Sample Output

```
Cajun(config-if:serial0)# ipx sap-name-filter 2 netbios 1 both allow
4
```

System Supported: P550R

ipx sap-network-filter

Command Mode: Interface

Description

Specify which services (by network) are present in SAP packets sent and received on the interface. The **no** form of this command removes the filter from an interface.

Command Syntax

To Enable:	`ipx sap-network-filter <precedence> <filter-network> <service-type> {outbound|inbound | both} {filter|allow} [<filter-hops>]`
To Disable:	`[no] ipx sap-network-filter <precedence>`

Table 3-12. *Parameters, Keywords, Arguments*

Name	Definition
precedence	A number indicating the precedence of this SAP name filter in relation to other SAP name filters on this interface. Lower numbers indicate a higher precedence. The range is **0-9999.**
filter-network	The network of the service that this filter matches. The range is **0 - FFFFFFFF** where, FFFFFFFF matches all networks.
service-type	The type of the IPX SAP service, in hexadecimal. The range is **0 - FFFF** where, FFFF matches all service types.
outbound|inbound| both	The filter direction. • **outbound** - Apply filter to SAP packets sent out the interface. • **inbound** - Apply filter to SAP packets received on the interface. • **both** - Apply filter to SAP packets in both directions.

filter|allow	The action to take for the IPX service. • **filter** - Do not add the service to the service table (inbound SAP packets) or do not advertise the service (outbound SAP packets). • **allow** - Add the service to the service table (inbound SAP packets) or advertise the service (outbound SAP packets).
filter-hops	The number of hops to get to the service in the service table (inbound SAP packets) or in the advertised information (outbound SAP packets). The range is **0** to **16** hops.

Sample Output

```
Cajun(config-if:serial0)# ipx sap-network-filter 1 3 2 both allow
4
```

System Supported: P550R

ipx send-receive-mode

Command Mode: Interface

Description

Set the RIP/SAP send and receive characteristics of the IPX interface. The **no** form of this command restores the default, which is **talk-listen.**

Command Syntax

To Enable:	`ipx send-receive-mode {rip|sap} {talk-only| listen-only|talk-listen}`
To Disable:	`[no] ipx send-receive-mode {rip|sap}`

Table 3-13. *Parameters, Keywords, Arguments*

Name	Definition
rip|sap	Specify **RIP** or **SAP** and indicate the send-receive characteristic: • **talk-only** - RIP or SAP only transmits updates on the interface and does not receive them. Does not send RIP or SAP requests. • **listen-only** - RIP or SAP only receives updates on the interface and does not transmit them. • **talk-listen** - RIP or SAP transmits and receives updates on the interface.

Sample Output

```
Cajun(config-if:serial0)# ipx send-receive-mode rip talk-listen
```

System Supported: P550R

ipx send-triggered-updates

Command Mode: Interface

Description

Send RIP/SAP triggered updates on the IPX interface. Use the **no** form of this command to disable triggered updates. The default state is **enabled**.

Command Syntax

To Enable:	`ipx send-triggered-updates {rip|sap}`
To Disable:	`[no] ipx send-triggered-updates {rip|sap}`

Table 3-14. *Parameters, Keywords, Arguments*

Name	Definition
rip|sap	Specify **RIP** or **SAP**.

Sample Output

```
Cajun(config-if:serial0)# ipx send-triggered-updates rip
```

System Supported: P550R

ipx service

Command Mode: Configuration

Description

Specify static Service Advertising Protocol (SAP) entries. To remove static SAP entries, use the **no** form of this command. The default is that no static services are defined.

Command Syntax

To Enable:	`ipx service <service-type> <service-name> <network> <node> <socket> <network.next-hop-node> <hops>`
To Disable:	`[no] ipx service <service-type> <service-name> <network> <node> <socket> <network.next-hop-node> <hops>`

Table 3-15. *Parameters, Keywords, Arguments*

Name	Definition
service-type	The number of the type of the service. The range is **0-FFFF**.
service-name	Name of the server that provides the service. The range is **1 to 47** bytes long.
network, node	Network number and node address of the server. • The argument network is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA you can enter AA. • The argument node is the node number of the target Novell server. This is a 48-bit value represented by a MAC address (aa:bb:cc:dd:ee:ff).
socket	The socket number for this service. The range is **0 - FFFF**

network.next-hop-node	Network number and node address of the next hop to the server. <next-hop-node> - The argument node is the node number of the target Novell server. This is a 48-bit value represented by a MAC address (aa:bb:cc:dd:ee:ff).
hops	Number of hops to the server. The range is **1-16.**

Sample Output

This example adds a static service to the service table.

```
Cajun(configure)# ipx service 4FS_ENG01 36112114 00:00:00:00:00:01
451 100.02:e0:3b:00:45:63
```

System Supported: P550R

ipx type-20-propagation

Command Mode: Interface

Description

Specify whether or not an IPX interface accepts and forwards IPX type 20 propagation packet broadcasts. The **no** form of this command reverts back to the default, which is **both**.

Command Syntax

To Enable:	`ipx type-20-propagation {both|inbound|outbound|disabled}`
To Disable:	`[no] ipx type-20-propagation`

Table 3-16. *Parameters, Keywords, Arguments*

Name	Definition
`both|inbound|outbound|none`	• **both** - The interface accepts and forwards type 20 propagation broadcast packets. This is the default. • **inbound** - The interface only accepts type 20 broadcast packets. • **outbound** - The interface only forwards type 20 propagation broadcast packets to other network segments. • **disabled** - The interface does not accept or forward type 20 propagation broadcast packets.

Sample Output

```
Cajun(config-if:serial0)# ipx type-20-propagation outbound
```

System Supported: P550R

ipx update interval

Command Mode: Interface

Description

Adjust the RIP or SAP update interval. The **no** form of this command restores the default, of **60 seconds**.

Command Syntax

To Enable:	`ipx update interval {rip|sap} <seconds>`
To Disable:	`[no] ipx update interval`

Table 3-17. *Parameters, Keywords, Arguments*

Name	Definition
rip|sap	• **rip** - Adjusts the interval at which RIP updates are sent. The minimum interval is 10 seconds. • **sap** - Adjusts the interval at which SAP updates are sent. The minimum interval is 10 seconds.
seconds	The update interval. The range is **10** - **604800** seconds.

Sample Output

This example modifies the RIP update interval to 1000 seconds.

```
Cajun(config-if:serial0)# ipx update interval rip 1000
```

System Supported: P550R

ipx vlan

Command Mode: Interface

Description

Specify the VLAN on which the IPX interface operates. The **no** form of this command restores the IPX interface to the discard VLAN.

Command Syntax

To Enable:	`ipx vlan {<vlan-id>|name <vlan-name>}`
To Disable:	`[no] ipx vlan {<vlan-id>|name<vlan-name>}`

Table 3-18. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	The VLAN ID of the VLAN.
name	<vlan-name> - The name of the VLAN

Sample Output

This example specifies that the IPX interfaces on serial interface 1 reside on VLAN 200.

```
Cajun(config)# interface serial1
Cajun(config-if:serial1)# ip vlan 200
```

System Supported: P550R

show ipx cache

Command Mode: User

Description

Display the contents of the IPX fast-switching cache.

Command Syntax

To View:	`show ipx cache`

Sample Output

```
Cajun> show ipx cache
PRE 6
   Tree is IPX
   Access Rule is None
   Destination Address is 36112214
   Source Address is 0
   Destination Port is 0
   Source Port is 0
   Comp is DA
   TTL is 0
   Age is 0
   Filter is No
   Destination VLAN is tiny100
   Source VLAN is 00:c0:4f:ae:6b:6d
   Use is 1
   Priority is 0
   Format is Eth2
   .
   .
   .
```

System Supported: P550R

show ipx interface

Command Mode: User

Description

Display the details of IPX interfaces configured in the IOS software and the parameters configured on each interface.

Command Syntax

To View:	`show ipx interface [<intf-name>]`

Table 3-19. *Parameters, Keywords, Arguments*

Name	Definition
intf-name	The name of the interface to show.

Sample Output

```
Cajun> show ipx interface 10005129
10005129 is up, and administratively up
   On vlan ipxServer, is up
  IPX address is 10005129.02:e0:3b:d4:48:03, encapsulation type
Ethernet SNAP
  MTU is 1492 bytes
  Delay of this Novell network, in ticks, is 1
  IPX Type 20 propagation packet forwarding mode is set to Inbound
  IPX RIP is enabled on this interface
   IPX RIP periodic update packets have an interpacket gap of 55 msec
   IPX RIP updates are sent with up to 50 networks per packet
   Sending of IPX RIP triggered updates is enables
   IPX RIP update interval is 60 seconds
   IPX RIP aging interval multiplier is 3
.
.
.
```

System Supported: P550R

show ipx route

Command Mode: User

Description

Display the contents of the IPX Routing Table.

Command Syntax

To View:	`show ipx route [{<network>|default}]`

Table 3-20. *Parameters, Keywords, Arguments*

Name	Definition
network	The number of the network whose routing table entry you want to display. This is an eight-digit hexadecimal number that uniquely identifies a network cable segment. It can be a number in the range 1 to FFFFFFFD. You do not need to specify leading zeros in the network number. For example, for the network number 000000AA, you can enter AA.
default	Displays the default route. This is equivalent to specifying a value of FFFFFFFE for the argument network.

Sample Output

```
Cajun> show ipx route
Codes: C - Connected primary network, S - Static, R - RIP
       s - seconds

7 Total IPX routes.

IPX default route known

C 100        (Ethernet 802.3), 100
C 1001       (Ethernet II), 1001
C 1002       (Ethernet 802.2), 1002
C 1003       (Ethernet SNAP), 1003
C 10005129   (Ethernet SNAP), 10005129
R AAAAAAAA   [2/2] via 10005129.00:c0:4f:ae:6b:6d, 10005129
S FFFFFFFF   via 100.02:e0:3b:00:45:63, 100
```

System Supported: P550R

show ipx services

Command Mode: User

Description

List the IPX services added via static configuration or discovered through Service Advertising Protocol (SAP) advertisements.

Command Syntax

To View:	`show ipx services [unsorted|[sorted[name|net|type]]`

Table 3-21. *Parameters, Keywords, Arguments*

Name	Definition
unsorted	Does not sort entries when displaying IPX services.
sorted	Sorts the display of IPX services according to the keyword that follows.
name	Displays the IPX services alphabetically by server name.
net	Displays the IPX services numerically by network number.
type	Displays the IPX services numerically by SAP service type. This is the default.

Sample Output

```
Cajun> show ipx service
Codes: S - Static, P - Periodic
4 Total IPX services.

Code          Type  Name        Address            Route  Hops
Ift
S             4     FileServer2            60.00:00:00:00:00:01.0455
0/0     1
100
P             4     SQA1        36112214.00:00:00:00:00:01.0451 2/2
2
10005129
P             26b   TREE1_________36112214.00:00:00:00:00:01.00052/2
2
10005129
.
.
.
```

System Supported: P550R

show ipx traffic

Command Mode: User

Description

Display the number and type of IPX packets transmitted and received.

Command Syntax

To View:	`show ipx traffic`

Sample Output

```
Cajun> show ipx traffic

Rcvd:   3260 total, 56 format errors, 0 checksum errors, 0 bad hop
count,
        0 unknown socket, 3204 local destination, 0 NetBIOS
Sent:   14104 generated, 0 forwarded, 57 no route, 1 output errors
Echo:   Rcvd 0 requests, 1 replies
        Sent 1 requests, 0 replies
```

System Supported: P550R

4

L3 Cache

Overview

This chapter describes:

- ip multicast route-cache aging
- ip multicast route-cache hash-depth
- ip multicast route-cache hash-mode
- ip multicast route-cache max-size
- ip multicast route-cache update-timeout
- ip unicast route-cache aging
- ip unicast route-cache hash-depth
- ip unicast route-cache hash-mode
- ip unicast route-cache max-size
- ip unicast route-cache update-timeout
- ipx route-cache aging
- ipx route-cache hash-depth
- ipx route-cache hash-mode
- ipx route-cache max-size
- ipx route-cache update-timeout
- show ip multicast cache
- show ip unicast cache

ip multicast route-cache aging

Command Mode: Configuration

Description

Enable aging of IP routes in the IP forwarding cache. The **no** form of this command disables aging. The default state is **enabled**.

Command Syntax

To Enable:	`ip multicast route-cache aging`
To Disable:	`[no] ip multicast route-cache aging`

System Supported: P550R

ip multicast route-cache hash-depth

Command Mode: Configuration

Description

Configure the ip multicast route cache hashing depth. The **no** form of this command restores the default, which is **hash-12**.

Command Syntax

To Enable:	`ip multicast route-cache hash-depth {hash-8| hash-10|hash-12}`
To Disable:	`[no] ip multicast route-cache hash-depth`

Table 4-1. *Parameters, Keywords, Arguments*

Name	Definition
hash-8|hash-10| hash-12	Enter the hash depth for IP multicast. Choices include: • **Hash-8** - An 8-bit memory bucket used to store information about the source or destination protocol address (or both). • **Hash -10** - A 10-bit memory bucket used to store information about the source or destination protocol address (or both). • **Hash-12** - A 12-bit memory bucket used to store information about the source or destination protocol address (or both).

System Supported: P550R

ip multicast route-cache hash-mode

Command Mode: Configuration

Description

Configure the ip multicast route cache hashing mode. The **no** form of this command restores the default, which is **sa-da**.

Command Syntax

To Enable:	`ip multicast route-cache hash-mode {da-only|sa-da}`
To Disable:	`[no] ip multicast route-cache hash-mode`

Table 4-2. *Parameters, Keywords, Arguments*

Name	Definition
da-only|sa-da	Enter the hash table lookup mode for IP multicast. Choices include: • **da-only** - Destination address only. • **sa-da** - Source Address-Destination Address.

System Supported: P550R

ip multicast route-cache max-size

Command Mode: Configuration

Description

Set a maximum limit on the number of entries in the ip multicast route cache. The **no** form of this command restores the default, which is **15000** entries.

Command Syntax

To Enable:	`ip multicast route-cache max-size <multicast-max-size>`
To Disable:	`[no] ip multicast route-cache max-size`

Table 4-3. *Parameters, Keywords, Arguments*

Name	Definition
multicast-max-size	The maximum number of entries allowed in the multicast route cache.

System Supported: P550R

ip multicast route-cache update-timeout

Command Mode: Configuration

Description

Adjust the period of cache invalidation due to aging. The **no** form of this command disables aging and restores the default of **120 seconds**.

Command Syntax

To Enable:	`ip multicast route-cache update-timeout <ip-multicast-period>`
To Disable:	`[no] ip multicast route-cache update-timeout`

Table 4-4. *Parameters, Keywords, Arguments*

Name	Definition
ip-multicast-period	The period, in seconds, that route cache entries are invalidated.

System Supported: P550R

ip unicast route-cache aging

Command Mode: Configuration

Description

Enable aging of IP unicast route cache entries. The **no** form of this command disables aging. The default state is **enabled**.

Command Syntax

To Enable:	`ip unicast route-cache aging`
To Disable:	`[no] ip unicast route-cache aging`

Sample Output

This example illustrates the output for the ip unicast route-cache commands.

```
Cajun(configure)# ip unicast route-cache ?
        aging
        hash-depth
        hash-mode
        max-size
        update-timeout
```

System Supported: P550R

ip unicast route-cache hash-depth

Command Mode: Configuration

Description

Configure the ip unicast route cache hashing depth. The **no** form of this command restores the default, which is **hash-12**.

Command Syntax

To Enable:	`ip unicast route-cache hash-depth {hash-8|hash-10|hash-12}`
To Disable:	`[no] ip unicast route-cache hash-depth`

Table 4-5. *Parameters, Keywords, Arguments*

Name	Definition
hash-8|hash-10|hash-12	The hash depth for IP unicast. Choices include: • **Hash-8** - An 8-bit memory bucket used to store information about the source or destination protocol address (or both). • **Hash -10** - A 10-bit memory bucket used to store information about the source or destination protocol address (or both). • **Hash-12** - A 12-bit memory bucket used to store information about the source or destination protocol address (or both).

Sample Output

This example illustrates the output for the ip unicast route-cache hash-depth command.

```
Cajun(configure)# ip unicast route-cache hash-depth ?
        hash-10
        hash-12
        hash-8
```

System Supported: P550R

ip unicast route-cache hash-mode

Command Mode: Configuration

Description

Configure the ip unicast route cache hashing mode. The **no** form of this command restores the default, which is **da-only**.

Command Syntax

To Enable:	`ip unicast route-cache hash-mode {da-only|sa-da}`
To Disable:	`[no] ip unicast route-cache hash-mode`

Table 4-6. *Parameters, Keywords, Arguments*

Name	Definition
da-only|sa-da	The hash table lookup mode for IP unicast. Choices include: • **da-only** - Destination address only. • **sa-da** - Source Address-Destination Address.

Sample Output

This example illustrates the output for the ip unicast route-cache hash-mode command.

```
Cajun(configure)# ip unicast route-cache hash-mode ?
        da-only
        sa-da
```

System Supported: P550R

ip unicast route-cache max-size

Command Mode: Configuration

Description

Set a maximum limit on the number of entries in the ip unicast route cache. The **no** form of this command restores the default, which is **15000** entries.

Command Syntax

To Enable:	`ip unicast route-cache max-size <unicast-max-size>`
To Disable:	`[no] ip unicast route-cache max-size`

Table 4-7. *Parameters, Keywords, Arguments*

Name	Definition
unicast-max-size	Maximum number of entries allowed in the unicast route cache.

Sample Output

This example illustrates the output for the ip unicast route-cache max-size command.

```
Cajun(configure)# ip unicast route-cache max-size ?
        <unicast-max-size> - Maximum size of unicast cache
```

System Supported: P550R

ip unicast route-cache update-timeout

Command Mode: Configuration

Description

Adjust the period of ip unicast route cache invalidation due to aging. The **no** form of this command disables aging and restores the default of **120 seconds**.

Command Syntax

To Enable:	`ip unicast route-cache update-timeout <ip-unicast-period>`
To Disable:	`[no] ip unicast route-cache update-timeout`

Table 4-8. *Parameters, Keywords, Arguments*

Name	Definition
ip-unicast-period	The period, in seconds, that route cache entries are invalidated. The range is **20-360** seconds. A value of zero disables this feature.

Sample Output

This example illustrates the output for the ip unicast route-cache update-timeout command.

```
Cajun(configure)# ip unicast route-cache update-timeout ?
        <ip-unicast-period> - IP unicast Age Period (20 - 360)
seconds
```

System Supported: P550R

ipx route-cache aging

Command Mode: Configuration

Description

Configure IPX route cache aging. The **no** form of this command disables aging. The default state is **enabled**.

Command Syntax

To Enable:	`ipx route-cache aging`
To Disable:	`[no] ipx route-cache aging`

Sample Output

This example disables ipx route cache aging.

`Cajun(configure)#` **ipx route-cache aging disabled**

System Supported: P550R

ipx route-cache hash-depth

Command Mode: Configuration

Description

Configure the IPX route cache hashing depth. The **no** form of this command restores the default, which is **hash-12**.

Command Syntax

To Enable:	`ipx route-cache hash-depth {hash-8|hash-10|hash-12}`
To Disable:	`[no] ipx route-cache hash-depth`

Table 4-9. *Parameters, Keywords, Arguments*

Name	Definition
hash-8|hash-10| hash-12	The hash depth for IPX unicast. Choices include: • **Hash-8** - An 8-bit memory bucket used to store information about the source or destination protocol address (or both). • **Hash -10** - A 10-bit memory bucket used to store information about the source or destination protocol address (or both). • **Hash-12** - A 12-bit memory bucket used to store information about the source or destination protocol address (or both).

Sample Output

This example sets the route cache hash-depth to hash-10.

```
Cajun(configure)# ipx route-cache hash-depth hash-10
```

System Supported: P550R

ipx route-cache hash-mode

Command Mode: Configuration

Description

Configure the ip unicast route cache hashing mode. The **no** form of this command restores the default, which is **da-only**.

Command Syntax

To Enable:	`ipx route-cache hash-mode {da-only|sa-da}`
To Disable:	`[no] ipx route-cache hash-mode`

Table 4-10. *Parameters, Keywords, Arguments*

Name	Definition
da-only|sa-da	The hash table lookup mode for IPX unicast. Choices include: • **da-only** - destination address only. • **sa-da** - source and destination addresses.

Sample Output

This example sets ipx route cache hash mode to sa-da.

`Cajun(configure)#` **ipx route-cache hash-mode sa-da**

System Supported: P550R

ipx route-cache max-size

Command Mode: Configuration

Description

Set a maximum limit on the number of entries in the ipx route cache. The **no** form of this command restores the default, which is **15000** entries.

Command Syntax

To Enable:	`ipx route-cache max-size <ipx-max-size>`
To Disable:	`[no] ipx route-cache max-size`

Table 4-11. *Parameters, Keywords, Arguments*

Name	Definition
ipx-max-size	Maximum number of entries allowed in IPX route cache.

Sample Output

This example sets the maximum route cache size to 12000 entries.

`Cajun(configure)#` **ipx route-cache max-size 12000**

System Supported: P550R

ipx route-cache update-timeout

Command Mode: Configuration

Description

Adjust the period of IPX route cache invalidation due to aging. The **no** form of this command disables aging and restores the default of **120 seconds**.

Command Syntax

To Enable:	`ipx route-cache update-timeout <ipx-period>`
To Disable:	`[no] ipx route-cache update-timeout`

Table 4-12. *Parameters, Keywords, Arguments*

Name	Definition
ipx-period	The period, in seconds, that route cache entries are invalidated.

Sample Output

This example sets the update timeout period to 3 minutes.

`Cajun(configure)#` **ipx route-cache update-timeout 180**

System Supported: P550R

show ip multicast cache

Command Mode: User

Description

Display the IP multicast L3 forwarding cache entries.

Command Syntax

To View:	show ip multicast cache

Sample Output

```
Cajun> show ip multicast cache
PRE 6
   Tree is IP_NUL
   Access Rule is None
   Destination Address is 255.0.1.1
   Source Address is 10.0.1.199
   Destination Port is 0
   Source Port is 0
   Comp is DASA
   TTL is 0
   Age is 7
   Filter is Yes
   Destination VLAN is vlan40
   Source VLAN is vlan40
   Mac Address is Derived from DA
   Use is 1
   Priority is 0
   Format is Eth 2System Supported: P550R
```

System Supported: P550R

show ip unicast cache

Command Mode: User

Description

Display the IP unicast L3 forwarding cache entries.

Command Syntax

To View:	`show ip unicast cache`

Sample Output

```
Cajun> show ip unicast cache
PRE 2
   Destination Address is 10.0.4.94
   Source Address is 0.0.0.0
   Destination Port is 0
   Source Port is 0
   Comp is DA
   TTL is 0
   Age is 7
   Filter is No
   Destination VLAN is vlan40
   Source VLAN is n/a
   Mac Address is 02:e0:3b:dd:c4:27
   Use is 0
   Priority is 7
   Format is Eth 2
.
.
.
```

System Supported: P550R

5

L3 MCAST

Overview

This chapter describes:

- clear igmp-snooping statistics
- clear lgmp client statistics
- set igmp-snooping
- set lgmp server
- set lgmp server priority
- set lgmp server proxy
- set lgmp server robust-variable
- set lgmp server router-report-time
- show igmp-snooping statistics
- show lgmp server

clear igmp-snooping statistics

Command Mode: Configuration

Description

Clear IGMP snooping statistics.

Command Syntax

To Enable:	`clear igmp-snooping statistics`

Sample Output

This example clears igmp snooping statistics.

```
Cajun(configure)# clear igmp snooping statistics
```

System Supported: P550R

clear lgmp client statistics

Command Mode: Configuration

Description

Clear the LGMP client global or per VLAN statistics. Excluding parameters clears the global counters that represent all LGMP servers.

Command Syntax

To Enable:	`clear lgmp client statistics [vlan {all|<vlan-id>|name <vlan-name>}]`

Table 5-1. *Parameters, Keywords, Arguments*

Name	Definition
`vlan`	The keyword for per VLAN commands. **all|vlan-id** - All VLANS or the numerical ID of a specific VLAN.
`name`	The keyword for the VLAN name. **vlan-name** - The string ID of the vlan.

Sample Output

This example clears all lgmp client statistics.

```
Cajun(configure)# clear lgmp client statistics
Global statistics cleared
```

System Supported: P550R

set igmp-snooping

Command Mode: Configuration

Description

Enable or disable IGMP snooping. The default state of IGMP snooping is **disabled**.

Command Syntax

To Enable:	`set igmp-snooping {enable|disable}`

Table 5-2. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable IGMP snooping functionality.

Sample Output

This example enables IGMP snooping.

```
Cajun(configure)# set igmp-snooping enable
```

System Supported: P550R

set lgmp server

Command Mode: Configuration

Description

Enable or disable the LGMP server. The LGMP server is **disabled** by default.

Command Syntax

To Enable:	`set lgmp server {enable|disable}`

Table 5-3. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable the LGMP server.

Sample Output

This example disables lgmp server

```
Cajun(configure)# set lgmp server disable
```

System Supported: P550R

set lgmp server priority

Command Mode: Configuration

Description

Set the LGMP server ID priority. Excluding the parameter sets the priority to its default of **128**.

Command Syntax

To Enable:	`set lgmp server priority [<server-priority>]`

Table 5-4. *Parameters, Keywords, Arguments*

Name	Definition
server-priority	Specifies the most significant byte of the LGMP Server ID. The lower four bytes are defined by the IP address of the interface and VLAN associated with the particular LGMP Server. The server priority can make LGMP servers on a device distributors or non-distributors. The lowest LGMP Server ID wins the distributor election.

Sample Output

This example sets the LGMP server priority to 140.

```
Cajun(configure)# set lgmp server priority to 140
LGMP Server ID Priority successfully set to 140
```

System Supported: P550R

set lgmp server proxy

Command Mode: Configuration

Description

Enable or disable the LGMP server proxy mode. The proxy modes allows an LGMP server to generate LGMP Router Report and LGMP Router Leave messages on behalf of another router on the same VLAN. The default state is **disabled**.

Command Syntax

To Enable:	`set lgmp server proxy [{enable|disable}]`

Table 5-5. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable the LGMP server proxy mode.

Sample Output

This example enables lgmp server proxy.

```
Cajun(configure)# set lgmp server proxy enable
LGMP Server Proxy Mode successfully set to enable
```

System Supported: P550R

set lgmp server robust-variable

Command Mode: Configuration

Description

Set the LGMP server robustness variable. Omitting the parameter sets the robustness variable to its default value of **2**.

Command Syntax

To Enable:	`set lgmp server robust-variable [<rv-val>]`

Table 5-6. *Parameters, Keywords, Arguments*

Name	Definition
rv-val	The robustness variable that defines the scalar used to calculate the timeout for an LGMP server non-distributor to become a distributor. Scalar used to calculate non-distributor timeout.

Sample Output

This example sets the robust variable to 4.

```
Cajun(configure)# set lgmp server robust-variable 4
LGMP Server Robustness Variable successfully set to 4
```

System Supported: P550R

set lgmp server router-report-time

Command Mode: Configuration

Description

Set the LGMP server router report time. Omitting the parameter sets the router report time to its default time of **125 seconds**.

Command Syntax

To Enable:	`set lgmp server router-report-time [<rrt-seconds>]`

Table 5-7. *Parameters, Keywords, Arguments*

Name	Definition
rrt-seconds	The router report time, measured in seconds, defines the interval in which the LGMP server distributor should send LGMP Router Report messages. These messages are used by the distributor election as a keep-alive for the current distributor.

Sample Output

This example sets the router report time to 150 seconds.

```
Cajun(configure)# set lgmp server router-report-time 150
LGMP Server Router Report Time successfully set to 150
```

System Supported: P550R

show igmp-snooping statistics

Command Mode: User

Description

Display IGMP snooping configuration and statistics. The default state is **disabled**.

Command Syntax

To Enable:	`show igmp-snooping statistics [detailed]`

Table 5-8. *Parameters, Keywords, Arguments*

Name	Definition
`detailed`	Display detailed igmp-snooping statistics.

Sample Output

```
Cajun> show igmp-snooping statistics

IGMP Snooping is currently enabled.

New Sessions Created                                0
Sessions Destroyed                                  0
New Client Ports Added                              0
New Router Ports Added                              0
Router Ports Removed                                0
```

System Supported: P550R

show lgmp server

Command Mode: User

Description

Display current LGMP client and server configuration information or statistics. Omitting parameters after the statistics keyword displays global LGMP server statistics

Command Syntax

To Enable:	`show lgmp client {config|statistics [vlan{all|<vlan-id>|name <vlan-name>}]}`

Table 5-9. *Parameters, Keywords, Arguments*

Name	Definition
config|statistics	LGMP client configuration or statistics. Display the current configuration or current statistics.
vlan	The VLAN(s) associated with the LGMP server. **all | vlan-id** - all VLANS or the numerical ID of a specific VLAN.
name	**vlan-name** - the VLAN name.
server	LGMP server configuration or statistics.

Sample Output

```
Cajun> show lgmp client statistics
Global LGMP Client Statistics
==============================
==============================

LGMP Client Message Reception Stats
====================================
 Report --------------------------- 0
 Leave ---------------------------- 0
 End Session ---------------------- 0
 Router Report -------------------- 0
 Router Leave --------------------- 0
 Invalid -------------------------- 0
```

```
LGMP Client Intelligent Multicast Session Stats
===============================================
 New Client Ports Added ----------- 0
 Existing Client Ports Removed ---- 0
 Existing Sessions Removed -------- 0
 New Router Ports Added ----------- 0
 ExistingRouter Ports Removed ----- 0
  System Supported: P550R
```

6

LDAP

Overview

This chapter describes:

- ❒ ldap debug
- ❒ ldap producer-signal
- ❒ ldap search-base
- ❒ ldap server-primary
- ❒ ldap server secondary
- ❒ show ldap

ldap debug

Command Mode: Diag-Mode

Description

Sets the debug level of the LDAP software.

Command Syntax

To Enable:	`ldap debug <debug-level>`

System Supported: P550R

ldap producer-signal

Command Mode: Diag-Mode

Description

Set the producer signal. The producer signal default is **0** and can either be set directly, or by preceding this command with **no**.

Command Syntax

To Enable:	`ldap producer-signal <producer-signal>`
To Disable:	`[no] ldap producer-signal <producer-signal>`

Table 6-1. *Parameters, Keywords, Arguments*

Name	Definition
producer-signal	Triggers the LDAP client to download the latest config. If the download is successful the consumer signal is set to this producer signal. If there was a problem with the access list the consumer signal shows -1. Setting the producer signal to 0 will have the effect of preventing the LDAP client from comparing this producer signal value with that downloaded from the server. This is an additional check that is done to safeguard against downloading a bad policy. If the producer signal is nonzero and the compare fails, the policy does not go into effect and the consumer signal is set to -1. If the producer signal is nonzero and the compare succeeds, the policy goes into effect and the consumer signal matches this producer signal value. If the LDAP client can not even download the ACLs, the consumer signal remains unchanged.

System Supported: P550R

ldap search-base

Command Mode: Configuration

Description

Define the Lightweight Directory Access Protocol (LDAP) search base. The **no** form of this command removes a search base definition. The search base default is: **"ou=Devices, ou=CajunRules, o=Lucent".**

Command Syntax

To Enable:	`ldap search-base <search-base-dn>`
To Disable:	`[no] ldap search-base <search-base-dn>`

Table 6-2. *Parameters, Keywords, Arguments*

Name	Definition
search-base-dn	The Distinguished Name (DN) that defines the start point of the search.

Sample Output

```
Cajun(configure)# ldap search-base "ou=TestPolicyDomain,
ou=CajunRules, o=lucent.com"
```

System Supported: P550R

ldap server-primary

Command Mode: Configuration

Description

Change the primary LDAP server's IP address and port. The **no** form of this command removes the primary LDAP Server's IP Address. The default IP address is: **0.0.0.0**.

Command Syntax

To Enable:	`ldap server primary <ip-addr> [<port-num>]`
To Disable:	`[no] ldap server primary <ip-addr> [<port-num>]`

Table 6-3. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	The IP address of the primary LDAP server.
port-num	The port number of the primary LDAP server.

Sample Output

```
Cajun(configure)# ldap server primary 199.93.238.93
```

System Supported: P550R

ldap server secondary

Command Mode: Configuration

Description

Change the secondary LDAP server's IP Address and port. The **no** form of this command removes the secondary LDAP Server's IP Address. The default port number is: **398**.

Command Syntax

To Enable:	`ldap server secondary <ip-addr> [<port-num>]`
To Disable:	`[no] ldap server secondary <ip-addr> [<port-num>]`

Table 6-4. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	The IP address of the secondary LDAP server.
port-num	The port number of the secondary LDAP server.

Sample Output

```
Cajun(configure)# ldap server secondary 199.93.238.94 384
```

System Supported: P550R

show ldap

Command Mode: User

Description

Display the current LDAP configuration information.

Command Syntax

To View:	`show ldap`

Sample Output

```
Cajun> show ldap
 LDAP Configuration
 ------------------
 Primary LDAP Server IP address:  120.0.0.2
 Primary LDAP Server Port: 389
 Secondary LDAP Server IP address: 130.78.5.0
 Secondary LDAP Server Port:  389
 LDAP Search base:  ou=Devices, ou=CajunRules, o=lucent
```

System Supported: P550R

7 Logging

Overview

This chapter describes:

- ❒ logging clear
- ❒ logging console
- ❒ logging history
- ❒ logging history size
- ❒ logging protocol event
- ❒ logging shutdown size
- ❒ logging traps
- ❒ show alarms
- ❒ show logging

logging clear

Command Mode: Configuration

Description

Clear the contents of the logging tables.

Command Syntax

To Enable:	`logging clear`

Sample Output

This example clears the event log.

```
Cajun(configure)# logging clear
Event log has been cleared.
```

System Supported: P550R

logging console

Command Mode: Configuration

Description

Configure the type of syslog messages sent to the router's console. The **no** form of this command disables the type specified. The default is: **{system|switch_fabric}**

Command Syntax

To Enable:	`logging console [{start|system|config|temp| resource|fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]`
To Disable:	`[no] logging console [{start|system|config|temp| resource|fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]`

Table 7-1. *Parameters, Keywords, Arguments*

Name	Definition
start|system... |switch_fabric|protocol	The types of syslog messages sent to the router's console.

Sample Output

This example specifies that system syslog messages are sent to the router's console.

```
Cajun(configure)# logging console system
```

logging history

Command Mode: Configuration

Description

Configure the type of syslog messages sent to the router's history and shutdown log. The **no** form of this command disables the type specified. The default is **{start|system|config|temp|resource |fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric}.**

Command Syntax

To Enable:	`logging history [{start|system|config|temp| resource|fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]`
To Disable:	`[no] logging history [{start|system|config|temp| resource|fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]`

Table 7-2. *Parameters, Keywords, Arguments*

Name	Definition
start|system|config|temp...| protocol	The types of syslog messages sent to the router's history and shutdown log.

Sample Output

`Cajun(configure)#` **logging history temp**

logging history size

Command Mode: Configuration

Description

Change the number of syslog messages stored in the router's history table. The **no** form of this command returns the number of messages to the default value, which is **512**.

Command Syntax

To Enable:	`logging history size {128|512|1024|2048`
To Disable:	`[no] logging history size {128|512|1024|2048}`

Table 7-3. *Parameters, Keywords, Arguments*

Name	Definition
128|512|1024|2048	The number of syslog messages stored in the router's history table. The choices are **128**, **512**, **1024**, and **2048**.

Sample Output

This example specifies that 1024 messages can be stored in the router's history table.

`Cajun(configure)#` **logging history-size 1024**

logging protocol event

Command Mode: Configuration

Description

Configure the Protocol Event Management System. The **no** form of this command disables the specified event logging level. The default state is that protocol events are **all disabled**.

Command Syntax

To Enable:	`logging protocol event {rip|ospf|ldap|appletalk} {fault|error|warning|info|trace|debug}`
To Disable:	`[no] logging protocol event {rip|ospf|ldap|appletalk} {fault|error|warning| info|trace|debug}`

Table 7-4. *Parameters, Keywords, Arguments*

Name	Definition
rip|ospf|ldap|appletalk	Indicate the protocol type (**RIP**, **OSPF, LDAP or Appletalk**) and the level of messages to log.

Sample Output

```
Cajun (configure)# logging protocol event ldap fault
Completed set configuration for protocol events.
```

System Supported: P550R

logging shutdown size

Command Mode: Configuration

Description

Change the number of syslog messages stored in the router's shutdown log. The **no** form of this command returns the number of messages to the default value of **16 messages**.

Command Syntax

To Enable:	`logging shutdown size {16|32|64|128}`
To Disable:	`[no] logging shutdown size {16|32|64|128}`

Table 7-5. *Parameters, Keywords, Arguments*

Name	Definition
16|32|64|128	The number of syslog messages to store in the router's shutdown log. The choices are **16**, **32**, **64**, and **128**.

Sample Output

This example sets the number of syslog messaged to be stored in the shutdown log to 64.

`Cajun(configure)#` **logging shutdown size 64**

logging traps

Command Mode: Configuration

Description

Configure the type of syslog messages sent to SNMP trap receivers. The **no** form of this command disables the type specified. The default is:
[{start|system|config|temp|resource|fan|
service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]

Command Syntax

To Enable:	`logging traps [{start|system|config|temp|resource| fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]`
To Disable:	`[no] logging traps [{start|system|config|temp| resource|fan|service_port|user_port|auth_failure| bridge_stat|switch_fabric|protocol}]`

Table 7-6. *Parameters, Keywords, Arguments*

Name	Definition
start|system... |switch_fabric|protocol	The types of syslog messages sent to SNMP trap receivers.

Sample Output

`Cajun(configure)#` **logging traps switch_fabric**

show alarms

Command Mode: User

Description

Display the contents of the active alarm table.

Command Syntax

To View:	show alarms

Sample Output

```
Cajun> show alarms
---------- Active Alarms --------------
-------------------------------------------------------
ID : 2 : Controller Failure  : Missing  (3)  : Redundant Controller
-------------------------------------------------------
ID : 10 : Port Status  : No Link (5)  : Port 3.1
-------------------------------------------------------
ID : 11 : Port Status  : No Link (5)  : Port 3.2
-------------------------------------------------------
ID : 12 : Port Status  : No Link (5)  : Port 4.1
-------------------------------------------------------
.
.
.
```

show logging

Command Mode: User

Description

Display the contents of the shutdown log. The number of events can be specified at the end of the command.

Command Syntax

To View:	`show logging [shutdown] [count]`

Table 7-7. *Parameters, Keywords, Arguments*

Name	Definition
shutdown	Displays the contents of the shutdown log.
count	The number of log messages to display.

Sample Output

```
Cajun> show logging shutdown 25
Log ID   Event ID Time Stamp         Severity    Value
-------- -------- ----------------- ----------- ------
    111        3  00-Sep-15 15:39:15  Informative(20) 0
====> IGMP global configuration updated
    110        3  00-Sep-15 12:15:22  Informative(20) 0
====> IGMP global configuration updated
    109        3  00-Sep-15 12:12:04  Informative(20) 0
     99        3  00-Sep-11 08:45:53  Informative(20) 0
====> RIP global configuration updated
     98        3  00-Sep-11 08:44:34  Informative(20) 0
====> IP global configuration updated
     97        3  00-Sep-11 08:44:03  Informative(20) 0
====> IPX global configuration updated
     85        3  00-Sep-10 07:21:39  Informative(20) 0
.
.
.
```

8

MCAST

Overview

This chapter describes:

- clear cgmp statistics
- clear intelligent-multicast client-port
- clear intelligent-multicast client-port (P220, P550)
- clear intelligent-multicast router-port-vlan
- clear intelligent-multicast session
- clear intelligent-multicast static-client-port
- clear intelligent-multicast static-session
- clear lgmp client statistics
- set cgmp
- set intelligent-multicast
- set intelligent-multicast client-port-pruning time
- set intelligent-multicast router-port vlan
- set intelligent-multicast router-port vlan (P220)
- set intelligent-multicast router-port-pruning
- set intelligent-multicast router-port-pruning time
- set intelligent-multicast session-pruning
- set intelligent-multicast session-pruning time
- set intelligent-multicast static-client-port
- set intelligent-multicast static-client-port (P220)

- set intelligent-multicast static-session
- set lgmp client
- show cgmp statistics
- show intelligent-multicast client-port
- show intelligent-multicast configuration
- show intelligent-multicast router-port
- show intelligent-multicast session
- show intelligent-multicast session (P220)
- show intelligent-multicast static-client
- show intelligent-multicast static-session
- show lgmp client

clear cgmp statistics

Command Mode: Configuration

Description

Clears CGMP snooping statistics.

Command Syntax

To Enable:	`clear cgmp statistics`

Sample Output

This example clears cgmp snooping statistics.

```
Cajun(configure)# clear cgmp statistics
```

clear intelligent-multicast client-port

Command Mode: Configuration

Description

Remove the specified learned client ports from intelligent multicasting.

Command Syntax

To Enable:	`clear intelligent-multicast client-port <session-id> port <mod-port-spec>`

Table 8-1. *Parameters, Keywords, Arguments*

Name	Definition
session-id	The number assigned to the Intelligent Multicast Session at creation. This number can be found using the "show intelligent-multicast session" command
mod-port-spec	The port specifier of the Intelligent Multicast Client port to be removed from configuration.

Sample Output

This example removes learned client ports from intelligent multicast.

```
Cajun(configure)# clear intelligent-multicast client-port 3 port
4/2
```

clear intelligent-multicast client-port (P220, P550)

Command Mode: Configuration

Description

Remove the specified learned client ports from intelligent multicasting from the Cajun P220 and P550.

Command Syntax

To Enable:	`clear intelligent-multicast client-port <session-id> port <p220-port-spec>`

Table 8-2. *Parameters, Keywords, Arguments*

Name	Definition
session-id	The number assigned to the Intelligent Multicast Session at creation. This number can be found using the "show intelligent-multicast session" command
p220-port-spec	The port specifier (for the Cajun P220 and P550) of the Intelligent Multicast Client port to be removed from configuration.

Sample Output

This example removes learned client ports from intelligent multicast.

```
Cajun(configure)# clear intelligent-multicast client-port 3 port
4/2
```

Systems Supported: P220, P550

clear intelligent-multicast router-port-vlan

Command Mode: Configuration

Description

Remove management or learned router ports for intelligent multicasting.

Note: You can only remove one router port at a time. If a router port is configured with "VLAN all," then you must clear it with "VLAN all."

Command Syntax

To Enable:	`clear intelligent-multicast router-port vlan {all|<vlan-id>|name <vlan-name>} port <p220-port-spec>`

Table 8-3. *Parameters, Keywords, Arguments*

Name	Definition
vlan	• **vlan-id** - The numerical ID of a specific VLAN. • **vlan-name** - The ID of the vlan.
port	The port in the multicast session. Specify a particular port on a module - <p220-port-spec>.

Sample Output

```
Cajun(configure)# clear intelligent-multicast router-port vlan all
port 3/4
Multicast Router Port successfully removed
```

Systems Supported: P220, P550

clear intelligent-multicast session

Command Mode: Configuration

Description

Remove the specified learned session from intelligent multicast.

Note: Multicast Sessions that are statically created by the user cannot be removed using this command. This command may only be used to clear dynamically learned Multicast Sessions.

Command Syntax

To Enable:	`clear intelligent-multicast session <session-id>`

Table 8-4. *Parameters, Keywords, Arguments*

Name	Definition
session-id	A number assigned to the Multicast Session when it is created. This number can be found in the "show intelligent-multicast session" display.

Sample Output

This example clears an intelligent multicast session.

```
Cajun(configure)# clear intelligent-multicast session 3
```

clear intelligent-multicast static-client-port

Command Mode: Configuration

Description

Remove the specified static or management clients ports from Intelligent Multicast.

Command Syntax

To Enable:	`clear intelligent-multicast static-client-port {<group-address>|mac-address <mac-address>} vlan { all|<vlan-id>|name <vlan-name>} port <p220-port-spec>`

Table 8-5. *Parameters, Keywords, Arguments*

Name	Definition
group-address	The IP address of the multicast group.
mac-address	The MAC address associated with this entry:
vlan	The keyword for per VLAN commands. • **all|vlan-id** - all VLANS or the numerical ID of a specific VLAN. • **vlan-name** - The ID of the vlan. The keyword for the VLAN name.
port	The port in the multicast session. <p220-port-spec> specifies a particular port or a range of ports on a module.

Sample Output

This example clears static client ports from intelligent multicast .

```
Cajun(configure)# clear intelligent-multicast static-client-port
225.1.1.2 vlan all port 3/2
Multicast Client successfully destroyed
```

Systems Supported: P220, P550

clear intelligent-multicast static-session

Command Mode: Configuration

Description

Remove management sessions for intelligent multicasting.

Command Syntax

To Enable:	`clear intelligent-multicast static-session {<group-address>|mac-address <mac-address>} vlan {all|<vlan-id>|name <vlan-name>}`

Table 8-6. *Parameters, Keywords, Arguments*

Name	Definition
group-address	The IP address of the multicast group.
mac-address	The MAC address associated with this entry:
vlan	The keyword for per VLAN commands.
all	Remove all management router ports. <vlan-id > is the numerical ID of a specific VLAN.
name	The keyword for the VLAN name. <vlan-name> is the ID of the vlan.

Sample Output

This example clears an intelligent-multicast static session .

```
Cajun(configure)# clear intelligent-multicast static-session
225.1.1.2 vlan all
Multicast Session successfully destroyed
```

System Supported: P220, P550

clear lgmp client statistics

Command Mode: Configuration

Description

Clear LGMP client statistics. Omitting the parameters clears the global counters representing all LGMP clients.

Command Syntax

To Enable:	`clear lgmp client statistics [vlan {all|<vlan-id>| name <vlan-name>}]`

Table 8-7. *Parameters, Keywords, Arguments*

Name	Definition
vlan	The keyword for per VLAN commands. • **all -** All VLANS. • **vlan-id** - The numerical ID of a specific VLAN.
name	The keyword for the VLAN name. <vlan-name> is the string ID of the vlan.

Sample Output

This example clears all lgmp server global statistics.

```
Cajun(configure)# clear lgmp server statistics
Global statistics cleared
```

set cgmp

Command Mode: Configuration

Description

Enable or disable CGMP snooping functionality. CGMP snooping is disabled by default.

Command Syntax

To Enable:	`set cgmp <enable|disable>`

Table 8-8. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable CGMP snooping.

Sample Output

This example enables cgmp.

```
Cajun(configure)# set cgmp enable
```

set intelligent-multicast

Command Mode: Configuration

Description

Enable or disable intelligent multicasting. The default state is **enabled**.

Command Syntax

To Enable:	`set intelligent-multicast {enable|disable}`

Table 8-9. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable intelligent multicasting.

Sample Output

This example enables intelligent multicasting.

```
Cajun(configure)# set intelligent-multicast enable
```

set intelligent-multicast client-port-pruning

Command Mode: Configuration

Description

Enable, disable or set client port pruning interval for intelligent multicasting. The default state of this command is disabled.

Command Syntax

To Enable:	`set intelligent-multicast client-port-pruning {enable|disable}`

Table 8-10. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable client port pruning.

Sample Output

This example sets the intelligent-multicast port pruning time to 45 minutes.

```
Cajun(configure)# set intelligent-multicast client-port-pruning
time 45
Client Port Pruning Time successfully set to 45 minutes
```

set intelligent-multicast client-port-pruning time

Command Mode: Configuration

Description

Enable, disable or set client port pruning interval for intelligent multicasting. Intelligent multicast client port pruning removes any multicast client port from configuration that has been determined to be inactive for a specified amount of time. The value range is from 1 minute to 1440 minutes (24 hours) and the the default time is 60 minutes. The default state of this command is **disabled**.

Command Syntax

To Enable:	`set intelligent-multicast client-port-pruning time {<minutes>}`

Table 8-11. *Parameters, Keywords, Arguments*

Name	Definition
minutes	The number of minutes that a dynamic intelligent multicast client port must be inactive before it is pruned by the intelligent multicast functionality.

Sample Output

This example sets the intelligent-multicast port pruning time to 45 minutes.

```
Cajun(configure)# set intelligent-multicast client-port-pruning
time 45
Client Port Pruning Time successfully set to 45 minutes
```

set intelligent-multicast router-port vlan

Command Mode: Configuration

Description

Create or remove management multicast router ports for intelligent multicasting. If a specific VLAN is indicated, a multicast router will only be created on those VLANs to which the port is bound. The default state is **disabled**.

Command Syntax

To Enable:	`set intelligent-multicast router-port vlan {all| <vlan-id>|name <vlan-name>} port <mod-port-spec>`
To Disable:	`clear intelligent-multicast router-port vlan {all| <vlan-id>|name <vlan-name>} port <mod-port-spec>`

Table 8-12. *Parameters, Keywords, Arguments*

Name	Definition
all	Configure all router ports for intelligent multicasting. The <vlan-id> of the VLAN on which the Multicast Router should be created or removed.
name	The keyword for the VLAN name. The <vlan-name> is the name of the VLAN on which the Multicast Router should be created or removed.
port	The port in the multicast session. <mod-port-spec> is the port specifier of the Multicast Router.

Sample Output

This example adds a multicast router port.

```
Cajun(configure)# set intelligent-multicast router-port vlan all
port 3/4
Multicast Router Port successfully added
```

set intelligent-multicast router-port vlan (P220)

Command Mode: Configuration

Description

Create management multicast router ports for intelligent multicasting for the Cajun P220. If a specific VLAN is indicated, a multicast router will only be created on those VLANs to which the port is bound. The default state is disabled.

Command Syntax

To Enable:	`set intelligent-multicast router-port vlan {all| <vlan-id>|name <vlan-name>} port <p220-port-spec>`

Table 8-13. *Parameters, Keywords, Arguments*

Name	Definition
all	Configure all router ports for intelligent multicasting. <vlan-id> is the VLAN ID of the VLAN on which the Multicast Router should be created or removed.
name	The keyword for the VLAN name. <vlan-name> is the name of the VLAN on which the Multicast Router should be created or removed.
port	The port in the multicast session. <p220-port-spec> is the port specifier of the Multicast Router.

Sample Output

This example adds a multicast router port.

```
Cajun(configure)# set intelligent-multicast router-port vlan all
port 3/4
Multicast Router Port successfully added
```

Systems Supported: P220, P550

set intelligent-multicast router-port-pruning

Command Mode: Configuration

Description

Enable or disable intelligent multicast router pruning. Intelligent multicast router pruning removes any multicast router port from configuration that has been determined to be inactive for a specified amount of time. The default state is enabled.

Command Syntax

To Enable:	`set intelligent-multicast router-port-pruning {enable|disable}`

Table 8-14. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable intelligent multicast router pruning.

Sample Output

This example disables router port pruning.

```
Cajun(configure)# set intelligent-multicast router-port-pruning
disable
```

set intelligent-multicast router-port-pruning time

Command Mode: Configuration

Description

Enable or disable intelligent multicast router pruning. Intelligent multicast router pruning removes any multicast router port from configuration that has been determined to be inactive for a specified amount of time. The default state is enabled.

Command Syntax

To Enable:	`set intelligent-multicast router-port-pruning time <seconds>`

Table 8-15. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable intelligent multicast router pruning.
seconds	The number of seconds that a dynamic Intelligent Multicast Router port must be inactive before it is pruned by the Intelligent Multicast functionality. The value range is **10** to **172800**. The default value is **120** seconds.

Sample Output

This example specifies a pruning time of 320 seconds.

```
Cajun(configure)# set intelligent-multicast router-port-pruning
time 320
```

set intelligent-multicast session-pruning

Command Mode: Configuration

Description

Enable or disable session pruning for intelligent multicasting. Intelligent multicast session pruning will remove any multicast session from configuration that has been determined to be inactive for a specified amount of time. By default, intelligent multicast session pruning is enabled.

Command Syntax

To Enable:	`set intelligent-multicast session-pruning {enable|disable }`

Table 8-16. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Select enable or disable to remove stale learned sessions.

Sample Output

This example disables intelligent-multicast session pruning time to 320 seconds.

```
Cajun(configure)# set intelligent-multicast session-pruning
disable
```

set intelligent-multicast session-pruning time

Command Mode: Configuration

Description

Enable or disable session pruning for intelligent multicasting. Intelligent multicast session pruning will remove any multicast session from configuration that has been determined to be inactive for a specified amount of time. By default, intelligent multicast session pruning is enabled.

Command Syntax

To Enable:	`set intelligent-multicast session-pruning time <seconds>`

Table 8-17. *Parameters, Keywords, Arguments*

Name	Definition
seconds	The number of seconds that a dynamic Intelligent Multicast Session must be inactive before it is pruned by the Intelligent Multicast functionality. The value range is **10** to **172800**. The default value is **250** seconds.

Sample Output

This example sets intelligent-multicast session pruning time to 320 seconds.

```
Cajun(configure)# set intelligent-multicast session-pruning time
320
```

set intelligent-multicast static-client-port

Command Mode: Configuration

Description

Create management client ports for Intelligent Multicasting.

Command Syntax

To Enable:	`set intelligent-multicast static-client-port {<group-address>|mac-address <mac-address>} vlan {all|<vlan-id>|name <vlan-name>} port <mod-port-spec>`

Table 8-18. *Parameters, Keywords, Arguments*

Name	Definition
group-address	The multicast IP address of a static multicast session
mac-address	The multicast MAC Address of a static non-IP multicast session.
vlan	The keyword for per VLAN commands. • **all|vlan-id** - all VLANS or the VLAN ID of a static multicast session. • **name|vlan-name** - The name of a VLAN of a static multicast session.
port	The client port in the multicast session. <mod-port-spec> is the port specifier for the static multicast client.

Sample Output

This example sets an intelligent-multicast static-client-port.

```
Cajun(configure)# set intelligent-multicast static-client-port
229.10.10.10 vlan 4 port 3/11
Multicast Client successfully created
```

set intelligent-multicast static-client-port (P220)

Command Mode: Configuration

Description

Create management client ports for intelligent multicasting. (Cajun P220, P550)

Command Syntax

To Enable:	`set intelligent-multicast static-client-port {<group-address>|mac-address <mac-address>} vlan {all|<vlan-id>|name <vlan-name>} port <p220-port-spec>`

Table 8-19. *Parameters, Keywords, Arguments*

Name	Definition
group-address	The multicast IP address of a static multicast session
mac-address	The multicast MAC Address of a static non-IP multicast session.
vlan	The keyword for per VLAN commands. • **all|vlan-id** - all VLANS or the VLAN ID of a static multicast session. • **name|vlan-name** - The name of a VLAN of a static multicast session.
port	The client port in the multicast session. <p220-port-spec> is the port specifier for the static multicast client.

Sample Output

This example sets an intelligent-multicast static-client-port.

```
Cajun(configure)# set intelligent-multicast static-client-port
229.10.10.10 vlan 4 port 3/11
Multicast Client successfully created
```

Systems Supported: P220,P550

set intelligent-multicast static-session

Command Mode: Configuration

Description

Create management sessions for intelligent multicasting.

Command Syntax

To Enable:	`set intelligent-multicast static-session {<group-address>|mac-address <mac-address>} vlan {all|<vlan-id>|name <vlan-name>}`
To Disable:	`clear intelligent-multicast static-session {<group-address>|mac-address <mac-address>} vlan {all|<vlan-id>|name <vlan-name>}`

Table 8-20. *Parameters, Keywords, Arguments*

Name	Definition
group-address	The multicast IP address of the multicast session.
mac-address	The multicast MAC address of the non-IP multicast session.
vlan	The keyword for per VLAN commands. • **all|vlan-id** - all VLANS or the VLAN ID of the VLAN where the multicast session is to be created. • **name|vlan-name** - The name of the VLAN on which the multicast session should be created.
port	The port in the multicast session. <mod-port-spec> specifies a particular port or a range of ports on a module.

Sample Output

This example sets an intelligent-multicast static session.

```
Cajun(configure)# set intelligent-multicast static-session
229.10.10.10 vlan name adams
```

set lgmp client

Command Mode: Configuration

Description

Enable or disable the LGMP client functionality. The default state is **disabled**.

Command Syntax

To Enable:	`set lgmp client {enable|disable}`

Table 8-21. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Enable or disable LGMP client functionality.

Sample Output

This example enables lgmp client.

```
Cajun(configure)# set lgmp client enable
```

show cgmp statistics

Command Mode: User

Description

Display CGMP related statistics.

Command Syntax

To View:	`show cgmp statistics [detailed]`

Table 8-22. *Parameters, Keywords, Arguments*

Name	Definition
detailed	Displays detailed cgmp statistics.

Sample Output

This example shows cgmp statistics:

```
Cajun> show cgmp statistics
CGMP Snooping is currently disabled.

CGMP Packet Reception Stats
===========================
 Join Messages Received ----------- 0
 Leave Messages Received ---------- 0
 Unknown CGMP Messages Received --- 0

CGMP Action Stats
=================
New Sessions Created -------------- 0
New Client Ports Added ------------ 0
Existing Sessions Removed --------- 0
All Sessions Removed -------------- 0
New Router Ports Added ------------ 0
Existing Router Ports Removed ----- 0
```

show intelligent-multicast client-port

Command Mode: User

Description

Display current client ports configured for a specific session in intelligent multicasting.

Command Syntax

To View:	`show intelligent-multicast client-port <session-id>`

Table 8-23. *Parameters, Keywords, Arguments*

Name	Definition
session-id	The number assigned to the multicast session when it is created. This ID is displayed in the **show intelligent-multicast session** command.

Sample Output

```
Cajun> show intelligent-multicast client-port 4
IM Client

Port          Application
----          --------------------
3.4           Router
6.1           Mgmt: 226.0.0.9
```

show intelligent-multicast configuration

Command Mode: User

Description

Display global configuration for intelligent multicasting.

Command Syntax

To View:	`show intelligent-multicast configuration`

Sample Output

This example shows the intelligent-multicast configuration with the default values.

```
Cajun> show intelligent-multicast configuration
Intelligent Multicast Global Configuration
==========================================
  Enable State: Enable
  Automatic Router Port Pruning:
    Enable State: Enable
    Time        : 120 Seconds
  Automatic Session Pruning:
    Enable State: Enable
    Time        : 250 Seconds
  Automatic Client Pruning:
    Enable State: Disable
    Time        : 60 Minutes
```

show intelligent-multicast router-port

Command Mode: User

Description

Display all multicast router ports configured for intelligent multicasting.

Command Syntax

To View:	`show intelligent-multicast router-port`

Sample Output

```
Cajun> show intelligent-multicast router-port
IM Router  VLAN
Port       Name                              Applications
---------  --------------------------------  ------------
6.1        All                               Mgmt

6.3        All                               Mgmt

6.2        foo                               Mgmt

6.4       bar                                    Mgmt
```

show intelligent-multicast session

Command Mode: User

Description

Display intelligent multicast sessions that optionally match specified search criteria. Omitting any criteria displays all configured intelligent multicast sessions.

Command Syntax

To View:	`show intelligent-multicast session [vlan {<vlan-id> |name <vlan-name>}] [{{ip-address <group-address> <ip-mask> }|{ mac-address <wildcard-mac-address>}}] [client-port <mod-port-spec>]`

Table 8-24. *Parameters, Keywords, Arguments*

Name	Definition
vlan	<vlan-id> is the VLAN ID of the session(s) to display.
name	<vlan-name> is the name of the VLAN of the session(s) to display.
ip-address	The IP address associated with the multicast session. • **group-address** - The multicast IP address of the multicast group. • **ip-mask** - The subnet mask used to determine which portions of <group-address> should be matched
mac-address	The MAC address associated with this entry: • **wildcard-mac-address** - The multicast MAC address of the session(s) to display. The wildcard is indicated by a single asterisk (*) before the MAC address.
client-port	The number of client ports in the multicast session. <mod-port-spec> - A client port of a multicast session.

Sample Output

```
Cajun> show intelligent-multicast session
Session
ID            MAC Address       VLAN     ClientsApplications
-------       ----------------  -------- -----------------------
1             01:00:5E:01:01:02  Default 1    Mgmt : 255.1.1.2
2             01:00:5E:01:01:02  Adams   1    Mgmt : 255.1.1.2
3             01:00:5E:01:01:02  Alcott  0    Mgmt : 256.0.0.9
.
.
.
```

show intelligent-multicast session (P220)

Command Mode: User

Description

Display intelligent multicast sessions that optionally match specified search criteria. Omitting any criteria displays all configured intelligent multicast sessions (Cajun P220, P550).

Command Syntax

To View:	`show intelligent-multicast session [vlan {<vlan-id> |name <vlan-name>}] [{{ip-address <group-address> <ip-mask>}|{mac-address <wildcard-mac-address>}}] [ client-port <p220-port-spec>]`

Table 8-25. *Parameters, Keywords, Arguments*

Name	Definition
vlan	<vlan-id> is the VLAN ID of the session(s) to display.
name	<vlan-name> - The name of the VLAN of the session(s) to display.
ip-address	The IP address associated with the multicast session. • **group-address** - The multicast IP address of the multicast group. • **ip-mask** - The subnet mask used to determine which portions of <group-address> should be matched
mac-address	The MAC address associated with this entry: • **wildcard-mac-address** - The multicast MAC address of the session(s) to display. The wildcard is indicated by a single asterisk (*) before the MAC address.
client-port	The number of client ports in the multicast session. <p220-port-spec> - A client port of a multicast session.

Sample Output

```
Cajun> show intelligent-multicast session
Session
ID            MAC Address       VLAN     ClientsApplications
-------       ----------------  -------- -----------------------
1             01:00:5E:01:01:02  Default 1    Mgmt : 255.1.1.2
2             01:00:5E:01:01:02  Adams   1    Mgmt : 255.1.1.2
3             01:00:5E:01:01:02  Alcott  0    Mgmt : 256.0.0.9
.
.
.
```

Systems Supported: P220, P550

show intelligent-multicast static-client

Command Mode: User

Description

Display all management configured client ports for a given session in intelligent multicasting.

Note: If a static session is created with ALL VLANs, then you must specify "VLAN all" to see the clients. If a static session is created with an IP address, then you cannot use the MAC address to see the clients.

Command Syntax

To View:	`show intelligent-multicast static-client {<group-address>|mac-address < mac-address>} vlan {all|<vlan-id>|name <vlan-name>}`

Table 8-26. *Parameters, Keywords, Arguments*

Name	Definition
group-address	The IP address of the multicast group.
mac-address	The MAC address associated with this entry:
vlan	The choices are: • **all** - The static session or client is created for all VLANS. • **vlan-id** - A session or client is created for a specific VLAN only. • **name** - A session or client is created for a specific VLAN only.

Sample Output

```
Cajun>  show intelligent-multicast static-client 225.1.1.2 vlan all
IM Client
Port          Application
----          ------------------
3.2           Mgmt : 225.1.1.2
```

show intelligent-multicast static-session

Command Mode: User

Description

Display all management configured sessions in intelligent multicasting.

Command Syntax

To View:	`show intelligent-multicast static-session`

Sample Output

```
Cajun> show intelligent-multicast static-session
VLAN          MAC Address       IP Address    # Clients
------------ ---------------------------------------------
All           01:00:5E:01:01:02 225.1.1.2     1
All           01:00:5E:01:04:05 225.1.4.5     0
All           01:00:5E:00:00:09 226.0.0.9     1
```

show lgmp client

Command Mode: User

Description

Display current LGMP client and server configuration information or statistics.

Command Syntax

To View:	`show lgmp client {config|statistics [vlan {all|<vlan-id>|name<vlan-name>}]}`

Table 8-27. *Parameters, Keywords, Arguments*

Name	Definition
config|statistics	LGMP client configuration or statistics.
vlan	The VLAN(s) associated with the LGMP server. • **all** - All VLANs. • **vlan-id** - The numerical ID of a specific VLAN.
name	The keyword for VLAN name. <vlan-name> - The string ID of VLAN

Sample Output

```
Cajun> show lgmp client statistics
Global LGMP Client Statistics
=============================
=============================

LGMP Client Message Reception Stats
===================================
 Report --------------------------- 0
 Leave ---------------------------- 0
 End Session ---------------------- 0
 Router Report -------------------- 0
 Router Leave --------------------- 0
 Invalid -------------------------- 0

LGMP Client Intelligent Multicast Session Stats
===============================================
```

```
 New Client Ports Added ----------- 0
 Existing Client Ports Removed ---- 0
 Existing Sessions Removed -------- 0
 New Router Ports Added ----------- 0
 ExistingRouter Ports Removed ----- 0


Cajun> show lgmp server config
LGMP Server Configuration
=============================
 Enable State       : Disable
 Proxy Mode         : Enable
 Server ID Priority : 128
 Router Report Time : 150 seconds
 Robustness Variable: 4
```

9 Module

Overview

This chapter describes:

- set module name
- set module notes
- show module

set module name

Command Mode: Configuration

Description

Set the module name.

Command Syntax

To Enable:	`set module name <mod-num> [<mod-name>]`

Table 9-1. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module whose name is to be cleared or set.
mod-name	Specifies the name of the module. If the module name is not specified, any previous name for the module is cleared.

Sample Output

This example sets the name of the module in slot 3.

```
Cajun(configure)# set module name 3 "MIS dept module"
Module 3 name set
```

This example clears the name of the module in slot 3.

```
Cajun(configure)# set module name 3
Module 3 name cleared
```

Systems Supported: P550, P550R

set module notes

Command Mode: Configuration

Description

Set the notes of a module.

Command Syntax

To Enable:	set module notes <mod-num> [<mod-notes>]

Table 9-2. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module whose notes are to be cleared or set.
mod-notes	Specifies the notes to be assigned to the module. If the module notes are not specified, any previous notes for the module are cleared.

Sample Output

This example sets the notes of the module in slot 3.

```
Cajun(configure)# set module notes 3 "This module was installed on
01/21/99"
Module 3 notes set
```

This example clears the notes of the module in slot 3.

```
Cajun(configure)# set module notes 3
Module 3 notes cleared
```

Systems Supported: P550, P550R

show module

Command Mode: User

Description

Display module information for modules installed on a P550 or P550R. The default state displays information for all modules.

Command Syntax

To Enable:	`show module [<mod-num>]`

Table 9-3. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module whose information is to be displayed.

Sample Output

```
Cajun> show module
Module  Model Number          Base Type      Ports  Fabric Ports
------  --------------------  -------------  -----  -------------------
1       M5500R-SUP            Supervisor     0      1/1, 1/FORE
        Name                              Notes
        ------------------------------  ------------------------------
        Module 1                          Junk
Module  Model Number          Base Type      Ports  Fabric Ports
------  --------------------  -------------  -----  -------------------
3       M5502-1000SX-F        Gigabit        2      3/1, 3/2
        Name                              Notes
        ------------------------------  ------------------------------
        Module 3
Module  Model Number          Base Type      Ports  Fabric Ports
------  --------------------  -------------  -----  -------------------
4       M5502-1000LX-F        Gigabit        2      4/1, 4/2
        Name                              Notes
        ------------------------------  ------------------------------
.
```

Systems Supported: P550, P550R

10 OSPF

Overview

This chapter describes:

- area
- area ase-filter
- area default-cost
- area nssa
- area range
- area stub
- area translate-nssa-to-external
- area virtual-link
- interface
- ip ospf as-boundary router
- ip ospf authentication-key
- ip ospf auto-vlink-create
- ip ospf cost
- ip ospf dead-interval
- ip ospf ext-route-metric
- ip ospf hello-interval
- ip ospf max-paths
- ip ospf message-digest-key md5
- ip ospf packet tracing

- ❒ ip ospf priority
- ❒ ip ospf reset-stats
- ❒ ip ospf retransmit-interval
- ❒ ip ospf router-id
- ❒ ip ospf transmit-delay
- ❒ network area
- ❒ router ospf
- ❒ show ip ospf
- ❒ show ip ospf database
- ❒ show ip ospf interface
- ❒ show ip ospf neighbor
- ❒ show ip ospf virtual-links
- ❒ timers lsa-group-pacing
- ❒ timers spf

area

Command Mode: Router-OSPF

Description

To define an OSPF Area. To remove an area, use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id>`
To Disable:	`[no] area <area-id>`

Table 10-1. *Parameters, Keywords, Arguments*

Name	Definition
area-id	IP address that represents the area-id for the system.

area ase-filter

Command Mode: Router-OSPF

Description

Enables the filtering of type 3 ASE LSAs into an OSPF Area. To disable the filtering of type 3 ASE LSAs, use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id> ase-filter`
To Disable:	`[no] area <area-id> ase-filter`

Table 10-2. *Parameters, Keywords, Arguments*

Name	Definition
area-id	IP address that represents the area-id for the system.

area default-cost

Command Mode: Router-OSPF

Description

Defines the cost for routes advertised into stub area by an area border router. To restore the default value, use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id> default-cost <cost>`
To Disable:	`[no] area <area-id> default-cost`

Table 10-3. *Parameters, Keywords, Arguments*

Name	Definition
area-id	A decimal value or IP address that identifies an OSPF area. Use **no area** <area-id> to remove an area from the software configuration.
cost	A cost value of the area.

Sample Output

```
Cajun45(configure router:ospf)# area 2.0.0.0 default-cost 3
Cajun45(configure router:ospf)# no area 2.0.0.0 default-cost
```

area nssa

Command Mode: Router-OSPF

Description

Configure an area as a Not So Stubby Area (NSSA). To remove the NSSA distinction from the area, use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id> nssa`
To Disable:	`[no] area <area-id> nssa`

Table 10-4. *Parameters, Keywords, Arguments*

Name	Definition
area-id	A decimal value or IP address that identifies an OSPF area. Use **no area** <area-id> to remove an area from the software configuration.

Sample Output

```
Cajun45(configure router:ospf)# area 2.0.0.0 nssa
Cajun45(configure router:ospf)# no area 2.0.0.0 nssa
```

area range

Command Mode: Router-OSPF

Description

To consolidate and summarize routes at an area boundary, use the area range router configuration command. To disable this function, use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id> range <ip-address> <mask> [no-advertisement]`
To Disable:	`[no] area <area-id> range <ip-address> <mask>`

Table 10-5. *Parameters, Keywords, Arguments*

Name	Definition
area-id	IP address that represents the area-id for the system.
ip-address	IP address of the area range.
mask	IP address of the mask for the area range.

area stub

Command Mode: Router-OSPF

Description

To define an area as a stub area. Use the **no** form of this command to remove the stub area distinction.

Command Syntax

To Enable:	`area <area-id> stub`
To Disable:	`[no] area <area-id> stub`

Table 10-6. *Parameters, Keywords, Arguments*

Name	Definition
area-id	IP address that represents the area-id for the system.

area translate-nssa-to-external

Command Mode: Router-OSPF

Description

Enables the translation of type 7 LSAs into type 5. To disable this feature use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id> translate-nssa-to-external`
To Disable:	`[no]area <area-id> translate-nssa-to-external`

Table 10-7. *Parameters, Keywords, Arguments*

Name	Definition
area-id	IP address that represents the area-id for the system.

area virtual-link

Command Mode: Router-OSPF

Description

To define an OSPF virtual link, use the area virtual-link router configuration command with the optional parameters. To remove a virtual link, use the **no** form of this command.

Command Syntax

To Enable:	`area <area-id> virtual-link <router-id> [hello-interval <seconds>] [retransmit-interval <seconds>] [dead-interval <seconds>] [{authentication-key <key> | message-digest-key <key-id> md5 <key>}]`
To Disable:	`[no] area <area-id> virtual-link <router-id> [hello-interval <seconds>] [retransmit-interval <seconds>] [dead-interval <seconds>] [{authentication-key <key> | message-digest-key <key-id> md5 <key>}]`

Table 10-8. *Parameters, Keywords, Arguments*

Name	Definition
area-id	IP address that represents the area-id for the system.
router-id	Router ID associated with the virtual link neighbor. The router ID appears in the show ip ospf display. It is internally derived by each router from the router's interface IP addresses. This value must be entered in the format of an IP address. There is no default.
hello-interval <seconds>	Time in seconds between the hello packets that the Cisco IOS software sends on an interface. Unsigned integer value to be advertised in the software's hello packets. The value must be the same for all routers and access servers attached to a common network. The default is 10 seconds.

retransmit-interval <seconds>	Time in seconds between link state advertisement retransmissions for adjacencies belonging to the interface. Expected round-trip delay between any two routers on the attached network. The value must be greater than the expected round-trip delay. The default is 5 seconds.
dead-interval <seconds>	Time in seconds that a software's hello packets are not seen before its neighbors declare the router down. Unsigned integer value. The default is four times the hello interval, or 40 seconds. As with the hello interval, this value must be the same for all routers and access servers attached to a common network.
authentication-key <key>	Password to be used by neighboring routers. Any continuous string of characters that you can enter from the keyboard up to 8 bytes long. This string acts as a key that will allow the authentication procedure to generate or verify the authentication field in the OSPF header. This key is inserted directly into the OSPF header when originating routing protocol packets. A separate password can be assigned to each network on a per-interface basis. All neighboring routers on the same network must have the same password to be able to route OSPF traffic.
message-digest-key <key-id> md5 <key>	Key identifier and password to be used by neighboring routers and this router for MD5 authentication. The keyid is a number in the range 1 to 255. The key is an alphanumeric string of up to 16 characters. All neighboring routers on the same network must have the same key identifier and key to be able to route OSPF traffic. There is no default value.

interface

Command Mode: Configuration

Description

Use the interface global configuration command to configure an interface type and enter interface configuration mode. The **no** form of this command deletes an interface with the name specified and does not enter the user into the interface configuration mode.

Command Syntax

To Enable:	`interface <interface-name>`
To Disable:	`[no] interface <interface-name>`

Table 10-9. *Parameters, Keywords, Arguments*

Name	Definition
interface-name	A name for the interface you are attempting to configure or create. This name can be series of characters from 1 - 32 characters long.

ip ospf as-boundary router

Command Mode: Configuration

Description

Specify if this router should be designated as an Autonomous-system boundary router. Use the **no** form of this command to disable AS Boundary Router status. The default state is **disabled**.

Command Syntax

To Enable:	`ip ospf as-boundary router`
To Disable:	`[no] ip ospf as-boundary router`

ip ospf authentication-key

Command Mode: Interface

Description

Assign a password to be used by neighboring routers that are using OSPF's simple password authentication. To remove a previously assigned OSPF password, use the **no** form of this command.

Command Syntax

To Enable:	`ip ospf authentication-key <password>`
To Disable:	`[no] ip ospf authentication-key`

Table 10-10. *Parameters, Keywords, Arguments*

Name	Definition
password	Any continuous string of characters that can be entered from the keyboard up to 8 bytes in length.

Sample Output

```
Cajun(config-I:intf3)#ip ospf authentication-key “abc”
Cajun(config-I:intf3)#no ip ospf authentication-key
```

ip ospf auto-vlink-create

Command Mode: Configuration

Description

Enables the automatic creation of virtual links. Use the **no** form of this command to disable this behavior.

Command Syntax

To Enable:	`ip ospf auto-vlink-create`
To Disable:	`[no] ip ospf auto-vlink-create`

ip ospf cost

Command Mode: Interface

Description

Explicitly specify the cost of sending a packet on an interface. The **no** form of this command sets the cost to default value of **1**.

Command Syntax

To Enable:	`ip ospf cost <cost>`
To Disable:	`[no] ip ospf cost <cost>`

Table 10-11. *Parameters, Keywords, Arguments*

Name	Definition
cost	Unsigned integer value expressed as the link state metric. It can be a value in the range 1 to 65535.

ip ospf dead-interval

Command Mode: Interface

Description

Set how long hello packets must not have been seen before its neighbors declare the router down. To return to the default time, use the **no** form of this command.

Command Syntax

To Enable:	`ip ospf dead-interval <seconds>`
To Disable:	`[no] ip ospf dead-interval`

Table 10-12. *Parameters, Keywords, Arguments*

Name	Definition
seconds	Time in seconds of how long hello packets must be unseen before the neighbor declares the router down.

ip ospf ext-route-metric

Command Mode: Configuration

Description

Set the metric type used for external routes to type1 or type2. Use the **no** form of this command to restore default values. The default values are:

- ❒ local (type1)
- ❒ rip (type2)
- ❒ static-hp (type2)
- ❒ static-lp (type-2)

Command Syntax

To Enable:	`ip ospf ext-route-metric {local|rip|static-hp|static-lp} {type1|type2}`
To Disable:	`[no] ip ospf ext-route-metric {local|rip|static-hp|static-lp} {type1|type2}`

Table 10-13. *Parameters, Keywords, Arguments*

Name	Definition
local	Metric type.
rip	Metric type.
static-hp	Metric type.
static-lp	Metric type.

ip ospf hello-interval

Command Mode: Interface

Description

Specify the interval between hello packets that the router sends on the interface.

Command Syntax

To Enable:	`ip ospf hello-interval <seconds>`
To Disable:	`[no] ip ospf hello-interval`

Table 10-14. *Parameters, Keywords, Arguments*

Name	Definition
seconds	Unsigned integer that specifies the interval in seconds. The value must be the same for all nodes on a specific network. The no form of this command sets the hello interval to default value of 10 seconds.

ip ospf max-paths

Command Mode: Configuration

Description

To configure the maximum number of SPF paths OSPF can use. Use the **no** form of this command to restore the default value (**640**).

Command Syntax

To Enable:	`ip ospf max-paths <paths>`
To Disable:	`[no] ip ospf max-paths <paths>`

Table 10-15. *Parameters, Keywords, Arguments*

Name	Definition
paths	The SPF paths OSPF can use.

ip ospf message-digest-key md5

Command Mode: Interface

Description

Enable OSPF MD5 authentication.

Command Syntax

To Enable:	`ip ospf message-digest-key <keyid> md5 <key>`
To Disable:	`[no] ip ospf message-digest-key <keyid> md5 <key>`

Table 10-16. *Parameters, Keywords, Arguments*

Name	Definition
keyid	An identifier in the range 1 to 255.
key	Alphanumeric password of up to 16 bytes. The no form of this command sets the authentication to default value of none.

ip ospf packet tracing

Command Mode: Configuration

Description

To enable or disable ospf packet tracing.

Command Syntax

To Enable:	`ip ospf packet tracing`
To Disable:	`[no] ip ospf packet tracing`

ip ospf priority

Command Mode: Interface

Description

Set the router priority, which helps determine the designated router for this network. To return to the default value, use the **no** form of this command.

Command Syntax

To Enable:	`ip ospf priority <number>`
To Disable:	`[no] ip ospf priority <number>`

Table 10-17. *Parameters, Keywords, Arguments*

Name	Definition
number	8-bit unsigned integer that specifies the priority. The range is from 0 to 255.

ip ospf reset-stats

Command Mode: Configuration

Description

Reset the ospf global statistics.

Command Syntax

To Enable:	`ip ospf reset-stats`

ip ospf retransmit-interval

Command Mode: Interface

Description

Specify the time between link state advertisement retransmissions for adjacencies belonging to the interface. To return to the default value, use the **no** form of this command.

Command Syntax

To Enable:	`ip ospf retransmit-interval <seconds>`
To Disable:	`[no] ip ospf retransmit-interval <seconds>`

Table 10-18. *Parameters, Keywords, Arguments*

Name	Definition
seconds	Time in seconds between retransmissions. It must be greater than the expected round-trip delay between any two routers on the attached network. The range is 1 to 65535 seconds. The default is 5 seconds.

ip ospf router-id

Command Mode: Interface

Description

To set the router-id for the system, use the ip ospf router-id command. Use the **no** form of this command, to Revert to the system default (the lowest IP address configured on the system).

Note: OSPF must be disabled for this command to take effect. If OSPF is enable on the system the change will not take effect until OSPF is stopped and started again.

Command Syntax

To Enable:	`ip ospf router-id <router-id>`
To Disable:	`[no] ip ospf router-id <router-id>`

Table 10-19. *Parameters, Keywords, Arguments*

Name	Definition
router-id	IP address that represents the router-id for the system.

ip ospf transmit-delay

Command Mode: Interface

Description

Set the estimated time it takes to transmit a link state update packet on the interface. To return to the default value, use the **no** form of this command.

Command Syntax

To Enable:	`ip ospf transmit-delay <seconds>`
To Disable:	`[no] ip ospf transmit-delay`

Table 10-20. *Parameters, Keywords, Arguments*

Name	Definition
seconds	Time in seconds that it takes to transmit a link state update.The range is 1 to 65535 seconds. The default is 1 second.

network area

Command Mode: Router-OSPF

Description

To define the interfaces on which OSPF runs and to define an area ID for those interfaces. To disable OSPF routing for interfaces defined with the <ip-address> <wildcard-mask> pair, use the **no** form of this command.

Command Syntax

To Enable:	`network <ip-address> <wildcard-mask> area <area-id>`
To Disable:	`[no] network <ip-address> <wildcard-mask> area <area-id>`

Table 10-21. *Parameters, Keywords, Arguments*

Name	Definition
ip address	IP address of the interface on which OSPF runs.
wildcard-mask	Wild-card mask of the interface.
area-id	Area ID for the interface.

Sample Output

`Cajun(configure)#` **no network 100.77.45.0**

router ospf

Command Mode: Configuration

Description

Enable OSPF protocol on this system. The **no** form of this command disables it globally. The default is **disabled**.

Command Syntax

To Enable:	`router ospf`
To Disable:	`[no] router ospf`

Sample Output

This example enables OSPF routing and assigns a process number of 50.

```
Cajun(configure)# router ospf 50
```

show ip ospf

Command Mode: User

Description

Display general information about OSPF routing.

Command Syntax

To Enable:	`show ip ospf`

Sample Output

```
Cajun45(configure)# show ip ospf
        Routing Process OSPF with ID 45.0.0.0
        Supports only single TOS0 0 route
        It is an area border and autonomous system boundary router
        Redistributing External Routes from
        rip with metric TYPE 2
        Number of areas in this router is 2
        Area 0.0.0.0
        Number of Interfaces in this area 2
        SPF algorithm executed 53 times
        Area 1.0.0.0
        Number of Interfaces in this area 1
        SPF algorithm executed 47 times
Cajun45(configure)#
```

show ip ospf database

Command Mode: User

Description

Use the show ip ospf database EXEC command to display lists of information related to the OSPF database for a specific router.

Command Syntax

To Enable:	`show ip ospf database [{asbr-summary|router| network|summary|nssa-external|external}]`

Table 10-22. *Parameters, Keywords, Arguments*

Name	Definition
asbr-summary	Displays information only about the autonomous system boundary router summary LSAs. Optional.
external	Displays information only about the external LSAs. Optional.
network	Displays information only about the network LSAs. Optional.
nssa-external	Displays information only about the NSSA external LSAs. Optional.
router	Displays information only about the router LSAs. Optional.

Sample Output

```
Cajun> show ip ospf database
OSPF Router with ID 10.0.1.45
Area IDType   LSA IDRouter IDSequenceage Cksm
-------       ----- ------  ----------    -----------------
0.0.0.0       1     10.0.1.4510.0.1.45    8000000e2965375
0.0.0.0       3     10.0.2.010.0.1.45     8000000e33552b8
0.0.0.0       1     10.0.1.4510.0.1.45    8000000b2976268
0.0.0.0       3     10.0.1.010.0.1.45     8000000e3365dae
0.0.0.0       3     0.0.0.0 10.0.1.45     800000023312bf8
```

show ip ospf interface

Command Mode: User

Description

Display the OSPF-related interface information.

Command Syntax

To Enable:	`show ip ospf interface [<interface-name>]`

Table 10-23. *Parameters, Keywords, Arguments*

Name	Definition
interface-name	The OSPF interface name.

Sample Output

```
Cajun45(configure)# show ip ospf interface

Ethernet intf5 is up, line protocol is up
Internet Address 10.0.5.45, Mask 255.255.255.0, Area 0.0.0.0
AS Router ID 45.0.0.0
Network Type BROADCAST, COST 1
State BACKUP-DR, Priority 1
DRId 43.0.0.0, IpAddress 10.0.5.43
BDR ipAddress 10.0.5.45
Timer Intervals Configured:
Hello 10
Dead 40
wait 40
Retransmit 5
Transit 1
Neighbor count 1, Adjacent Neighbor count 1
Adjacent with neighbor 43.0.0.0 neighbor's ipaddr 10.0.5.43

Ethernet intf3 is up, line protocol is up
Internet Address 10.0.3.45, Mask 255.255.255.0, Area 0.0.0.0
AS Router ID 45.0.0.0
Network Type BROADCAST, COST 4
State BACKUP-DR, Priority 1
DRId 43.0.0.0, IpAddress 10.0.3.43
BDR ipAddress 10.0.3.45
```

```
Timer Intervals Configured:
        Hello 10
        Dead 40
        wait 40
        Retransmit 5
        Transit 1
        Neighbor count 1, Adjacent Neighbor count 1
        Adjacent with neighbor 43.0.0.0 neighbor's ipaddr 10.0.3.43

Ethernet intf6 is up, line protocol is up
Internet Address 10.0.6.45, Mask 255.255.255.0, Area 1.0.0.0
AS Router ID 45.0.0.0
Network Type BROADCAST, COST 1
State BACKUP-DR, Priority 1
DRId 43.0.0.0, IpAddress 10.0.6.43
BDR ipAddress 10.0.6.45
Timer Intervals Configured:
Hello 10
Hello 10
        Dead 40
        wait 40
        Retransmit 5
        Transit 1
         Neighbor count 1, Adjacent Neighbor count 1
        Adjacent with neighbor 43.0.0.0 neighbor's ipaddr 10.0.3.43
Cajun45(configure)# Neighbor count 0
```

show ip ospf neighbor

Command Mode: User

Description

Display OSPF-neighbor information on a per-interface basis.

Command Syntax

To Enable:	`show ip ospf neighbor [<interface-name>] [<neighbor-id>] [detail]`

Table 10-24. *Parameters, Keywords, Arguments*

Name	Definition
interface-name	The OSPF interface name.
neighbor-id	Neighbor ID.
detail	Displays all neighbors given in detail (list all neighbors).

Sample Output

```
Cajun45(configure)# show ip ospf neighbor
    Nbr-Id        Priority      State       Router ID        Type
--------------- ---------- ---------- --------------- ----------
43.0.0.0        1          FULL       10.0.5.43       BROADCAST
43.0.0.0        1          FULL       10.0.3.43       BROADCAST
43.0.0.0        1          FULL       10.0.6.43       BROADCAST
Cajun45(configure)#
```

show ip ospf virtual-links

Command Mode: User

Description

Display parameters about and the current state of OSPF virtual links.

Command Syntax

To Enable:	`show ip ospf virtual-links`

Sample Output

```
Cajun45(configure)# show ip ospf virtual-link

      Virtual link to router 43.0.0.0 is up
      Transit area 1.0.0.0 via interface, Cost of using 1
      Transit Delay is 1 seconds
      Timer Intervals Configured:
      Hello 10
      Dead 40
      wait 40
      Retransmit 5
      Transit 1
```

timers lsa-group-pacing

Command Mode: Configuration

Description

The number of LSAs that should be processed at one time, during a SPF calculation. Use the **no** form of this command to restore the default value.

This command should assist the user in gauging how much CPU time is devoted to the SPF calculation at one time.

Command Syntax

To Enable:	`timers lsa-group-pacing <lsa-group-size>`
To Disable:	`[no] timers lsa-group-pacing <lsa-group-size>`

Table 10-25. *Parameters, Keywords, Arguments*

Name	Definition
lsa-group-size	The link state advertisement group size.

timers spf

Command Mode: Configuration

Description

To configure the delay between runs of OSPF's SPF calculation. Use the **no** form of this command to restore the default (**3 seconds**).

Command Syntax

To Enable:	`timers spf <spf-holdtime>`
To Disable:	`[no] timers spf`

Table 10-26. *Parameters, Keywords, Arguments*

Name	Definition
spf-holdtime	The time in seconds of the delay between runs of OSPF's SPF calculation.

11

Policy

Overview

This chapter describes:

- ❒ ip access-group
- ❒ ip access-list
- ❒ show access-group
- ❒ show access-lists
- ❒ show ip access-lists

ip access-group

Command Mode: Configuration

Description

Configure forwarding control with an access list name. The **no** form of this command removes an access list name from forwarding control. The default is to permit. Cisco's version of this command is an interface command mode.

Command Syntax

To Enable:	`ip access-group <access-list-name> [default-action-deny]`
To Disable:	`[no] ip access-group`

Table 11-1. *Parameters, Keywords, Arguments*

Name	Definition
access-list-name	The name of the access list for forwarding control.
default-action-deny	Specifies the default action of "deny" if no access rule in the active access list matches the packet.

Sample Output

This example applies the access-list **fwdrules** to forwarding.

```
Cajun(configure)# ip access-group fwdrules
```

System Supported: P550R

ip access-list

Command Mode: Configuration

Description

Define a standard IP access list. The **no** form of this command removes a standard access list. The default is to deny.

Command Syntax

To Enable:	`ip access-list <access-list-name> <access-list-index> {permit|deny|fwd[1-8]} {<source-ip-addr> [<source-wildcard>] |any|host <source-ip-addr>}`
To Disable:	`[no] ip access-list <access-list-name> [<access-list-index>]`

Table 11-2. *Parameters, Keywords, Arguments*

Name	Definition
access-list name	The access list name. Decimal numbers from **1** to **99** inclusive indicate an access list type of standard.
access-list index	The index of a specific access list rule entry.
permit|deny|`fwd1-8`	• **permit** - Allows access when conditions match. • **deny** - Does not permit access when conditions match. • **fwd1-8** - Forwards traffic with the specified priority level [**1-8**].
source-ip-addr	Network number or host from which the packet is sent. The two ways to specify source are: 1. Use a 32-bit quantity in four-part, dotted-decimal format. 2. Use **host source** as an abbreviation for source and a **source-wildcard** of **source** 0.0.0.0.

source-wildcard	Wildcard bits applied to the source. The two ways to specify source-wildcard are: 1. Use a 32-bit quantity in four-part, dotted-decimal format. Place ones in the bit positions to ignore. 2. Use **host source** for **source** and **source-wildcard** is **source 0.0.0.0**.
any	Use the keyword **any** as an abbreviation for a **source** and **source-wildcard** of **0.0.0.0** 255.255.255.255.
host	The host for the access list.

Sample Output

This example creates an access list that allows access only for those hosts on the two specified networks. The wildcard bits apply to the host portions of the network addresses. Any host with a source address that does not match the access list statements is rejected.

```
Cajun(configure)# access-list 1 permit 100.25.12.3  0.255.255.255
Cajun(configure)# access-list 1 permit 155.24.34.5  0.0.255.255
```

System Supported: P550R

show access-group

Command Mode: User

Description

Display information about configured access groups.

Command Syntax

To Enable:	`show access-group`

Sample Output

```
Cajun> show access-group
```

System Supported: P550R

show access-lists

Command Mode: User

Description

Display the contents of current access lists. The system displays **all access lists** by default.

Command Syntax

To Enable:	`show access-lists [<access-list-name>]`

Table 11-3. *Parameters, Keywords, Arguments*

Name	Definition
access-list-name	The name of a specific access list to be displayed.

Sample Output

```
Cajun> show access-lists
access-list 1 1 deny 0.0.0.0 255.255.255.255
access-list 100 12 deny ip 0.0.0.0 255.255.255.255 0.0.0.0
255.255.255.255
```

show ip access-lists

Command Mode: User

Description

Display the contents of current IP access lists. The system displays **all access lists** by default.

Command Syntax

To Enable:	`show ip access-lists [<access-list-name>]`

Table 11-4. *Parameters, Keywords, Arguments*

Name	Definition
access-list-name	The name of a specific IP access list to be displayed.

Sample Output

```
Cajun> show ip access-lists
access-list 1 1 deny 0.0.0.0 255.255.255.255
access-list 100 12 deny ip 0.0.0.0 255.255.255.255 0.0.0.0
255.255.255.255
```

System Supported: P550R

12 [redacted]

Port

Overview

This chapter describes:

- clear port counters
- {set|clear}port huntgroup
- {set|clear} port mirror
- set port 3com-mapping-tables
- set port allow-learning
- set port auto-negotiation
- set port auto-negotiation-duplex-advertisement
- set port auto-negotiation-speed-advertisement
- set port auto-vlan-create
- set port category
- set port disable
- set port duplex
- set port enable
- set port fast-start
- set port flow-control
- set port frame-tags
- set port known-mode
- set port name
- set port pace-priority-mode

- set port rate-limit-burst-size
- set port rate-limit-mode
- set port rate-limit-rate
- set port remote-fault-detect
- set port spanning-tree-mode
- set port speed
- set port trunking-format
- set port vlan
- set port vlan-binding-method
- set port vtp-snooping
- show port
- show port counters
- show port mirror
- show port status
- transmit-interface

clear port counters

Command Mode: Configuration

Description

Clears port ethernet statistics counters. Omitting input clears all port counters on the switch. Selecting a mod-num clears all port counters on the module. By default, the counters of all ports in the switch chassis are cleared.

Command Syntax

To Enable:	`clear port counters [{<mod-num>|<mod-swport-spec>}]`

Table 12-1. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module whose port counters are to be cleared. (Valid on P550 and P550R.)
mod-port-spec	Specifies a particular port whose counters are to be cleared.

Sample Output

This example clears the counters for all the ports on the module in slot 3 of a P550 or P550R.

```
Cajun(configure)# clear port counters
Module 3 ports counters cleared
```

This example clears the counters of port 7 on the module in slot 5 of a P550 or P550R.

```
Cajun(configure)# clear port counters 5/7
Port 5/7 counters cleared
```

This example clears the counters on a P220 gigabit port named G1.

```
Cajun(configure)# clear port counters G1
Port G1 counters cleared
```

{set|clear}port huntgroup

Command Mode: Configuration

Description

Set or clear the huntgroup assignment for a specified switch port.

Command Syntax

To Enable:	`set port huntgroup {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]<huntgroup-name>`
To Disable:	`clear port huntgroup {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]`

Table 12-2. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module in the Cajun P550 or Cajun P550R chassis which, if specified alone, sets or clears the huntgroup assignment of every switch port on the module.
mod-swport-range	Specifies a switch port or a range of switch ports whose huntgroup assignments are set or cleared.
huntgroup-name	Specifies the name of a defined huntgroup.

Sample Output

This example sets the huntgroup assignment of switch port 1 on the module in slot 5 of a Cajun P550 or P550R to huntgroup_sales.

```
Cajun(configure)# set port huntgroup 5/1 huntgroup_sales
Port huntgroup set: 5/1.
```

This example clears the huntgroup assignments for all switch ports on the module in slot 3 of a Cajun P550 or P550R.

```
Cajun(configure)# clear port huntgroup 3
Port huntgroup cleared: 3/1,3/2.
```

This example clears the huntgroup assignments for the Cajun P220 Fast Ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# clear port huntgroup 7-11,G1,A2-A4
Port huntgroup cleared: 7,8,9,10,11,G1,A2,A3,A4.
```

{set|clear} port mirror

Command Mode: Configuration

Description

Set or clear port mirroring configuration for a specific source port or range.

Command Syntax

To Enable:	`set port mirror <mod-port-range> source-port <mod-port-range> mirror-port <mod-port-spec> sampling {always | disable | periodic } [max-packets-sec <max-packets-sec-value>] [piggyback-port <mod-port-spec>]`
To Disable:	`clear port mirror <mod-port-range>`

Table 12-3. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-range	Specifies a mirror port range. The first mod-port-range in the command string is the port mirror rule identifier. It should be the physical port range for the rules associated fabric port. The source-port mod-port-range is the single port or the complete physical port range for the fabric port under investigation.
mod-port-spec	Specifies a particular port.
mirror-port	Port from which you want to send the traffic. This port can be on another module in the switch.
piggyback-port	The port that is used for bi-directional port mirroring. The specified port is unavailable for other uses.

sampling	Specifies how source port traffic is to be sampled (always,disabled or periodic based on max-packets-sec).
max-packets-sec	The maximum number of packets per second that are served by the mirror port. Only used when sampling is set to periodic. Valid values are 0, and 52 to 1,000,000. **Note:** To mirror inbound traffic only, select a source port and a mirror port, not a piggyback port.

Sample Output

This example sets a port mirror sampling rule for a single source port on a Cajun P550 M5520-100TX that has 2 fabric ports.

```
Cajun(configure)# set port mirror 4/1-10 source-port 4/2
mirror-port 4/3 sampling always piggyback-port 4/4
Port mirroring rule configured.
```

This example sets a port mirror sampling rule for a source port range, allowing all physical ports on a fabric port, on a Cajun P550 M5520-100TX that has 2 fabric ports.

```
Cajun(configure)# set port mirror 4/1-10 source-port 4/2
mirror-port 4/3 sampling always piggyback-port 4/4
Port mirroring rule configured.
```

This example clears a port mirror sampling rule.

```
Cajun(configure)# clear port mirror 4/1-10
Remove succeeded.
```

set port 3com-mapping-table

Command Mode: Configuration

Description

Sets the 3Com mapping table for a specified switch port or all switch ports on a specified module.

Command Syntax

To Enable:	`set port 3com-mapping-table {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}] <table-name>`

Table 12-4. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the 3Com Mapping Table assignment of each switch is to be set.
mod-port-range	Specifies a range of switch ports whose 3Com Mapping Table assignment is to be set.
table-name	Specifies the name of the 3Com mapping table.

Sample Output

This example sets the 3Com Mapping Table assignment for all switch ports on the module in slot 3 of a Cajun P550 or P550R.

```
Cajun(configure)# set port 3com-mapping-table 3 3ComDefault
Port 3Com-mapping-table set: 3/1,3/2
```

This example sets the 3Com Mapping Table assignment for the P220 fast ethernet switch ports 7 through 11, the P220 G1 gigabit port, and the P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port 3com-mapping-table 7-11, G1, A2-A4
3ComDefault
Port 3Com-mapping-table set: 7,8,9,10,11,G1,A2,A3,A4
```

set port allow-learning

Command Mode: Configuration

Description

Disables or enables learning for a specified switch port or all switch ports on a specified module.

Command Syntax

To Enable:	`set port allow-learning {<mod-num>|<mod-swport-range>}[...,{<mod-num>| <mod-swport-range>}]{disable|enable}`

Table 12-5. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the ability of every switch port on that module to learn new VLANs is enabled or disabled.
mod-port-range	Specifies a range of switch ports whose ability to learn new VLANs is enabled or disabled.
disable|enable	Disables or enables VLAN learning for a specified switch ports.

Sample Output

This example enables VLAN learning for the second switch port on the module in slot 3 and switch ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port allow-learning 3/2,5/7-11 enable
Port allow-learning set: 3/2,5/7,5/8,5/9,5/10,5/11
```

This example disables VLAN learning for the P220 fast etherseitch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port allow-learning 7-11 enable,G1,A2-A4
disable
Port allow-learning set: 7,8,9,10,11,G1,A2,A3,A4
```

set port auto-negotiation

Command Mode: Configuration

Description

Use the set port auto-negotiation command to enable or disable auto negotiation on the specified port or ports.

Command Syntax

To Enable:	`set port auto-negotiation {<mod-num>|<mod-port-range>}[...,{<mod-num>| <mod-port-range>}]{disable | enable}`

Table 12-6. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies a module number where auto negotiation for every fast ethernet port on that module is enabled or disabled.
mod-port-range	Specifies a range of fast ethernet ports whose ability for auto negotiation is enabled or disabled.
disable|enable	Disable or enable port auto negotiation.

Sample Output

This example enables auto negotiation for the second fast ethernet port and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port auto-negotiation 5/2,5/7-11 enable
Port auto-negotiation enable set: 5/2,5/7,5/8,5/9,5/10,5/11
```

This example disables auto negotiation for the P220 fast ethernet switch ports 7-11, and the P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port auto-negotiation 7-11,A2-A4 disable
Port auto-negotiation disable set: 7,8,9,10,11,A2,A3,A4
```

set port auto-negotiation-duplex-advertisement

Command Mode: Configuration

Description

Use the set port auto-negotiation-duplex-advertisement command to configure negotiation and advertisement of the duplex capability for a specified port or ports.

Command Syntax

To Enable:	`set port auto-negotiation-duplex-advertisement {<mod-num>|<mod-port-range>}[...,{<mod-num>| <mod-port-range>}] {full/half-duplex|half-duplex}`

Table 12-7. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where auto negotiation and advertisement of the duplex capability for every fast ethernet port on that module is set to support full or half duplex operations, or just half duplex operations.
mod-port-range	Specifies a range of fast ethernet port whose ability for auto negotiation and advertisement of their duplex capability is set to support full or half duplex operations or just half duplex operations.
full/half-duplex |half-duplex	Configure the duplex type of a port or range of ports. • **full/half duplex** - Specifies that full- or half-duplex modes may be supported. • **half-duplex** - Specifies that half-duplex mode is the only mode supported.

Sample Output

This example sets the auto negotiation and advertisement of the duplex capability to full or half-duplex mode for the second fast ethernet port and ports 7 through 11 on the module in slot 5 or a Cajun P550 or P550R.

```
Cajun(configure)# set port auto-negotiation-duplex-advertisement
5/2,5/7-11 full/half duplex
Port auto-negotiation duplex advertisement set:
5/2,5/7,5/8,5/9,5/10,5/11
```

This example sets the auto negotiation and advertisement of the duplex capability to half-duplex mode for the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port auto-negotiation-duplex-advertisement
7-11,A2-A4 half-duplex
Port auto-negotiation diplex advertisement set:
7,8,9,10,11,A2,A3,A4
```

set port auto-negotiation-speed-advertisement

Command Mode: Configuration

Description

Set the auto negotiation and the speed capability advertisement of fast ethernet ports to support speeds of 10Mbps, 100Mbps, or either.

Command Syntax

To Enable:	`set port auto-negotiation-speed-advertisement {<mod-num>|<mod-port-range>}[...,{<mod-num>|<mod-port-range>}] {10Mbps|100Mbps|10/100Mbps}`

Table 12-8. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the auto negotiation and advertisement of the speed capability for every fast ethernet port is set to support either 10Mbps or 100Mbps, or both.
mod-port-range	Specifies a range of fast ethernet ports whose ability for auto negotiation and advertisement of their speed capability is set to support either 10 Mbps, 100Mbps or both.
10Mbps|100Mbps|10/100Mbps	Auto negotiation speed options.

Sample Output

This example sets the auto negotiation and advertisement of the speed capability as either 10 Mbps or 100 Mbps for the seconds fast ethernet port and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port auto-negotiation-speed-advertisement
5/2,5/7-11 10/100Mps
Port auto-negotiation speed advertisement set:
5/2,5/7,5/8,5/9,5/10,5/11
```

This example sets the auto negotiation and advertisement of the speed capability as 100Mbps for the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port auto-negotiation-speed-advertisement
7-11,A2-A4 100Mbps
Port auto-negotiation speed advertisement set:
7,8,9,10,11,A2,A3,A4
```

set port auto-vlan-create

Command Mode: Configuration

Description

Enables or disables auto VLAN creation for a specified switch port or all switch ports on a specified module. When enabled, it allows the switch to automatically create a VLAN each time the port receives a frame from an unknown VLAN.

Command Syntax

To Enable:	`set port auto-vlan-create {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}] {disable|enable}`

Table 12-9. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies a module number. If a module number is specified, auto-vlan-creation is set on all ports on the module
mod-swport-range	Specifies a switch port or a range of switch ports on which to set the auto-vlan-create-parameter.
disable|enable	Enables or disables auto VLAN creation.

Sample Output

This example enables port auto-vlan-create.

```
Cajun(configure)# set port auto-vlan-create 4/1 enable
Port auto-vlan-create set: 4/1.
```

set port category

Command Mode: Configuration

Description

Sets the category of ports.

Command Syntax

To Enable:	`set port category {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{service-port | user-port}`

Table 12-10. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the port category type of every module is set.
mod-port-range	Specifies a range of ports whose category is to be set.
service-port| user-port	• **service-port** - Indicates that the specified ports are set as service ports and intended for connections to servers or other switches. • **user-port** - Indicates that the specified ports are set as user ports and intended for connections to end user nodes.

Sample Output

This example sets the category of all the ports on the module in slot 3 and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R as user ports.

```
Cajun(configure)# set port category 3,5/7-11 user-port
Port category set: 3/1,3/2,5/7,5/8,5/9,5/10,5,11
```

This example sets the category for the P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4 as service ports.

```
Cajun(configure)# set port category 7-11,G1,A2-A4 service-port
Port category set: 7,8,9,10,11,G1,A2,A3,A4
```

set port disable

Command Mode: Configuration

Description

Disable a specified port or ports.

Command Syntax

To Enable:	`set port disable {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]`

Table 12-11. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where every port on that module is disabled.
mod-port-range	Specifies a range of ports to be disabled.

Sample Output

This example disables all the ports on the module in slot 3 and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port disable 3,5/7-11
Port disable set: 3/1,3/2,5/7,5/8,5/9,5/10,5/11
```

This example disables the Cajun P220 fast ethernet switch ports 7 through 11, the P220 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port disable 7-11,G1,A2-A4
Port disable set: 7,8,9,10,11,G1,A2,A3,A4
```

set port duplex

Command Mode: Configuration

Description

Set the duplexity of fast ethernet ports.

Command Syntax

To Enable: Cajun P550	`set port duplex {<mod-num>|<mod-port-range>}[...,{<mod-num>| <mod-port-range>}]{full-duplex | half-duplex}`
To Enable: Cajun P220	`set port duplex {<p220-port-range>}… {full-duplex | half-duplex}`

Table 12-12. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the duplexity of every fast ethernet port is set.
mod-port-range	Specifies a range of fast ethernet ports whose duplexity is to be set.
full-duplex| half-duplex	Configure the duplex type of a port or range of ports. • **full duplex -** The duplexity of the port is set to full duplex. • **half duplex -** The duplexity of the port is set to half duplex.

Sample Output

This example sets fast ethernet ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R to full duplex mode.

```
Cajun(configure)# set port duplex 5/7-11 full-duplex
Port duplex mode set: 5/7,5/8,5/9,5/10,5/11
```

This example sets the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to half duplex mode.

```
Cajun(configure)# set port duplex 7-11,A2-A4 half-duplex
Port duplex mode set: 7,8,9,10,11,A2,A3,A4
```

set port enable

Command Mode: Configuration

Description

Enable a specified port or ports.

Command Syntax

To Enable:	`set port enable {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]`

Table 12-13. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where every port is enabled.
mod-port-range	Specifies a range of ports to be enabled.

Sample Output

This example enables all the ports on the module in slot 3 and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port enable 3,5/7-11
Port enable set: 3/1,3/2,5/7,5/8,5/9,5/10,5/11
```

This example enables the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port enable 7-11,G1,A2-A4
Port enable set: 7,8,9,10,11,G1,A2,A3,A4
```

set port fast-start

Command Mode: Configuration

Description

Enable or disable fast start for a specified switch port or all switch ports on a specified module.

Command Syntax

To Enable:	`set port fast-start {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]{disable|enable}`

Table 12-14. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where every switch port has the ability to fast start enabled or disabled.
mod-port-range	Specifies a range of switch ports whose ability to fast start is enabled or disabled.
disable|enable	Disables or enables the specified switch ports to fast start.

Sample Output

This example enables the second switch port on the module in slot 3 and switch ports 7 through 11 on the module in slot 5 of a Cajun P550 or P55R to fast start.

```
Cajun(configure)# set port fast-start 3/2,5/7-11 enable
Port fast-start set: 3/2,5/7,5/8,5/9,5/10,5/11
```

This example disables fast start for the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port fast-start 7-11,G1,A2-A4 disable
Port fast-start set: 7,8,9,10,11,F1,A2,A3,A4
```

set port flow-control

Command Mode: Configuration

Description

Set the port flow control.

Note: Setting this parameter on any M5548-100TX port (Tamale) sets all physical ports on the module to the same value.

Command Syntax

To Enable:	`set port flow-control {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{disable|enable|enable -receive-only|enable-send-only| enable-with-aggressive-backoff}`

Table 12-15. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the flow control for each port on the module is to be set.

mod-port-range	Specifies the range of ports whose flow control is to be set.
flowcontrol	The Flow Control options are: • **disable** - Disables flow control for specified ports. Turns off an attached device's ability to send flow-control packets to a local port. • **enable** - Enables flow control for specified ports. Turns on an attached device's ability to send flow-control packets to a local port. • **enable-receive-only** - Enables receive only for the specified gigabit ports. Indicates that a port only receives administrative status from a remote device. • **enable-send-only** - Enables send only for the specified gigabit ports. Indicates that a port only sends administrative status from a remote device. • **enable-with-aggressive-backoff** - Enables flow control with aggressive backoff for specified fast ethernet ports.

Sample Output

This example sets the flow control on all the gigabit ports on the module in slot 3 of a Cajun P550 or P550R to enable-receive-only.

```
Cajun(configure)# set port flow-control 3 enable-receive-only
Port flow control set: 3/1,3/2
```

This example sets the flow control on the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to enable-with-aggressive-backup.

```
Cajun(configure)# set port flow-control 7-11,A2-A4
enable-with-aggressive-backoff
Port flow control set: 7,8,9,10,11,A2,A3,A4
```

set port frame-tags

Command Mode: Configuration

Description

Set the switch ports to use or ignore frame tags.

Command Syntax

To Enable:	`set port frame-tags {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]{ignore|use}`

Table 12-16. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where every switch port on that module has the ability to use or ignore frame tag.
mod-port-range	Specifies a range of switch ports that are able to use or ignore frame tags.
ignore|use	Indicates whether the specified switch ports are to be set to ignore or use frame tags.

Sample Output

This example sets the second switch port on the module in slot 3 and switch ports 7 through 11 on the module in slot 5 of a Cajun P550 or P55R to use frame tags.

```
Cajun(configure)# set port frame-tags 3/2,5/7-11 use
Port frame-tags set: 3/2,5/7,5/8,5/9,5/10,5/11
```

This example sets the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit ports, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to ignore frame tags.

```
Cajun(configure)# set port frame-tags 7-11,G1,A2-A4 ignore
Port frame-tags set: 7,8,9,10,11,G1,A2,A3,A4
```

set port known-mode

Command Mode: Configuration

Description

Enable or disable the known mode for a specified switch port.

Command Syntax

To Enable:	`set port known-mode {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}] {disable|enable}`

Table 12-17. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the known mode of every switch port is enabled or disabled.
mod-port-range	Specifies a range of switch ports whose known mode is to be enabled or disabled.
disable|enable	Enable or disable the known mode for the specified switch ports.

Sample Output

This example enables the known mode for the seconds switch port on the module in slot 3 and switch ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port known-mode 3/2,5/7-11 enable
Port known-mode set: 3/2,5/7,5/8,5/9,5/10,5/11
```

This example disables the known mode for the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port known-mode 7-11,G1,A2-A4 disable
Port known-mode set: 7,8,9,10,11,G1,A2,A3,A4
```

set port name

Command Mode: Configuration

Description

Sets the name for a port.

Command Syntax

To Enable:	`set port name <mod-port-spec> [<port-name>]`

Table 12-18. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-spec	Specifies a particular port by its module and port numbers.
port-name	Specifies the name to be assigned to the port. If a port name is not specified, the name of the port is cleared.

Sample Output

This example sets the name of the seconds port on the module in slot 3 of a P550 and P550R.

```
Cajun(configure)# set port name 3/2 "Really fast port"
Port name set: 3/2
```

set port pace-priority-mode

Command Mode: Configuration

Description

Enable or disable pace priority mode on a specified port or ports.

Command Syntax

To Enable:	`set port pace-priority-mode {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{disable|enable}`

Table 12-19. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies a module number where pace priority mode is enabled or disabled for every port on the module.
mod-port-range	Specifies a range of ports where pace priority mode is enabled or disabled.
disable|enable	Enables or disables pace priority for the specified ports.

Sample Output

This example enables the pace priority mode on all the ports on the module in slot 3 and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port pace-priority-mode 3,5/7-11 enable
Port pace priority enable set: 3/1,3/2,5/7,5/8,5/9,5/10,5/11
```

This example disables the pace priority mode on the Cajun P220 fast ethernet switch ports 7 through 11, the P220 G1 gigabit port, and the P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port pace-priority-mode 7-11,G1,A2-A4
disable
Port pace priority disable set: 7,8,9,10,11,G1,A2,A3,A4
```

set port rate-limit-burst-size

Command Mode: Configuration

Description

Set the rate limit burst size for fast ethernet ports.

Note: Setting this parameter on any M5548-100TX port (Tamale) sets all physical ports on the module to the same value.

Command Syntax

To Enable:	`set port rate-limit-burst-size {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{1|2|4|8|16|32|64|128|256|512|1024|2048}`

Table 12-20. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the rate limit burst size for each fast ethernet port on the module is to be set.
mod-port-range	Specifies the range of fast ethernet where the rate limit burst size is to be set.
1|2|4...1028|2048	The rate limit burst size options.

Sample Output

This example sets the rate limit burst size for the second fast ethernet port and ports 7-11 on the module in slot 5 of a Cajun P550 or P550R to 512.

```
Cajun(configure)# set port rate-limit-burst-size 5/2,5/7-11 512
Port rate limit burst size set: 5/2,5/7,5/8,5/9,5/10,5/11
```

This example sets the rate limit burst size for the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to 128.

```
Cajun(configure)# set port rate-limit-burst-size 7-11,A2-A4 128
Port rate limit burst size set: 7,8,9,10,11,A2,A3,A4
```

set port rate-limit-mode

Command Mode: Configuration

Description

Sets the rate limit mode for fast ethernet ports.

Command Syntax

To Enable:	`set port rate-limit-mode {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{disable|enable|enable -include-known-multicasts}`

Table 12-21. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the rate limit mode for fast ethernet ports are to be set.
mod-port-range	Specifies a range of fast ethernet ports whose rate limit mode is to be set.
disable|enable|enable -include-known-multicasts	Rate limit mode options.

Sample Output

This example sets the rate limit mode for the second fast ethernet port and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port rate-limit-mode 5/2,5/7-11 enable
Port rate limit mode set: 5/2,5/7,5/8,5/9,5/10,5/11
```

This example set the rate limit mode for the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to disable.

```
Cajun(configure)# set port rate-limit-mode 7-11,A2-A4 disable
Port rate limit mode set: 7,8,9,10,11,A2,A3,A4
```

set port rate-limit-rate

Command Mode: Configuration

Description

Sets the rate limit rate for fast ethernet ports.

Command Syntax

To Enable:	`set port rate-limit-rate {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{1%|2%|5%|10%|20%|40%|80%}`

Table 12-22. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the rate limit rate for each fast ethernet port on the module is to be set.
mod-port-range	Specifies a port or a range of fast ethernet ports whose rate limit rate is to be set.
1%|2%|5%|10%|20%|40%|80%	Rate limit rate options.

Sample Output

This example sets the rate limit rate for the second fast ethernet port and ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R to 80%.

```
Cajun(configure)# set port rate-limit-rate 5/2,5/7-11 80%
Port rate limit rate set: 5/2,5/7,5/8,5/9,5/10,5/11
```

This example sets the rate limit rate for the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to 10%.

```
Cajun(configure)# set port rate-limit-rate 7-11,A2-A4 10%
Port rate limit rate set: 7,8,9,10,11,A2,A3,A4
```

set port remote-fault-detect

Command Mode: Configuration

Description

Enable or disable remote fault detections for gigabit ports.

Command Syntax

To Enable:	`set port remote-fault-detect {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{disable|enable}`

Table 12-23. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the ability to detect remote link errors for each gigabit port on the module is to be set.
mod-port-range	Specifies a port or a range of gigabit ports whose ability to detect remote link errors are enabled or disabled.
disable|enable	Disables or enables the remote fault detection capability for the specified gigabit ports.

Sample Output

This example enables remote fault detection in gigabit ports 1 and 2 on the module in slot 3 of a Cajun P550 or P550R.

```
Cajun(configure)# set port remote-fault-detect 3/1,3/2 enable
Port remote fault detection enable set: 3/1,3/2.
```

This example disables remote fault detection in the gigabit ports G2 through G4 of a Cajun P220G.

```
Cajun(configure)# set port remote-fault-detect G2-G4 disable
Port remote fault detection disable set: G2,G3,G4.
```

set port spanning-tree-mode

Command Mode: Configuration

Description

Enable or disable spanning tree mode for specified switch ports.

Command Syntax

To Enable:	`set port spanning-tree-mode {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]{disable|enable}`

Table 12-24. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the spanning tree mode is to be enabled or disabled for every switch port on the module.
mod-port-range	Specifies a range of switch ports whose spanning tree mode is to be enabled or disabled.
enable|disable	Enable or disable spanning tree mode for specified switch ports.

Sample Output

This example enables the spanning tree mode for the second switch port on the module in slot 3 and switch port 7 through 11 on the module in slot 5 of a Cajun P550 or a P550R.

```
Cajun(configure)# set port spanning-tree-mode 3/2,5/7-11 enable
Port spanning-tree-mode set: 3/2,5/7,5/8,5/9,5/10,5/11
```

This example disables the spanning tree mode for the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port spanning-tree-mode 7-11,G1,A2-A4
disable
Port spanning-tree-mode set: 7,8,9,10,11,G1,A2,A3,A4
```

set port speed

Command Mode: Configuration

Description

Set the port speed.

Command Syntax

To Enable:	`set port speed {<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]{10Mbps|100Mbps|1Gbps}`

Table 12-25. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the speed of every port on the module is to be set.
mod-port-range	Specifies a range of ports whose speed is to be set.
100Mbps|10Mbps	The speed options for fast ethernet ports.
1Gbps	The speed option for gigabit ports.

Sample Output

This example sets the speed for fast ethernet ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R to 100Mbps.

```
Cajun(configure)# set port speed 5/7-11 100Mbps
Port speed set: 5/7,5/8,5/9,5/10,5/11
```

This example sets the speed of the Cajun P220 fast ethernet switch ports 7 through 11, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to 10Mbps.

```
Cajun(configure)# set port speed 7-11 10Mbps
Port speed set: 7,8,9,10,11,A2,A3,A4
```

set port trunking-format

Command Mode: Configuration

Description

Sets the trunking format for switch ports.

Command Syntax

To Enable:	`set port trunking-format {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]{clear|ieee-802.1Q| multi-layer|3com}`

Table 12-26. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the trunking mode is to be set for each switch port on the module.
mod-swport-range	Specifies a range of switch ports whose trunking mode is to be set.
clear	Specifies the trunking option, which does no VLAN tagging.
ieee-802.1Q	Specifies the IEEE 802.1Q ethernet VLAN tagging trunking option.
multi-layer	Specifies a widely available proprietary VLAN tagging trunking option.
3com	Specifies the 3Com VLAN tagging trunking option.

Sample Output

This example sets the trunking option for the second switch port on the module in slot 3 and switch ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R to the IEEE standard.

```
Cajun(configure)# set port trunking-format 3/2,5/7-11 ieee-802.1Q
Port trunking-format set: 3/2,5/7,5/8,5/9,5,10,5/11
```

This example set the trunking option for the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220 expansion/auxiliary module ports A2 through A4 to clear.

```
Cajun(configure)# set port trunking-format 7-11,G1,A2-A4 clear
Port trunking-format set: 7,8,9,10,11,G1,A2,A3,A4
```

set port vlan

Command Mode: Configuration

Description

Set the VLAN for a specified switch port or all switch ports on a specified module.

Command Syntax

To Enable:	`set port vlan {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}] <vlan-id>`

Table 12-27. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies a module number. If a module number is specified, the VLAN is set for all ports on the module.
mod-swport-range	Specifies a switch port or a range of switch ports where a VLAN is to be set.
vlan-id	The ID of the VLAN.

Sample Output

This example sets a vlan on a specific port.

```
Cajun(configure)# set port vlan 3/1 1
Port VLAN set: 3/1.
```

set port vlan-binding-method

Command Mode: Configuration

Description

Set VLAN binding method for a specified switch port or all switch ports on a specified module.

Command Syntax

To Enable:	`set port vlan-binding-method {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}] {bind-to-all|bind-to-received|static}`

Table 12-28. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies a module number. If a module number is specified, the VLAN binding method is set for all ports on the module.
mod-swport-range	Specifies a switch port or a range of switch ports on which to set the VLAN binding method.
bind-to-all	Binds the port to all VLANs known to the switch.
bind-to-received	Binds this port to any VLAN it receives traffic from.
static	Assigns VLAN membership manually, using the VLAN switch ports.

Sample Output

This example sets the port vlan to bind-to-all.

```
Cajun(configure)# set port vlan-binding-method 3/1 bind-to-all
Port vlan-binding-method set: 3/1.
```

set port vtp-snooping

Command Mode: Configuration

Description

Disable or enable vtp-snooping for specified switch ports. The default state is **disabled**.

Command Syntax

To Enable:	`set port vtp-snooping {<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]{disable|enable}`

Table 12-29. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module. (Valid only on P550 and P550R switches).
mod-swport-range	Specifies a particular port or a range of ports on a module whose vtp-snooping is to be enabled or disabled.
disable|enable	Disables or enables vtp-snooping for specific switch ports.

Sample Output

This example enables the vtp-snooping option for the second switch port on the module in slot 3 and switch ports 7 through 11 on the module in slot 5 of a Cajun P550 or P550R.

```
Cajun(configure)# set port vtp-snooping 3/2,5/7-11 enable
Port vtp-snooping set: 3/2,5/7,5/8,5/9,5/10,5/11.
```

This example disables the vtp-snooping option for the Cajun P220 fast ethernet switch ports 7 through 11, the Cajun P220 G1 gigabit port, and the Cajun P220expansion/auxiliary module ports A2 through A4.

```
Cajun(configure)# set port vtp-snooping 7-11,G1,A2-A4 disable
Port vtp-snooping set: 7,8,9,10,11,G1,A2,A3,A4.
```

show port

Command Mode: User

Description

Display the configuration of specified switch ports. By default, the configuration of all switch ports is displayed.

Command Syntax

To View:	`show port [{<mod-num>|<mod-swport-range>} [...,{<mod-num>|<mod-swport-range>}]]`

Table 12-30. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the configuration of every switch port is to be displayed.
mod-swport-range	Specifies a range of ports on a module whose configuration is to be displayed.

Sample Output

```
Cajun> show port 3
Port  Port VLAN Trunk Mode      Frame  VLAN Binding
      (ID:Name) Tags
----- ------------------------------------ ----------- ------
 3/1  1:Default clear       use    static
 3/2  1:Default clear       use    static
Port  Auto-VLAN VLX     Allow   Span    Fast    Known
      Create            Learn   Tree    Start   Mode
----- --------- ------- ------- ------- ------- -------
 3/1  disable   enable  enable  enable  disable disable
 3/2  disable   enable  enable  enable  disable disable
Port  Huntgroup                              Huntgroup Huntgroup
      (ID:Name)                              Base Port Subport
----- ------------------------------------ --------- ---------
 3/1  2:1                                   4/1       60
.
.
.
```

show port counters

Command Mode: User

Description

Display the port statistics on a module. If no mod-**num** or **mod-swport-spec** is specified, then the port statistics for all switch ports on all modules are displayed. If only a **mod-num** is specified, then port statistics for all switch ports on the specified module are displayed.

Command Syntax

To View:	`show port counters [{<mod-num>|<mod-swport-spec>}]`

Table 12-31. *Parameters, Keywords, Arguments*

Name	Definition
mod_num	Specifies the number of the module in the chassis for which port statistics are to be displayed. (Valid on the Cajun 550 and 550R only.)
mod-swport-spec	Specifies a particular switch port whose specific port statistics are to be displayed.

Sample Output

This example displays the ethernet interface statistics for all switch ports on a Cajun P550 or P550R.

```
Cajun> show port counters 3
Port 3/1                                    Cleared: 00-Sep-18 14:01:31
 Receive Utilization:                                                0%
 Receive Bytes:                                                      0
 Receive Unicast Packets:                                            0
 Receive Multicast Packets:                                          0
 Receive Discards:                                                   0
 Receive Errors                                                        54
 Transmit Utilization                                                 0%
 Transmit Bytes                                                  463,744
 Transmit Unicast Packets                                              0
.
.
.
```

show port mirror

Command Mode: User

Description

Show the port mirroring configuration for a specific source port/range or all source ports/ranges. If no **mod-num** or **mod-port-range** is specified, then the port mirroring configuration of all switch ports is displayed. If a **mod-num** is displayed, then all port mirroring sampling rules are displayed for the module.

Syntax

To View:	`show port mirror [{<mod-num>|<mod-port-range>}]`

Table 12-32. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies a module number. If a module number is specified, all port mirroring rules on the module are displayed.
mod-port-range	Specifies a particular port or a range of ports on a module. **Note:** If no module numbers or module/port numbers are specified, all port mirror rules on the switch are displayed.

Sample Output

```
Cajun> show port mirror
 Configure Source   Mirror Piggy Sampler  Max Packets
 Source    Port     Port   Port  Type     per Second
 --------- -------- -----  ----- -------- ----------
 4/1-10      -        -      -      -        -
 4/11-20    4/11    4/12   4/13  always      -
 5/1        5/1     4/4      -   periodic    200
.
.
.
```

show port status

Command Mode: User

Description

Display port status information. The status information of all ports is displayed by default.

Command Syntax

To View:	show port status [{<mod-num>|<mod-port-range>} [...,{<mod-num>|<mod-port-range>}]]

Table 12-33. *Parameters, Keywords, Arguments*

Name	Definition
mod-num	Specifies the number of the module where the status of every port on that module is displayed.
mod-port-range	Specifies a range of ports whose status information is to be displayed.

Sample Output

```
Cajun> show port status
Port   Type     Mode     Status   Auto-Neg  Speed     Duplex
-----  --------  --------  --------  --------  ---------  -----------
3/1    Gigabit   Enabled   No Link   Disabled  1 Gb/s     Full Duplex
4/1    Gigabit   Enabled   No Link   Disabled  1 Gb/s     Full Duplex
4/2    Gigabit   Enabled   No Link   Disabled  1 Gb/s     Full Duplex
6/1    10/100    Enabled   No Link   Enabled   Auto-Neg   Auto-Neg
6/8    10/100    Enabled   No Link   Enabled   Auto-Neg   Auto-Neg
6/17   10/100    Enabled   No Link   Enabled   Auto-Neg   Auto-Neg
.
.
.
```

transmit-interface

Command Mode: Interface

Description

Assign a transmit interface to a receive-only interface. To return to normal duplex ethernet interfaces, use the **no** form of this command. The default state is **disabled**.

Command Syntax

To Enable:	`transmit-interface <type> <number>`
To Disable:	`[no] transmit-interface <type> <number>`

Table 12-34. *Parameters, Keywords, Arguments*

Name	Definition
type	Transmit the interface type to be linked with the (current) receive-only interface.
number	Transmit the interface number to be linked with the (current) receive-only interface.

13

Power Cool RAM

Overview

This chapter describes:

- show system fans
- show system power
- show system ram

show system fans

Command Mode: User

Description

Display the status of the cooling system.

Command Syntax

To Enable:	`show system fans`

Sample Output

```
Cajun> show system fans
FanStatus
Module Fan Pair 1   Operational
Module Fan Pair 2   Operational
Fabric Fan 1        Operational
Fabric Fan 2        Operational
```

show system power

Command Mode: User

Description

Display the status of the power supplies.

Command Syntax

To Enable:	`show system power`

Sample Output

```
Cajun> show system power
Power Supply      Status        Type
     1            Present   Power 1 SP627
     2            Present   Power 1 SP627
     3            Present   Power 1 SP627

Total System Power      600 Watts
Current Power Available 355 Watts
```

show system ram

Command Mode: User

Description

Display the status of Random Access Memory (RAM).

Command Syntax

To Enable:	`show system ram`

Sample Output

```
Cajun> show system ram
Total RAM         64.00 MBytes
Operational Image 5.80 MBytes
Dynamically Allocated Memory
        Used      4.89 MBytes
        Available 53.31 MBytes
Allocation Failures 0
```

14 [redacted]

SNMP

Overview

This chapter describes:

- ❒ calendar set
- ❒ clock set
- ❒ clock timezone
- ❒ clock summer-time recurring
- ❒ hostname
- ❒ show calendar
- ❒ show clock
- ❒ show snmp
- ❒ show sntp
- ❒ show time zone
- ❒ snmp get get
- ❒ snmp next
- ❒ snmp set
- ❒ snmp-server community
- ❒ snmp-server contact
- ❒ sntp server
- ❒ snmp walk

calendar set

Command Mode: Privileged

Description

Set the clock, timezone and summertime hours.

Command Syntax

To Enable:	`calendar set <time>{<day><month>|<month><day>}<year>`

Table 14-1. *Parameters, Keywords, Arguments*

Name	Definition
time	The time in the format *hh:mm:ss*.
date	Current day in the month by date.
month	Current month by name.
year	Current year in four digits.

Sample Output

```
Cajun(configure)# calendar set 14:08:00 05 October 1999
```

clock set

Command Mode: Privileged

Description

Set the clock and summertime hours.

Command Syntax

To Enable:	`clock set <time>{ <day> <month>|<month><day>}<year>`

Table 14-2. *Parameters, Keywords, Arguments*

Name	Definition
time	The time in the format hh:mm:ss.
day	Current day in the month by name.
month	Current month by name.
year	Current year in four digits.
zone-name	The timezone in a three letter abbreviation.

Sample Output

```
Cajun(configure)# clock set 14:08:00 05 October 1999
```

clock timezone

Command Mode: Privileged

Description

Set the time zone.

Command Syntax

To Enable:	`clock timezone {<zone-name>|<hours> [<minutes>]}`

Table 14-3. *Parameters, Keywords, Arguments*

Name	Definition
zone-name	The timezone in a three letter abbreviation.
hours	Hours offset from UTC (+/-). You must enclose the hour value in " ".
month	Minutes offset from UTC.

Sample Output

```
Cajun(configure)# clock timezone "-5"

Cajun(configure)# clock timezone cst
```

clock summer-time recurring

Command Mode: Privileged

Description

Configures the system to automatically switch to summer time hours (U.S. Daylight Savings Time). The command format allows for an annual configuration and a one-time change for a particular year. To disable automatic summer time use the "no" form of this command. If parameters are excluded for recurring summer time hours, then summer time is set to default.

Command Syntax

To Enable:	`clock summer-time recurring [ <week> <day> <month> <hh:mm> <week> <day> <month> <hh:mm> [<offset>]]`
To Disable:	`[no] clock summer-time`

Table 14-4. *Parameters, Keywords, Arguments*

Name	Definition
week	Week of the month (1 to 5 (where 5=last)).
day	Day of the week (for example: Sunday, Monday).
month	Month (for example: January, February).
date	Date of the month (1 to 31).
hh:mm	Time (military format) in hours and minutes.
offset	The number of minutes to add during summer time (default 60). (Optional)

Sample Output

```
Cajun(configure)# clock summer-time recurring 1 Sunday Apr 02:00 2
mon Jan 02:00
Set of recurring summer time hours succeeded
```

hostname

Command Mode: Configuration

Description

Specify the hostname used in prompts and default configuration filenames. Use the **no** form of the command to disable the hostname currently being used.

Command Syntax

To Enable:	`hostname <host-name>`
To Disable:	`[no] hostname`

Table 14-5. *Parameters, Keywords, Arguments*

Name	Definition
`host-name`	Name of the host.

Sample Output

This example configures the hostname as "Cajun 23".

```
Cajun(configure)# hostname "Cajun 23"
```

show calendar

Command Mode: User

Description

Display the calendar settings.

Command Syntax

To Enable:	`show calendar`

Sample Output

```
Cajun(configure)# show calendar
  The date is 06/21/2007
  The time is 22:05:34 for Eastern Time(GMT-5)
```

show clock

Command Mode: User

Description

Display the system clock. The "details" option displays the summer-time setting (if any).

Command Syntax

To Enable:	`show clock details`

Table 14-6. *Parameters, Keywords, Arguments*

Name	Definition
details	Display detailed clock information.

Sample Output

```
Cajun(configure)# show clock details
 The date is 06/21/2007
 The time is 22:04:39 for Eastern Time(GMT-5)
 Summer time hours are in effect
 Summer time offset in minutes: 60
 Summer time recurring date limits:
    Start - first Sunday of Apr at 02:00
    End   - last Sunday of Oct at 02:00
 SNTP client is disabled
```

show snmp

Command Mode: User

Description

Display the list of SNMP Community names.

Command Syntax

To Enable:	`show snmp`

Table 14-7. *Parameters, Keywords, Arguments*

Name	Definition
string	The SNMP Community
IP address	The IP Address of the trap receiver associated with this SNMP Community string. If is not configured asteriks are displayed (***.***.***.***)
access	The access level for the SNMP community string. (none -- access level is disabled, ro - read-only access, rw - read-write access)
security	The security level associated with this community string.
traps	Indicates if this SNMP community is associated with a trap recever.

Sample Output

```
String                          IP Address      Access Security Traps
------------------------------- --------------- ------ --------
public                         ***.***.***.***    ro     Normal  disable
rwcomm                           10.1.1.0         rw     Normal  enable
admincomm                        ***.***.***.***  rw     Admin   disable
```

show sntp

Command Mode: User

Description

Display information about the Simple Network Time Protocol (SNTP).

Command Syntax

To Enable:	`show sntp`

Sample Output

```
Cajun(configure)# show sntp
  SNTP client is enabled
  SNTP server IP address is 199.93.238.247
```

show time zone

Command Mode: User

Description

Display a list of time zone abbreviations for use in the "clock timezone" command.

Command Syntax

To Enable:	`show time zone`

Sample Output

```
Cajun> show time zone
  eni        Eniwotok(GMT-12)
  kwa        Kwaialein(GMT-12)
  mid        Midland Island(GMT-11)
  haw        Hawaii(GMT-10)
  ala        Alaska(GMT-9)
  pst        Pacific Time(GMT-8)
  ari        Arizona(GMT-7)
  mst        Mountain Time(GMT-7)
  cst        Central Time USA(GMT-6)
  .
  .
  .
```

snmp get get

Command Mode: Privileged

Description

Perform an SNMP get within the current system.

Command Syntax

To Enable:	`snmp get get {<OID> | <mib-object-name>}`

Table 14-8. *Parameters, Keywords, Arguments*

Name	Definition
OID	IB Object Identifier (for example: 1.3.6.x.x...).
mib-object-name	The name of a MIB object defined within a MIB file (for example: sysName, sysContact)

Sample Output

```
Cajun(configure)# snmp get sysContact
sysContact (1.3.6.1.2.1.1.4.0) System Administrator

Cajun(configure)# snmp get atNetAddress.22.192.168.60.47
atNetAddress (1.3.6.1.2.1.3.1.1.3.22.192.168.60.47) 192.168.60.47
```

snmp next

Command Mode: Privileged

Description

Perform an snmp next operation within the system.

Command Syntax

To Enable:	`snmp next {<OID>|<mib-object-name>}`

Table 14-9. *Parameters, Keywords, Arguments*

Name	Definition
OID	IB Object Identifier (for example: 1.3.6.x.x...).
mib-object-name	The name of a MIB object defined within a MIB file (for example: sysName, sysContact)

Sample Output

```
Cajun# snmp next ifTable
ifIndex (1.3.6.1.2.1.2.2.1.1.1) 1

Cajun# snmp next ifDescr.1
ifDescr (1.3.6.1.2.1.2.2.1.2.2) PPP Console Serial
```

snmp set

Command Mode: Configuration

Description

Perform a SNMP set within the system on a MIB Object.

Command Syntax

To Enable:	`snmp set {<OID>|<mib-object-name>}<set-value>`

Table 14-10. *Parameters, Keywords, and Arguments*

Name	Definition
OID	IB Object Identifier (for example: 1.3.6.x.x...).
mib-object-name	The name of a MIB object defined within a MIB file (for example: sysName, sysContact).
set-value	The value you to which you want to set this snmp object.

Sample Output

```
Cajun(configure)# snmp set sysContact "System Administrator"

Cajun(configure)# snmp set cjnIpIfAdminStatus.22 2
```

snmp-server community

Command Mode: Configuration

Description

Set up the community access string. Use the **no** form of this command to remove the specified community string. The default setting for community string access is **read-only** (**ro**).

Command Syntax

To Enable:	`snmp-server community <string>{ro|rw |none}[{normal| admin}]`
To Disable:	`[no] snmp-server community <string>`

Table 14-11. *Parameters, Keywords, Arguments*

Name	Definition
string	Community string that acts like a password and permits access to the SNMP protocol. • **ro**: Specifies read-only access. Authorized management stations are only able to retrieve MIB objects. • **rw**: Specifies read-write access. Authorized management stations are able to both retrieve and modify MIB objects. • **none**: Specifies no access. Management stations are unable to retrieve or modify MIB objects. • **normal**: Specifies that this communtiy string has normal level of access within the chassis. (Optional) • **admin**: Specifies that this community string has admin level of access within the chassis. (Optional)

Sample Output

```
Cajun> snmp-server community rw_public rw normal
```

snmp-server contact

Command Mode: Configuration

Description

To set the system contact string, use the snmp-server contact global configuration command. Use the **no** form of this command to remove the system contact information. The default setting for community string access is **read-only** (**ro**).

Command Syntax

To Enable:	`snmp-server contact <string>`
To Disable:	`[no] snmp-server contact <string>`

Table 14-12. *Parameters, Keywords, Arguments*

Name	Definition
string	A string that describes the system contact information.

Sample Output

```
Cajun> snmp-server community rw_public rw normal
```

sntp server

Command Mode: Configuration

Description

Enables the Simple Network Time Protocol (SNTP) client to request and accept Network Time Protocol (NTP) traffic from a NTP or SNTP server. The **no** form of the command disables the SNTP client.

Command Syntax

To Enable:	`sntp server <ip-addr>`
To Disable:	`[no] sntp server`

Table 14-13. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	IP address of the time server.

Sample Output

This example enables the SNTP client and sets the SNTP server address.

```
Cajun(configure)# sntp server 199.93.238.247
SNTP client is enabled
SNTP server IP address is 199.93.238.247
```

snmp walk

Command Mode: Privileged

Description

Walk the entire SNMP table (or optionally start at the OID or Mib Name specified) by issuing a series of SNMP next operations.

Command Syntax

To Enable:	`snmp walk {<OID>|<mib-object-name>}`

Table 14-14. *Parameters, Keywords, Arguments*

Name	Definition
OID	IB Object Identifier (for example: 1.3.6.x.x...).
mib-object-name	The name of a MIB object defined within a MIB file (for example: sysName, sysContact)

Sample Output

```
Cajun# snmp walk
sysDescr (1.3.6.1.2.1.1.1.0)
sysObjectID (1.3.6.1.2.1.1.2.0) 0.0.0.0.0.0.0.0.0.0
sysUpTime (1.3.6.1.2.1.1.3.0) 16977784
sysContact (1.3.6.1.2.1.1.4.0) System Administrator
sysName (1.3.6.1.2.1.1.5.0) Cajun
sysLocation (1.3.6.1.2.1.1.6.0) [Location Not Set]
sysServices (1.3.6.1.2.1.1.7.0) 3
ifNumber (1.3.6.1.2.1.2.1.0) 22
ifIndex (1.3.6.1.2.1.2.2.1.1.1) 1
.
.
.
```

15 [redacted]

STAP

Overview

This chapter describes:

- set 3com-mapping-table
- set spantree
- set spantree config
- set spantree fwddelay
- set spantree hello
- set spantree maxage
- set spantree port
- set spantree port-top-change-detection
- set spantree portcost
- set spantree portpri
- set spantree priority
- show 3com-mapping-table
- show spantree
- show spantree config
- show spantree port

set 3com-mapping-table

Command Mode: Configuration

Description

Create or delete a new 3Com mapping table.

Command Syntax

To Enable:	`set 3com-mapping-table <table-name> […table-entry <entry-num> vlan {<vlan-id> | name <vlan-name> } [,] ]`
To Disable:	`clear 3com-mapping-table <table-name> [… table-entry <entry-num> [,] ]`

Table 15-1. *Parameters, Keywords, Arguments*

Name	Definition
`table-name`	The name of the mapping table to be deleted.
`entry-num`	The entry number in the table.
`vlan-id`	Specifies a VLAN by its VLAN ID.
`name`	**vlan-name** - Specifies a VLAN by its name.

Sample Output

This example clears an entry from a 3Com mapping table.

```
Cajun(configure)# clear 3com-mapping-table "TestTable" table-entry
2
Entry (tag) 2 in table "TestTable" was successfully cleared
```

This example deletes a 3Com mapping table entirely.

```
Cajun(configure)# clear 3com-mapping-table "TestTable"
3com "TestTable" deleted successfully
```

set spantree

Command Mode: Configuration

Description

Enable or disable individual spanning tree bridges. The default state is **enabled**.

Command Syntax

To Enable:	`set spantree {enable|disable} {802.1D | vlan {<vlan-id> | name <vlan-name>}}`

Table 15-2. *Parameters, Keywords, Arguments*

Name	Definition
`enable`	Enable the bridge.
`disable`	Disable the bridge.
`802.1D`	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified in the IEEE config mode.
`vlan-id`	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.
`vlan-name`	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

```
Cajun(configure)# set spantree disable 802.1D
Bridge successfully disabled
```

set spantree config

Command Mode: Configuration

Description

Set the current spanning tree configuration. The default setting is **per-VLAN**.

Command Syntax

To Enable:	`set spantree config {ieee|per-vlan|dual-layer|disable}`

Table 15-3. *Parameters, Keywords, Arguments*

Name	Definition
`ieee`	The entire switch is a single IEEE 802.1D-compliant bridge.
`per-vlan`	Each VLAN functions as a separate IEEE 802.1D-compliant bridge. VLAN bridges can only be displayed when in per-vlan or dual-layer mode.
`dual-layer`	A proprietary version of per-VLAN, where the vlan id is embedded as a tag within the bridge PDUs.
`disable`	Disables spanning tree on the switch.

Sample Output

This example sets the spanning tree configuration to ieee.

```
Cajun(configure)# set spantree config ieee
Config successfully set to ieee
```

set spantree fwddelay

Command Mode: Configuration

Description

Set the forward delay time for a bridge. The default time is 15 seconds.

Command Syntax

To Enable:	`set spantree fwddelay <fwddelay-value> {802.1D|vlan {<vlan-id>|name <vlan-name>}}`

Table 15-4. *Parameters, Keywords, Arguments*

Name	Definition
`fwddelay-value`	The forward delay value for the bridge, in seconds.
`802.1D`	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in ieee config mode.
`vlan-id`	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.
`vlan-name`	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example sets the spanning tree forward delay to 12 seconds.

```
Cajun(configure)# set spantree fwddelay 12 802.1D
Bridge Forward Delay Time Successfully set to 12
```

set spantree hello

Command Mode: Configuration

Description

Set the bridge hello time for a particular bridge. The default time is **2 seconds**.

Command Syntax

To Enable:	`set spantree hello <hellotime-value> {802.1D|vlan {<vlan-id>|name <vlan-name>}}`

Table 15-5. *Parameters, Keywords, Arguments*

Name	Definition
`hellotime-value`	The hello time value for the bridge, in seconds.
`802.1D`	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in the IEEE config mode.
`vlan-id`	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.
`vlan-name`	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

```
Cajun(configure)# set spantree hello 5 802.1D
Bridge Hello Time Successfully set to 5
```

set spantree maxage

Command Mode:

Description

Sets the maximum message age for a bridge. The default age time is **20 seconds**.

Command Syntax

To Enable:	`set spantree maxage <maxage-value> {802.1D|vlan {<vlan_id> name <vlan-name>}}`

Table 15-6. *Parameters, Keywords, Arguments*

Name	Definition
`maxage-value`	The maximum age value for the bridge, in seconds.
`802.1D`	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in ieee config mode.
`vlan-id`	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** LAN bridges can only be modified when in per-vlan or dual-layer mode.
`vlan-name`	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example sets the spanning tree maximum age to 25 seconds.

```
Cajun(configure)# set spantree maxage 25 802.1D
Bridge MaxAge Successfully set to 25
```

set spantree port

Command Mode: Configuration

Description

Enables or disables spanning tree on a bridge port. The default state is **enabled**.

Command Syntax

To Enable:	`set spantree port <mod-port-range> [… [,] <mod-port-range>] {enable | disable} {802.1D | vlan {<vlan-id> | name <vlan-name> }}`

Table 15-7. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-range	Specifies a particular port or a range of ports on a module.
enable|disable	Enable or disable spanning tree for the bridge port.
802.1D	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in the IEEE config mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** LAN bridges can only be modified when in per-vlan or dual-layer mode.
vlan-name	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example disables spanning tree port 5/1 .

```
Cajun(configure)# set spantree port 5/1 disable 802.1D
Port 5/1 successfully disabled
```

set spantree port-top-change-detection

Command Mode: Configuration

Description

Enable or disable the topology port change detection ability of a bridge port. The default state is **enabled**.

Command Syntax

To Enable:	`set spantree port-top-change-detection <mod-port-range> [… [,] <mod-port-range>]] {enable | disable} {802.1D | vlan {<vlan-id> | name <vlan-name>}}`

Table 15-8. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-range	Specifies the module and the port range.
enable|disable	Enable or disable topology change detection for the bridge port.
802.1D	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in the IEEE config mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** LAN bridges can only be modified when in per-vlan or dual-layer mode.
vlan-name	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example disables spanning tree port topology change detection.

```
Cajun(configure)# set spantree port-top-change-detection 5/1
disable 802.1D
Port 5/1 topology change detection successfully disabled
```

set spantree portcost

Command Mode: Configuration

Description

Sets the path cost of a particular bridge port. The defaults are: **100** for a 10MB port, **19** for a 100 MB port, and **4** for a 1 GB port.

Command Syntax

To Enable:	`set spantree portcost <mod-port-range> […[,] <mod-port-range>] <cost-value> {802.1D|vlan {<vlan-id>| name <vlan-name>}}`

Table 15-9. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-range	Specifies the module and the port range.
cost-value	The path cost for the bridge port.
802.1D	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in the IEEE config mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** LAN bridges can only be modified when in per-vlan or dual-layer mode.
vlan-name	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example sets the path cost for the bridge.

```
Cajun(configure)# set spantree portcost 5/1 15 802.1D
Port 5/1 path cost successfully set to 15.
```

set spantree portpri

Command Mode: Configuration

Description

Sets the port priority for a particular bridge port.

Command Syntax

To Enable:	`set spantree portpri <mod-port-range> [… [,] <mod-port-range>] <priority-value> {802.1D | vlan {<vlan-id> | name <vlan-name>}}`

Table 15-10. *Parameters, Keywords, Arguments*

Name	Definition
mod-port-range	Specifies the module and the port range.
priority-value	The priority of the port, in hexidecimal. A two digit hexidecimal value indicates the priority of the bridge port. The higher the number, the lower the priority. The default is 0x80 (in hexidecimal).
802.1D	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in the IEEE config mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** LAN bridges can only be modified when in per-vlan or dual-layer mode.
vlan-name	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example sets the spanning tree port priority.

```
Cajun(configure)# set spantree portpri 5/1 81 802.1D
Port 5/1 priority successfully set to 0x81
```

set spantree priority

Command Mode: Configuration

Description

Sets the bridge priority for a particular bridge. The default priority is **0 x 8000** (in hexidecimal).

Command Syntax

To Enable:	`set spantree priority <priority-value> {802.1D|vlan {<vlan-id>|name <vlan-name }}`

Table 15-11. *Parameters, Keywords, Arguments*

Name	Definition
priority-value	The bridge priority, specified as a two byte value in hexidecimal (0x8000).
802.1D	Configure the IEEE 802.1D Legacy Bridge. **Note:** The 802.1D bridge can only be modified when in the IEEE config mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. **Note:** LAN bridges can only be modified when in per-vlan or dual-layer mode.
vlan-name	Configure a per-vlan or dual-layer bridge by using the VLAN's name. **Note:** VLAN bridges can only be modified when in per-vlan or dual-layer mode.

Sample Output

This example sets the spanning tree priority for the 802.1D Legacy Bridge.

```
Cajun(configure)# set spantree priority 0xAAAA vlan 1
Bridge Priority Successfully set to 0xAAAA
```

show 3com-mapping-table

Command Mode: User

Description

Show 3Com mapping tables. All tables are displayed by default.

Command Syntax

To View:	`show 3com-mapping-table [<table-name>]`

Table 15-12. *Parameters, Keywords, Arguments*

Name	Definition
table-name	The name of the 3Com mapping table. If not included, this command will display all of the tables configured on the switch.

Sample Output

```
Cajun> show 3Com-mapping-table
-------------------------------------------------------------
Table Name: "3ComDefault"
Table Entries: [entry num: vlan name (vlan id)]
 1: Default  (1   ) 2:Discard (8193) 3: Discard (8193) 4: Discard (8193)
 5: Discard (8193)6: Discard (8193) 7: Discard (8193) 8: Discard (8193)
 9: Discard (8193)10:Discard (8193)11: Discard(8193) 12: Discard (8193)
13: Discard (8193) 14:Discard(8193)15:Discard (8193) 16: Discard (8193)
-------------------------------------------------------------------
```

show spantree

Command Mode: User

Description

Display one or all spanning trees.

Command Syntax

To View:	`show spantree {all|802.1D|vlan{<vlan-id>|name <vlan-name>}}`

Table 15-13. *Parameters, Keywords, Arguments*

Name	Definition
all	Display all the bridges in configuration mode. • **IEEE mode** - Shows only the 802.1D bridge. • **per-vlan** or **dual-layer mode** - Shows all of the VLAN bridges.
802.1D	Indicates an 802.1D bridge which can only be displayed in 802.1D Config Mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. VLAN bridges can only be viewed when in per-vlan or dual-layer mode.
name	**vlan-name** - Configure a per-vlan or dual-layer bridge by using the VLAN's name. VLAN bridges can only be viewed when in per-vlan or dual-layer mode.

Sample Output

```
Cajun> show spantree all
Name/Vlan   Status   RootPrt   RootCst   MaxAge   HelloTime   FwdDly
TopChngs

Default     Enabled  0         0         20       2           15       0
            BridgeId = 0x800002E03BDDF400
            DesignatedRoot = 0x800002E03BDDF400
            Time Since Topology Change (hh:mm:ss) = 00:25:36
```

```
vlan100     Enabled  0         0         20       2           15       1
            BridgeId = 0x800002E03BDDF400
            DesignatedRoot = 0x800002E03BDDF400
            Time Since Topology Change (hh:mm:ss) = 00:24:39

vlan200     Enabled  0         0         20       2           15       1
            BridgeId = 0x800002E03BDDF400
            DesignatedRoot = 0x800002E03BDDF400
          Time Since Topology Change (hh:mm:ss) = 00:24:39
     .
     .
     .
```

show spantree config

Command Mode: User

Description

Display the current global spanning tree configuration.

Command Syntax

To View:	`show spantree config`

Sample Output

```
Cajun> show spantree config
Spanning Tree Config: Per-Vlan
```

show spantree port

Command Mode: User

Description

Show the port attributes for all bridge ports of a particular bridge.

Command Syntax

To View:	`show spantree port {802.1D | vlan {<vlan-id> | name <vlan-name> }}`

Table 15-14. *Parameters, Keywords, Arguments*

Name	Definition
802.1D	Indicates an 802.1D bridge which can only be displayed in 802.1D Config Mode.
vlan-id	Configure a per-vlan or dual-layer bridge by using the VLAN's vlan ID. VLAN bridges can only be viewed when in per-vlan or dual-layer mode.
name	**vlan-name** - Configure a per-vlan or dual-layer bridge by using the VLAN's name. VLAN bridges can only be viewed when in per-vlan or dual-layer mode.

Sample Output

```
Cajun> show spantree port vlan 802.1D
Name/Vlan   Status   RootPrt   RootCst   MaxAge   HelloTime   FwdDly
TopChngs

802.1D      Enabled  0         0         20       2           15       0
            BridgeId = 0x8000F00D04291400
            DesignatedRoot = 0x8000F00D04291400
            Time Since Topology Change (hh:mm:ss) = 02:17:34

Ports in Bridge "802.1D"
 Number  Module/Port  State      Priority   Enable   Cost   DesigPort
FwdTrans

 58      3/1          Down       0x80       Enabled  4      0x0000     0
```

```
                DesignatedBridge = 0x800202E03BD458000

 77      3/2          Down       0x80       Enabled  4      0x0000     0
                DesignatedBridge = 0x800202E03BD458000
.
.
.
```

16

Switch Fab

Overview

This chapter describes:

- set fabric configure-redundant-hardware
- set fabric enable-redundant-element
- set fabric toggle-active-controller
- show fabric status

set fabric configure-redundant-hardware

Command Mode: Configure

Description

Enable the configuration of redundant (switch fabric) hardware. The default state is enabled.

This command does not have reverse mapping. The configuration is both user and run-time modified.

Command Syntax

To Enable:	`set fabric configure-redundant-hardware {enable|disable}`

Table 16-1. *Parameters, Keywords, Arguments*

Name	Definition
enable|disable	Required parameter indicating that the setting for the redundant hardware is either enabled or disabled.

Sample Output

This example sets the redundant hardware to disabled.

```
Cajun(configure)# set fabric configure-redundant-hardware disable
```

set fabric enable-redundant-element

Command Mode: Configuration

Description

Enable the indicated redundant element.

This command does not have reverse mapping. The configuration is both user and run-time modified.

Command Syntax

To Enable:	`set fabric enable-redundant-element {normal` **`|1|2|3|4|5|6`**`}`

Table 16-2. *Parameters, Keywords, Arguments*

Name	Definition
normal |1|2|3|4|5|6	Required parameter. • Normal means that the normally enabled redundant element is turned on. • 1-6 means that element associated with the number is turned on.

Sample Output

```
Cajun(configure)# set fabric enable-redundant-element normal 3
```

set fabric toggle-active-controller

Command Mode: Configuration

Description

Toggles the active controller between the current active controller and the (standby) redundant controller. The default state is enabled.

This command does not have reverse mapping. The configuration is both user and run-time modified.

Command Syntax

To Enable:	`set fabric toggle-active-controller`

Sample Output

This example sets the fabric toggle-active-controller.

```
Cajun(configure)# set fabric toggle-active-controller
```

show fabric status

Command Mode: User

Description

Show switch fabric status. All of the switch fabric command sets are based on the web page functions. There is no "back-end" for this command.

Command Syntax

To Enable:	`show fabric status`

Sample Output

```
Cajun> show fabric status
Component                State
Switch Controller:      # 0 Active
Redundant Controller:   Not Configured
Switch Elements:        Normal # 0
Redundant Element:      Not Configured
```

17

Switch IP

Overview

This chapter describes:

- clear arp
- clear ip route
- set interface
- set ip route
- show arp
- show interface
- show ip route
- show ip route (static)

clear arp

Command Mode: Configuration

Description

Clear the contents of ARP cache.

Command Syntax

To Enable:	`clear arp`

Sample Output

This example clears the ARP cache.

```
Cajun(configure)# clear arp
```

System Supported: P220, P550

clear ip route

Command Mode: Configuration

Description

Delete an IP static route. (M5500/M2200 applicable only - equivalent to the Cajun CLI command: net ip delete sroute ip_address net_mask.)

Command Syntax

To Enable:	`clear ip route {all|<dest-ip-addr> <mask>}`

Table 17-1. *Parameters, Keywords, Arguments*

Name	Definition
ip-address	The IP address to be removed.
all	Clears all of the configured static routes.
dest-ip-addr	Clears the static route associated with the interface indicated by the destination IP address and mask. • **mask** - Subnet address to remove.

Sample Output

This example clears all ip routes .

```
Cajun(configure)# clear ip route all
```

System Supported: P220, P550

set interface

Command Mode: Configuration

Description

Set IP configuration for a specified interface.

Command Syntax

To Enable:	`set interface {ethernet-console|inband| serial-console} <ip-address> <mask>`

Table 17-2. *Parameters, Keywords, Arguments*

Name	Definition
ethernet-console|inband|serial -console	A named interface.
ip-address	A required parameter indicating the IP address of the interface.
mask	A required parameter indicating the mask associated with IP address of the interface.

System Supported: P220, P550

set ip route

Command Mode: Configuration

Description

Set the default gateway for the named interface.

Command Syntax

To Enable:	`set ip route {default|<dest-ip-addr> <mask>} <gateway-ip-addr>`

Table 17-3. *Parameters, Keywords, Arguments*

Name	Definition
default	Searches for the matching interface as indicated by the gateway IP address and installs the default gateway on that interface.
dest-ip-addr	Searches for an interface with this assigned destination IP address and mask, and to install the default gateway on that interface.
mask	A required parameter indicating the mask associated with IP address of the interface.
gateway-ip-addr	A required parameter, indicating the default gateway IP address. **Note:** M5500/M2200 applicable only. Equivalent to the Cajun CLI command: net ip default_gateway (when using default parameter}. Equivalent to the Cajun CLI command: net ip create sroute (when using dest-ip-addr & <mask>)

System Supported: P220, P550

show arp

Command Mode: User

Description

Display the ARP cache.

Command Syntax

To View:	`show arp [<dest-ip-addresses>] [<if-name>]`

Table 17-4. *Parameters, Keywords, Arguments*

Name	Definition
dest-ip-addresses	The IP addresses of the ARP cache.
if-name	The name of the interface for the ARP cache.

Sample Output

```
Cajun> show arp 192.168.0.0
Address         MAC Address               I/F     Type      TTL
------------- ----------------- --------------- ------- --------
192.168.0.0     ff:f f:ff:ff:ff:ff 192.168.0.115Local    Not Aged
192.168.0.255   ff:ff:ff:ff:ff:ff 192.168.0.115Local     Not Aged
```

System Supported: P220, P550

show interface

Command Mode: Configuration

Description

Show IP configuration for all interfaces. When run on the M5500/M2200, it is equivalent to the Cajun CLI command: net ip display interfaces. There is no “back-end” on this command.

Command Syntax

To View:	`show interface`

System Supported: P220, P550

show ip route

Command Mode: User

Description

Display the IP routing table. When run on the M5500/M2200, it is equivalent to Cajun CLI command: net ip display route_table. There is no “back-end” on this command.

Command Syntax

To View:	show ip route

Sample Output

```
Cajun> show ip route
Codes:        I - IGRP derived, R - RIP derived, O - OSPF derived
             C - connected, S - static, E - EGP derived, B - BGP derived
              * - candidate default route
              ia - OSPF intra area route  IA - OSPF inter area route
              E1 - OSPF external type 1 route, E2 - OSPF external type
2 route
              L1 - IS-IS level-1 route, L2 - IS-IS level-2 route
              IC - ICMP derived, G - GGP derived, e - ES-IS derived
              IG - IGP derived, ID - IDPR derived, EG - EIGRP derived
              H - hello, L - local, N - Netmgmt, o - Other
o    0.0.0.0 0.0.0.0 via 192.168.0.1, 0:0:0, 192.168.0.115
L    192.168.0.0 255.255.255.0 via 192.168.0.115, 0:0:0, 192.168.0.115
```

System Supported: P220, P550

show ip route (static)

Command Mode: User

Description

Display IP static routes or the default gateway.

Command Syntax

To View:	`show ip route [{static|default-gateway|local}] [<dest-ip-addresses>][<if-name>]`

Table 17-5. *Parameters, Keywords, Arguments*

Name	Definition
static|default-gateway|local	The different types of routes are: • **static** - When run on the M5500/M2200, **show ip route static** is equivalent to the Cajun CLI command: **net ip display static_routes**. • **default-gateway** - Does not have a legacy equivalent, but does display the same information provided by the default gateway box on the *IP Configuration* Web page. • **local** - Shows all non-static (and omits the default gateway line) from the output. You may enter a destination IP address and/or an interface name that will be matched against the table of interest. If you enter **show ip route local 111.111.111.111 Ethernet**, then the local routes will be searched for a destination address of **111.111.111.111** that is associated with the Ethernet Management Interface. You may enter any combination of local, destination IP address and interface.
dest-ip-addresses	The IP addresses of the ARP cache.
if-name	The name of the interface for the ARP cache.

Sample Output

```
Cajun> show ip route static
0.0.0.0 0.0.0.0    via    192.168.0.1 cost=1 pref=low
```

System Supported: P220, P550

18 System

Overview

This chapter describes:

- ❒ boot system flash
- ❒ copy
- ❒ copy (running-config)
- ❒ copy (startup-config)
- ❒ copy (tftp)
- ❒ copy running-config
- ❒ copy running-config startup-config
- ❒ copy running-config tftp
- ❒ copy startup-config
- ❒ copy startup-config running-config
- ❒ copy startup-config tftp
- ❒ copy tftp
- ❒ copy tftp bootflash
- ❒ copy tftp flash
- ❒ copy tftp running-config
- ❒ copy tftp startup-config
- ❒ dir
- ❒ erase
- ❒ erase int-configs

- ❒ erase legacy-configs
- ❒ erase scripts
- ❒ erase startup-config
- ❒ ip http help server
- ❒ nvram initialize
- ❒ reload
- ❒ reset
- ❒ setup
- ❒ show boot
- ❒ show file_name
- ❒ show flash
- ❒ show running-config
- ❒ show startup-config
- ❒ show version

boot system flash

Command Mode: Configuration

Description

Specify the system image that the router loads at startup. Use the **no** form of this command to restore the default system flash setting. The default setting is **app1**.

Command Syntax

To Enable:	`boot system flash {app1|app2}`

Table 18-1. *Parameters, Keywords, Arguments*

Name	Definition
app1|app2	Choose app1 or app2.

Sample Output

This example specifies the system image that the router loads at startup to **app2**.

```
Cajun(configure)# boot system flash app2
  Boot flag set to 'app2'.
```

copy

Command Mode: Privileged

Description

Copy a specified file in NVRAM to another specified file in NVRAM.

Command Syntax

To Enable:	`copy <source filename> <dest filename>`

Table 18-2. *Parameters, Keywords, Arguments*

Name	Definition
source filename	The name of the source file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt"
dest filename	The name of the destination file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt"

Sample Output

This example shows the **copy <source filename> <dest filename>** command.

```
Cajun# copy ripcfg.txt test.txt
Copied file '/nvram/ripcfg.txt' to file '/nvram/test.txt'
```

copy (running-config)

Command Mode: Configuration

Description

Execute the specified file in NVRAM. The running (current) configuration becomes a merge of the executed file and the existing configuration, with the executed file taking precedence.

Command Syntax

To Enable:	`copy <filename> running-config`

Table 18-3. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt"

Sample Output

This example shows the **copy <filename> running-config** command.

```
Cajun(configure)# copy cajun51.txt running-config
Executing script '/nvram/cajun51.txt'...
Script output written to file 'logfile.txt'.
```

copy (startup-config)

Command Mode: Privileged

Description

Copy the specified file in NVRAM to the startup (bootup) configuration.

Command Syntax

To Enable:	`copy <filename> startup-config`

Table 18-4. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt"

Sample Output

This example shows the **copy <filename> startup-config** command.

```
Cajun# copy ripcfg.txt startup-config
Copied file '/nvram/ripcfg.txt' to file '/nvram/startup.txt'
```

copy (tftp)

Command Mode: Privileged

Description

Upload a specified file in NVRAM to a specified TFTP server.

Command Syntax

To Enable:	`copy <filename_opt_path> tftp <ip-addr>`

Table 18-5. *Parameters, Keywords, Arguments*

Name	Definition
filename_opt_path	The name of the file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt"
ip-addr	The IP address of the TFTP server

Sample Output

This example shows the **copy <filename_opt_path> tftp <ip-addr>** command.

```
Cajun# copy jadams/test.txt tftp 205.181.0.205
Copied file 'test.txt' to file 'jadams/test.txt' on TFTP server
205.181.0.205
```

copy running-config

Command Mode: Privileged

Description

Save the running configuration to a file in NVRAM.

Command Syntax

To Enable:	`copy running-config <filename>`

Table 18-6. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the destination file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt"

Sample Output

This example shows the **copy running-config** command.

```
Cajun# copy running-config text.txt
Wrote running-config to '/nvram/test.txt'
```

copy running-config startup-config

Command Mode: Privileged

Description

Save the running (current) configuration as the startup (bootup) configuration in NVRAM.

Command Syntax

To Enable:	`copy running-config startup-config`

Sample Output

This example shows the **copy running-config startup-config** command.

```
Cajun# copy running-config startup-config
Wrote running-config to '/nvram/startup.txt'
```

copy running-config tftp

Command Mode:

Description

Upload the running (current) configuration to the specified filename on the specified TFTP server.

Command Syntax

To Enable:	`copy running-config tftp <filename_opt_path> <ip-addr>`

Table 18-7. *Parameters, Keywords, Arguments*

Name	Definition
filename_opt_path	The filename with optional path, which may include a relative sub-directory name. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt".
ip-addr	The IP address of the TFTP server

Sample Output

This example shows the **copy running-config tftp** command.

```
Cajun# copy running-config tftp jadams/running.txt 205.181.0.205
Copied running-config to file 'jadams/running.txt' on TFTP server
205.181.0.205
```

copy startup-config

Command Mode: Privileged

Description

Copy the startup (bootup) configuration to the specified file in NVRAM.

Command Syntax

To Enable:	`copy startup-config <filename>`

Table 18-8. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the destination file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt".

Sample Output

This example shows the copy startup-config command.

```
Cajun# copy startup-config text.txt
Copied file '/nvram/startup.txt' to file '/nvram/test.txt'
```

copy startup-config running-config

Command Mode: Privileged

Description

Execute the startup (bootup) configuration. The running (current) configuration becomes a merge of the executed file and the existing configuration, with the executed file taking precedence.

Command Syntax

To Enable:	`copy startup-config running-config`

Table 18-9. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the destination file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt".

Sample Output

This example shows the **copy startup-config running-config** command.

```
Cajun(configure)# copy startup-config running-config
Cajun(configure)#
Executing script '/nvram/startup.txt'...
Script output written to file 'logfile.txt'.
```

copy startup-config tftp

Command Mode: Privileged

Description

Upload the startup (bootup) configuration to the specified file on the specified TFTP server.

Command Syntax

To Enable:	`copy startup-config tftp <filename_opt_path> <ip-addr>`

Table 18-10. *Parameters, Keywords, Arguments*

Name	Definition
filename_opt_path	The name of the destination file in NVRAM. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt".
ip-addr	The IP address of the TFTP server.

Sample Output

This example shows the **copy startup-config tftp** command.

```
Cajun# copy startup-config tftp jadams/startup.txt 205.181.0.205
Copied startup-config to file 'jadams/startup.txt' on TFTP server
205.181.0.205
```

copy tftp

Command Mode: Privileged

Description

Download the specified file from the specified TFTP server to NVRAM.

Command Syntax

To Enable:	`copy tftp <filename_opt_path> <ip-addr>`

Table 18-11. *Parameters, Keywords, Arguments*

Name	Definition
filename_opt_path	The name of the file on the TFTP server and in NVRAM, which may include a relative sub-directory name on the TFTP server. It must have a 1-8 letter base filename, and a three letter file extension.
ip-addr	The IP address of the TFTP server.

Sample Output

This example copies a file from a TFTP server to NVRAM.

```
Cajun# copy tftp jadams/test.txt 205.181.0.205
Copied file 'jadams/test.txt' from TFTP server 205.181.0.205 to
'test.txt'
```

copy tftp bootflash

Command Mode: Privileged

Description

Download a specified binary boot image from a specified TFTP server to bootflash.

Command Syntax

To Enable:	`copy tftp bootflash <image_opt_path> <ip-addr>`

Table 18-12. *Parameters, Keywords, Arguments*

Name	Definition
image_opt_path	The name of the binary image on the TFTP server; which may include a relative sub-directory name.
ip-addr	The IP address of the TFTP server.

Sample Output

This example downloads a boot image from a TFTP server to bootflash.

```
Cajun(configure)# copy tftp bootflash m55rboot_v3.0.0.bin
205.181.0.205
Received good file header.
Memory erase in progress.
Memory erase successfully completed.
Transfer in progress ...
 Transferred 125952 bytes of m55rboot_v3.0.0.bin
 Transferred 197120 bytes of m55rboot_v3.0.0.bin
 Transferred 266240 bytes of m55rboot_v3.0.0.bin
 Transferred 334848 bytes of m55rboot_v3.0.0.bin
 Transferred 403456 bytes of m55rboot_v3.0.0.bin
 Transferred 467456 bytes of m55rboot_v3.0.0.bin
 Transferred 521096 bytes of m55rboot_v3.0.0.bin
Copied file 'm55rboot_v3.0.0.bin' from TFTP server 205.181.0.205
to BOOT
```

copy tftp flash

Command Mode: Configuration

Description

Download a specified binary image from a specified TFTP server to the flash location APP1 or APP2.

Command Syntax

To Enable:	`copy tftp flash {app1|app2} <image_opt_path> <ip-addr>`

Table 18-13. *Parameters, Keywords, Arguments*

Name	Definition
app1|app2	Flash locations.
image_opt_path	The name of the binary image on the TFTP server; which may include a relative sub-directory name.
ip-addr	The IP address of the TFTP server.

Sample Output

This example downloads a boot image from a TFTP server to bootflash.

```
Cajun51(configure)# copy tftp flash app1 m5500r_a4.0.2.bin
205.181.0.205
Received good file header.
Memory erase in progress.
Memory erase successfully completed.
Transfer in progress ...
 Transferred 143872 bytes of m5500r_a4.0.2.bin
 Transferred 219136 bytes of m5500r_a4.0.2.bin
 Transferred 295936 bytes of m5500r_a4.0.2.bin
 Transferred 372736 bytes of m5500r_a4.0.2.bin
 Transferred 449536 bytes of m5500r_a4.0.2.bin
.
.

 Copied file 'm5500r_a4.0.2.bin' from TFTP server 205.181.0.205 to
APP1
```

copy tftp running-config

Command Mode: Configuration

Description

Download a specified filename from a specified TFTP server, and execute a script. The running configuration becomes a merge of the executed file and the existing configuration, with the executed file taking precedence.

Command Syntax

To Enable:	`copy tftp running-config <filename_opt_path> <ip-addr>`

Table 18-14. *Parameters, Keywords, Arguments*

Name	Definition
filename_opt_path	The name of the file on the TFTP server; may include a relative sub-directory name. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt".
ip-addr	The IP address of the TFTP server.

Sample Output

```
Cajun(configure)# copy tftp running-config jadams/ripcfg.txt
205.181.0.205
Executing script '/nvram/ripcfg.txt'...
Script output written to file 'logfile.txt'.
Copied file 'jadams/ripcfg.txt' from TFTP server 205.181.0.205 to
running-config
```

copy tftp startup-config

Command Mode: Privileged

Description

Download a specified file from a specified TFTP server, and save it as the startup (bootup) configuration in NVRAM.

Command Syntax

To Enable:	`copy tftp startup-config <filename_opt_path> <ip-addr>`

Table 18-15. *Parameters, Keywords, Arguments*

Name	Definition
filename_opt_path	The name of the file on the TFTP server; may include a relative sub-directory name. It must be an ASCII script file, with a 1-8 letter base filename, and file extension of ".txt".
ip-addr	The IP address of the TFTP server.

Sample Output

```
Cajun# copy tftp startup-config jadams.txt 205.181.0.205
Copied file 'jadams.txt' from TFTP server 205.181.0.205 to
startup-config
```

dir

Command Mode: User

Description

Display a directory listing of a single or all files in NVRAM.

Command Syntax

To Enable:	`dir [<filename>]`

Table 18-16. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the file in NVRAM. It must have a 1-8 letter base filename, and a 3 letter file extension. No wildcards are permitted.

Sample Output

```
Cajun> dir

Device Name     Capacity (Bytes)  Available (Bytes)  Utilization
NV Device       130752            116864                     11%

-#- -Length- ---Date/Time---  ----Name----
1   734      99-Sep-29 18:43  cajun51.txt
2   2705     99-Oct-01 17:35  shutdown.log
4   734      99-Sep-29 19:02  startup.txt
5   734      99-Sep-29 19:06  ripcfg.txt
6   956      99-Sep-29 18:48  ipxcfg.txt
7   908      99-Oct-01 17:37  logfile.txt
.
.
.

Cajun> dir startup.txt

-Length- ---Date/Time---  ----Name----
734      99-Sep-29 19:02  startup.txt.
```

erase

Command Mode: Privileged

Description

Erase a specified file from NVRAM.

Command Syntax

To Enable:	`erase <filename>`

Table 18-17. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of the file in NVRAM. It must have a 1-8 letter base filename, and a three letter file extension. No wildcards are permitted.

Sample Output

```
Cajun# erase test.txt
File '/nvram/test.txt' deleted.
```

erase int-configs

Command Mode: Privileged

Description

Erase all internal (v4.x and later) configurations (".int" files) from NVRAM. This enables you to go back to 3.x code.

Command Syntax

To Enable:	`erase int-configs`

Sample Output

```
Cajun# erase int-configs
Successfully deleted all Internal Configuration files from the
system.
```

erase legacy-configs

Command Mode: Privileged

Description

Erase all legacy (v3.x) configurations (".cfg" files) from NVRAM. If you do not plan on going back to 3.x code, this command enables you to free up NVRAM space on your system easily.

Command Syntax

To Enable:	`erase legacy-configs`

Sample Output

```
Cajun# erase legacy-configs
Successfully deleted all Configuration files from the system.
```

erase scripts

Command Mode: Privileged

Description

Erase all ASCII script files (".txt" files) from NVRAM. This is useful for cleaning up NVRAM, but you should copy the startup-config to TFTP first, or copy the running-config to startup-config afterward. This enables you to go back to 3.x code.

Command Syntax

To Enable:	`erase scripts`

Sample Output

```
Cajun# erase scripts
Successfully deleted all Text files from the system.
```

erase startup-config

Command Mode: Privileged

Description

Erase the startup (bootup) configuration from NVRAM.

Command Syntax

To Enable:	`erase startup-config`

Sample Output

```
Cajun# erase startup-config
File '/nvram/startup.txt' deleted.
```

ip http help server

Command Mode: Configuration

Description

Configure the HTTP server for on-line help. The **no** form of this command clears the server location.

Command Syntax

To Enable:	`ip http help server <url> <directory>`
To Disable:	`[no] ip http help server`

Table 18-18. *Parameters, Keywords, Arguments*

Name	Definition
url	The universal resource locator (url) for the help server.
directory	The name of the directory containing the help file.

Sample Output

`Cajun (Configure) #` **ip http help server www.lucent.com cli.txt**

nvram initialize

Command Mode: Configuration

Description

Clear the contents of the NVRAM file system.

Command Syntax

To Enable:	`nvram initialize`

Sample Output

This is an example nvram initialize.

```
Cajun# nvram initialize
This command will restore all configuration settings to factory
defaults.
Are you sure you want to continue? (Y/N)
NV is initialized ... reboot to take effect.
```

reload

Command Mode: Configuration

Description

Reload the software.

Command Syntax

To Enable:	reload

Sample Output

```
Cajun# reload
Booting the operational system, please wait ....

Initializing the event subsystem ... done
Initializing the agent subsystem ... initializing AppleTalk...done
done
Initializing the platform ...
    Resetting Thunderbolt ...done.
    Setting  module to MASTER and resetting chips ...done.
    Creating Ethernet Console ...done.
    Creating Display Manager ...done.
done
.
.
.
```

reset

Command Mode: Configuration

Description

Reset the switch and reload the software.

Command Syntax

To Enable:	`reset`

Sample Output

This example resets the switch and reloads the software.

```
Cajun(configure)# reset
```

setup

Command Mode: Configuration

Description

Set up the console IP address, mask or gateway.

Command Syntax

To Enable:	setup

Sample Output

This example resets the switch and reloads the software.

```
Cajun(configure)# setup
Welcome to Switch Setup.  The brief series of questions that
  follows will help you to configure this switch.  After completing
  this process, you will be able to manage the switch using:

    - the switch-based HTTP server
    - the Element Management System.

  Text in [] is the default answer for each questions.  To accept
  the default, press ENTER.

  Would you like to change the super user password [Yes]?
.
.
.
```

show boot

Command Mode: User

Description

Display the contents of the BOOT environment variable.

Command Syntax

To Enable:	`show boot`

Sample Output

```
Cajun> show boot
Checking for valid image in BOOT.
File Information:
     File Format Type = Binary
     Target Location = Boot
     Data Compression = None
Product Information:
     Version Number = v2.00.0
     Serial Number = 000-00-0000
     Model Number = 5500R
Image Information:
Entry Address = 0x00020000
Non-compressed Image:
Size = 0x000779f8 bytes
Checksum = 0xb474
Checksum of image in FEPROM is 0xb474.
Checksum of image in DRAM is 0x9c1f.
.
.
.
```

show file_name

Command Mode: Privileged

Description

Display the contents of a specified file in NVRAM.

Command Syntax

To View:	`show file_name <filename>`

Table 18-19. *Parameters, Keywords, Arguments*

Name	Definition
filename	The name of a script file in NVRAM. This command only works with filenames that have a ".txt" extension. The filename parameters must be in an "8.3" format - one to eight (1-8) character base file name and a required three (3) letter extension.

Sample Output

```
Cajun# show file_name startup.txt
P550R Documentation# show file_name startup.txt
Contents of file '/nvram/startup.txt':
!
! Lucent Technologies Cajun Switch Agent A4.0.1
!
set intelligent-multicast client-port-pruning enable
set intelligent-multicast client-port-pruning time 60
!
hostname "Cajun"
snmp-server location "[Location Not Set]"
snmp-server contact "System Administrator"
clock summer-time recurring 1 Sunday Apr 02:00 5 Sunday Oct 02:00 60
username "root" password encrypted-type1 "$tSfIcnbTP.pxRf7BrhGW31"
access-type .
.
.
```

show flash

Command Mode: User

Description

Display the layout and contents of flash memory.

Command Syntax

To View:	`show flash`

Sample Output

```
Cajun> show flash
Checking for valid image in BOOT.
File Information:
   File Format Type = Binary
   Target Location = Boot
   Data Compression = None
Product Information:
   Version Number = v2.00.0
   Serial Number = 000-00-0000
   Model Number = 5500R
Image Information:
   Entry Address = 0x00020000
   Non-compressed Image:
      Size = 0x000779f8 bytes
      Checksum = 0xb474
Checksum of image in FEPROM is 0xb474.
Checksum of image in DRAM is 0x1e12.
.
.
.
```

show running-config

Command Mode: Privileged

Description

Display the current running configuration.

Command Syntax

To View:	show running-config

Sample Output

```
 Cajun# show running-config
 Current configuration:
!
! Lucent Technologies Cajun Switch Agent b4.0.1
!
set intelligent-multicast client-port-pruning enable
set intelligent-multicast client-port-pruning time 60
!
hostname "Cajun"
snmp-server location "[Location Not Set]"
snmp-server contact "System Administrator"
ip http help server "http://199.93.237.91:2010" "help"
clock summer-time recurring 1 Sunday Apr 02:00 5 Sunday Oct 02:00 60
username "root" password encrypted-type1 "$tSfIcnbTP.pxRf7BrhGW31"
access-type admin
username "diag" password encrypted-type1 "$PQO.vGxkvDHkEDCJ2YsoD1"
access-type read-write
username "manuf" password encrypted-type1 "$seHFLP9b16m2v/534WCk90"
access-type read-write
snmp-server community "public" ro normal
.
.
.
```

show startup-config

Command Mode: Privileged

Description

Display any existing startup configuration. (STARTUP.TXT file)

Command Syntax

To View:	show startup-config

Sample Output

```
 Cajun# show startup-config
 P550R Documentation# show startup-config
Contents of file '/nvram/startup.txt':
!
! Lucent Technologies Cajun Switch Agent b4.0.1
!
set intelligent-multicast client-port-pruning enable
set intelligent-multicast client-port-pruning time 60
!
hostname "Cajun"
snmp-server location "[Location Not Set]"
snmp-server contact "System Administrator"
clock summer-time recurring 1 Sunday Apr 02:00 5 Sunday Oct 02:00 60
username "root" password encrypted-type1 "$tSfIcnbTP.pxRf7BrhGW31"
.
.
.
```

show version

Command Mode: User

Description

Display the software version currently running on the system, and the software boot code version.

Command Syntax

To View:	`show version`

Sample Output

```
Cajun>  show version
Lucent Technologies Cajun Switch Agent b4.0.1
```

19

Temperatures

Overview

This chapter describes:

- ❒ clear temperatures
- ❒ set temperature (shutdown)
- ❒ set temperature (warning)
- ❒ show temperatures

clear temperatures

Command Mode: Configuration

Description

Returns all of the configured warning and shutdown temperatures (in Celsius) to their default values. The default values are listed in Table 28-1.

Table 19-1. *Default Shutdown and Warning Temperatures*

Default Shutdown & Warning Temperatures	Shutdown	Upper	Lower Warning	Low Limit
`CPU Sensor`	**100°**	**85°**	**5°**	**0°**
`All others`	**50°**	**45°**	**5°**	**0°**

Command Syntax

To Enable:	`clear temperatures`

Sample Output

This example clears all of the configured warning and shutdown temperatures.

```
Cajun(configure)# clear temperatures
```

set temperature (shutdown)

Command Mode: Configuration

Description

Set the shutdown temperature for a specific component of the Cajun switch. The default values are listed in Table 28-2.

Table 19-2. *Default Shutdown and Warning Temperatures*

Shutdown & Warning Temperatures	Shutdown	Upper	Lower Warning	Low Limit
CPU Sensor	**100°**	**85°**	**5°**	**0°**
All others	**50°**	**45°**	**5°**	**0°**

Command Syntax

To Enable:	`set temperature {supervisor-slot|backplane-sensor |cpu-sensor|probe} shutdown <temperature>`

Table 19-3. *Parameters, Keywords, Arguments*

Name	Definition
supervisor-slot| backplane-sensor| cpu-sensor|probe	These parameters indicate which component of the switch is of interest.
shutdown	Shutdown is a required parameter and indicates that the shutdown limit temperature is being set.
temperature	Temperature is a required parameter and when the switch measures this value on this component, it shuts itself down in order to prevent either inconsistent behavior or damage to itself or surrounding equipment. The command checks the entered temperature value and ensures that the temperature being set is not above 127, and not below -128 degrees.

Sample

This example sets the CPU sensor shutdown temperature to 95° (Celsius).

```
Cajun(configure)# set temperature shutdown cpu-sensor 95
```

set temperature (warning)

Command Mode: Configuration

Description

Sets the warning temperature (in Celsius) for a specific component of the Cajun P550 switch. The default values are listed in Table 28-4.

Table 19-4. *Default Shutdown and Warning Temperatures*

Shutdown & Warning Temperatures	Shutdown	Upper	Lower Warning	Low Limit
CPU Sensor	**100°**	**85°**	**5°**	**0°**
All others	**50°**	**45°**	**5°**	**0°**

Command Syntax

To Enable:	`set temperature {supervisor-slot|backplane-sensor| cpu-sensor|probe} warning {upper|lower|low-limit} <temperature>`

Table 19-5. *Parameters, Keywords, Arguments*

Name	Definition
supervisor-slot| backplane-sensor| cpu-sensor|probe	These parameters indicate which component of the switch is of interest.
warning	Warning is a required parameter indicating that a warning limit is being modified.
upper|lower| low-limit	One of these parameters is required to indicate whether the upper, lower, or low-limit warning is being changed.
temperature	Temperature is a required parameter and when the switch measures this value on this component, it shuts itself down in order to prevent either inconsistent behavior or damage to itself or surrounding equipment. The command checks the entered temperature value and ensures that the temperature being set is not above 127, and not below -128 degrees.

Sample Output

This example sets the backplane-sensor warning upper temperature to 44° (Celsius).

```
Cajun(configure)# set temperature backplane-sensor warning upper
44
```

show temperatures

Command Mode: User

Description

Display the current temperatures and the configured temperature limits. There is no reverse mapping to this command. The default values are listed in Table 28-6.

Table 19-6. *Default Shutdown and Warning Temperatures*

Shutdown & Warning Temperatures	Shutdown	Upper	Lower Warning	Low Limit
CPU Sensor	**100°**	**85°**	**5°**	**0°**
All others	**50°**	**45°**	**5°**	**0°**

Command Syntax

To View:	`show temperatures`

Sample Output

```
Cajun> show temperatures
                                Slot 1 Sensor  Backplane Sensor  CPU Sensor
Shutdown Temperature            50                 50                100
Upper Warning Temperature       45                 45                 85
Current Temperature             29                 35                 68
Lower Warning Temperature        5                  5                  5
Low Limit Temperature            0                  0                  0
```

20 UI

Overview

This chapter describes:

- ❒ connect
- ❒ disable
- ❒ enable
- ❒ end
- ❒ exit
- ❒ help
- ❒ legacy-cli
- ❒ length
- ❒ show history
- ❒ show sessions
- ❒ show whoami
- ❒ telnet
- ❒ terminal databits
- ❒ terminal flowcontrol
- ❒ terminal history
- ❒ terminal length
- ❒ terminal output pause
- ❒ terminal parity
- ❒ terminal speed

- ❒ terminal stopbits
- ❒ terminal width
- ❒ username
- ❒ width

configure

Command Mode: Privileged

Description

Enter the Configuration mode.

Command Syntax

To Enable:	`configure`

Sample Output

```
Cajun# configure
Cajun (configure)#
```

connect

Command Mode: Privileged

Description

Log in to a host that supports Telnet.

Command Syntax

To Enable:	`connect <ip-addr>`

Table 20-1. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	The IP address of the host in 4-part, dotted-decimal notation.

Sample Output

This example connects to the host with the IP address 123.23.23.2.

```
Cajun# connect 123.23.23.2
```

disable

Command Mode: Privileged

Description

Exit the Privileged mode and return to the User mode.

Command Syntax

To Enable:	`disable`

Sample Output

```
Cajun# disable
Cajun>
```

enable

Command Mode: User

Description

Enter the Privileged mode.

Command Syntax

To Enable:	`enable`

Sample Output

```
Cajun> enable
Cajun#
```

end

Command Mode: Configuration

Description

Exit the Configuration mode and return to the Privileged mode. Ctrl-z also performs the same function.

Command Syntax

To Enable:	end

Sample Output

```
Cajun(configure)# end
Cajun#
```

exit

Command Mode: Configuration

Description

Exit current mode and re-enter previous mode.

Command Syntax

To Enable:	`exit`

Sample Output

```
Cajun(configure)# exit
Cajun#
```

help

Command Mode: User

Description

Display a list of commands available in the current command mode, along with a brief description of what each command.

Command Syntax

To Enable:	`help`

Sample Output

This example shows the help command for the User mode.

```
Cajun> help

dir [<filename>]
  Display the list of files in NVRAM, or a specific filename

enable
  Enter privileged mode

exit
  Exit current mode and re-enter previous mode

help
  Display full help list of all commands available in the current
mode

ip mtrace
no ip mtrace
  enable/disable mtrace globally.

legacy-cli
  Enter Legacy CLI Mode (Based on Cajun v.3.0 and previous)
.
.
.
```

legacy-cli

Command Mode: User

Description

Enter the Cajun 3.0 and older CLI.

Note: Only those commands in Release 3.1 or higher are in the Cajun 4.0 release.

Command Syntax

To Enable:	`legacy-cli`

Sample Output

```
Cajun> legacy-cli

*** Entering Legacy CLI mode ***

To set or change console IP Address/Mask/Default Gateway run setup
command.

Cajun> ?
community  SNMP Community configuration
console    Console configuration
download   TFTP code image download
event      Event Table display
.
.
.
Cajun> exit


*** Returning to Normal CLI mode ***
```

length

Command Mode: User

Description

Set the terminal screen length. Use the **no** form of this command to restore the default value of 24.

Command Syntax

To Enable:	`length <length>`
To Disable:	`no length`

Table 20-2. *Parameters, Keywords, Arguments*

Name	Definition
length	The number of lines to print before displaying the --more- prompt (5+ Lines).

Sample Output

```
Cajun> length 50
```

show history

Command Mode: User

Description

Display an alphabetic list of the last 20 commands entered in the current session.

Command Syntax

To View:	`show history`

Sample Output

```
Cajun> show history
show appletalk nbp
show appletalk route
show appletalk traffic
show appletalk zone
show boot
show buffering fabric-port
show buffering fabric-port
.
.
.
```

show sessions

Command Mode: User

Description

Display the active telnet, serial and ppp sessions of the CLI.

Command Syntax

To View:	show sessions

Sample Output

```
Cajun> show sessions
Session ID              Line ID        Location
1 moe.lucentctc.com    205.181.0.56        moe
2 jerry.lucentctc.com  205.181.0.56        moe
```

show whoami

Command Mode: User

Description

Display information about the current user's terminal line, including hostname and session.

Command Syntax

To View:	`show whoami`

telnet

Command Mode: Privileged

Description

Log in to a host that supports telnet.

Command Syntax

To Enable:	`telnet <ip-addr>`

Table 20-3. *Parameters, Keywords, Arguments*

Name	Definition
ip-addr	The IP address of the host.

Sample Output

```
Cajun# telnet ?
        <ip-addr> - IP Address (a.b.c.d)
Cajun# telnet 192.161.55.83
translating 192.161.55.83...ok
connecting to host 192.161.55.83 (192.161.55.83)...open
escape character is '^]'
type '^] c' to close Telnet Connection
```

terminal databits

Command Mode: Configuration

Description

Set the databits parameter on the terminal port (also known as the console port).

Command Syntax

To Enable:	`terminal databits {7|8}`

Table 20-4. *Parameters, Keywords, Arguments*

Name	Definition
{7|8}	This is a required parameter. The number indicates the number of bits used in the data stream.

Sample Output

```
Cajun(configure)# terminal databits 8
```

terminal flowcontrol

Command Mode: Configuration

Description

Sets the flowcontrol for the terminal port (also known as the console port).

Command Syntax

To Enable:	`terminal flowcontrol {none|xon/xoff}`

Table 20-5. *Parameters, Keywords, Arguments*

Name	Definition
none|xon/xoff	A required parameter that indicates either no flowcontrol (none), or use xon/xoff flow control.

Sample Output

```
Cajun(configure)# terminal flowcontrol xon/xoff
```

terminal history

Command Mode: Privileged

Description

Enable the command history feature for the current terminal session. Use the **no** form of this command to disable terminal history.

Command Syntax

To Enable:	`terminal history`
To Disable:	`[no] terminal history`

terminal length

Command Mode: User

Description

Set the number of lines on the current terminal screen for the current session. The **no** form of this command restores the default length to **24 lines**.

Command Syntax

To Enable:	`terminal length <length>`
To Disable:	`[no] terminal length`

Table 20-6. *Parameters, Keywords, Arguments*

Name	Definition
length	The number of lines to print before displaying the --more- prompt (5+ Lines).

Sample Output

```
Cajun> terminal length 50
```

terminal output pause

Command Mode: User

Description

Enable output from the terminal to pause when the configured screen length is reached. A pause is indicated by a **--more--** prompt. The **no** form of this command disables this function, returning it to its default, which is **disabled**.

In addition, you can terminate a current print job by pressing either **Q** or **<Ctrl-C>** at the **--more--** prompt. Continue printing by pressing any other key.

Command Syntax

To Enable:	`terminal output pause`
To Disable:	`[no] terminal output pause`

Sample Output

```
Cajun(configure)# no terminal output pause
```

terminal parity

Command Mode: Configuration

Description

Set the parity parameter on the console port.

Command Syntax

To Enable:	`terminal parity {none|even|odd}`

Table 20-7. *Parameters, Keywords, Arguments*

Name	Definition
none|even|odd	A required parameter that indicates no parity, odd parity, or even parity checking for the data portion being transported over the wire.

Sample Output

```
Cajun(configure)# terminal parity none
```

terminal speed

Command Mode: Configuration

Description

Set the baud rate on the console port. The default baud rate is **9600**.

Command Syntax

To Enable:	`terminal speed {300|1200|2400|4800|9600|19200| 38400|57600|115200}`

Table 20-8. *Parameters, Keywords, Arguments*

Name	Definition
300|1200|2400|... |57600|115200	A required parameter, indicating the baudrate to which the physical port should be set.

Sample Output

```
Cajun(configure)# terminal speed 19200
```

terminal stopbits

Command Mode: Configuration

Description

Set the stopbits parameter on the console port.

Command Syntax

To Enable:	`terminal stopbits {1|2}`

Table 20-9. *Parameters, Keywords, Arguments*

Name	Definition
1|2	A required parameter indicating how many stopbits are present within each data unit on the wire.

Sample Output

```
Cajun(configure)# terminal stopbits 1
```

terminal width

Command Mode: User

Description

Set the number of character columns on the terminal screen. The **no** form of this command restores the default value of **80 characters**.

Command Syntax

To Enable:	`terminal width <characters>`
To Disable:	`[no] terminal width`

Table 20-10. *Parameters, Keywords, Arguments*

Name	Definition
characters	The screen width (40+ characters).

Sample Output

```
Cajun> terminal width 120
```

username

Command Mode: Configuration

Description

Create a new user account.

Command Syntax

To Enable:	`username <name> password [encrypted-type1] <passwd> [access-type {read-only|read-write|admin}]`
To Disable:	`[no] username <name>`

Table 20-11. *Parameters, Keywords, Arguments*

Name	Definition
name	The user's name.
password	The user's password.
encrypted-type1	The user's encrypted password. **passwd** - The user's password. **Note:** If the [encrypted-type1] keyword precedes the <passwd> field, then the system treats the <passwd> entry as an MD5 encrypted string.
access-type	The access level for the user. The access types are: • read-only • read-write • admin

Sample Output

```
Cajun# username john stapler access-type admin
```

width

Command Mode: User

Description

Set the number of character columns on the terminal screen. The **no** form of this command restores the default value of **80 characters**.

Command Syntax

To Enable:	`width <characters>`
To Disable:	`[no] width`

Table 20-12. *Parameters, Keywords, Arguments*

Name	Definition
characters	The screen width (40+) characters.

Sample Output

```
Cajun> width 50
```

21

VLAN

Overview

This chapter describes:

- set vlan
- set vlan (frame format)
- set vtp-snooping
- set vtp-snooping domain
- show vlan detailed
- show vlan name
- show vtp-snooping configuration

set vlan

Command Mode: Configuration

Description

This command in its positive form creates or renames a VLAN with the specified <vlan-id> and <vlan-name>. The command is interpreted as a creation command if the <vlan-id> does not yet exist. If the <vlan-id> does exist the command is interpreted as a rename command and the optional arguments, except the vlan name, are ignored.

In its negative form, this command deletes the vlan specified by the user.

Command Syntax

To Enable:	`set vlan <vlan-id> [name <vlan-name>] [autoincrement-HT-size {true|false}] [init-HT-size <size>]`
To Disable:	`clear vlan {<vlan-id>|name <vlan-name>}`

Table 21-1. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	• If creating a VLAN, this command specifies the VLAN's vlanID. • If modifying the name, this command specifies the VLAN to modify by its vlanID. • In the negative form, it specifies the VLAN to delete by its vlanID.
vlan-name (Optional in create)	• If creating a VLAN, this command specifies the name of the VLAN to create. • If left blank, the system will attempt to create a default name of the form VLANxxxx, where xxxx is the <vlan-id> padded to four spaces. For example the command "set vlan 10" would attempt to create a VLAN with an ID of 10 and a name of VLAN0010. • In the negative syntax, this command specifies the VLAN to delete by its name.

auto-increment-HT-size	This argument specifies whether the AFT hash table associated with this VLAN can grow when the table is full (defaults to true).
init-HT-size	This argument specifies the initial hash table size. The table size specified must be one of 16, 32, 64, 128, 256, 512, 1024, 2048, 4096 or 8192 (defaults to 1024).

Sample Output

```
%Creation%
Cajun(configure)# set vlan 30 name "Blue" autoincrement-HT-size
false
VLAN ID 30 created
%Rename%
Cajun(configure)# set vlan 30 name "Yellow"
VLAN ID 30 renamed "Yellow"
%Delete%
Cajun(configure)# clear vlan name "Yellow"
Delete VLAN "Yellow" (ID 30)? (Y/N)
VLAN ID 30 deleted0
```

set vlan

Command Mode: Configuration

Description

This command adds or removes one or more switch port[s] to or from the VLAN specified by the user.

Guidelines

The command is interpreted as a creation command if the <vlan-id> does not yet exist. If the <vlan-id> does exist the command is interpreted as a rename command and the optional arguments, if specified, are ignored. The two optional arguments for VLAN creation are:

1. **autoincrement-HT-size**: This argument specifies whether the AFT hash table associated with this VLAN can grow when the table is full (defaults to TRUE).
2. **init-HT-size**: This argument specifies the initial hash table size. The table size specified must be one of 16, 32, 64, 128, 256, 512, 1024, 2048, 4096 or 8192 (defaults to 1024).

Command Syntax

To Enable:	`set vlan {<vlan-id>|name <vlan-name>}` `<mod-port-range>[...,<mod-port-range>]`
To Disable:	`clear vlan {<vlan-id>|name <vlan-name>}` `<mod-port-range>[...,<mod-port-range>]`

Table 21-2. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	Specifies the VLAN to add or remove ports to or from by its VLAN ID.
vlan-name	Specifies the VLAN to add or remove ports to or from by it's name.
mod-port-range	Specifies a single switch port or range of switch ports on a module to add or remove to or from the VLAN.

Sample Output

In the following example, 5/1 refers to port 1 on module 5. 5/1-20 refers to ports 1 through 20 on module 5. This command will also accept a comma delimited list of ports or port ranges.

```
Examples:
Cajun(configure)# set vlan 100 4/1, 4/3-4
Switch port 4/1 bound to VLAN ID 100
WARNING: All untagged frames received on port 4/1 are mapped to the
Port Default VLAN "Default"
Switch port 4/3 bound to VLAN ID 100
WARNING: All untagged frames received on port 4/3 are mapped to the
Port Default VLAN "Default"
Switch port 4/4 bound to VLAN ID 100
WARNING: All untagged frames received on port 4/4 are mapped to the
Port Default VLAN "Default"

Cajun(configure)# clear vlan name "adams" 4/1, 4/3-4
Switch port 4/1 unbound from VLAN ID 100
Switch port 4/3 unbound from VLAN ID 100
Switch port 4/4 unbound from VLAN ID 100
```

set vlan (frame format)

Command Mode: Configuration

Description

This command modifies the frame tagging format of the switch port(s) bound to the specified VLAN.

Guidelines

There are two forms of the command.

1. **set vlan <vlan-id> …**: Modifies the frame format for the specified switch port(s) on the VLAN specified by <vlan-id>.
2. **set vlan name <vlan-name> …**: Modifies the frame format for the specified switch port(s) on the VLAN specified by <vlan-name>.

The switch port argument(s) take any number of switch port specifications separated by either commas or whitespace. The two different switch port specifications are shown below.

individual switch port: <mod-num>/<port-num>
switch port range: <mod-num>/<port-num>-<port-num>

Command Syntax

To Enable:	`set vlan {<vlan-id> | name <vlan-name>} <mod-swport-range>[...,<mod-swport-range>] frame-format {clear | from-port}`

Table 21-3. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	Specifies the VLAN the switch port is bound to by its VLAN ID.
vlan-name	Specifies the VLAN the switch port is bound to by its name.

mod-swport-range	Specifies a single switch port or range of switch ports on a module to add or remove to or from the VLAN.
frame-format	Either 'clear' or 'from-port'. • Clear means frames set out the specified port[s] on the specified VLAN will be sent out without tags, regardless of what the trunking attribute of the switch port[s] is/are set to. • From-port means that the frames will be sent out with whatever tag the switch port[s] trunking attribute is set to, if any.

Sample Output

```
Cajun(configure)# set vlan 1 4/1 frame-format clear
VLAN ID 1, switch port 4/1 frame-format set to "clear"
Cajun(configure)# set vlan 100 4/1, 4/3-4
Switch port 4/1 bound to VLAN ID 100
```

set vtp-snooping

Command Mode: Configuration

Description

Defines the state of VTP Snooping on the switch.

Command Syntax

To Enable:	`set vtp-snooping <enable|disable>`

Table 21-4. *Parameters, Keywords, Arguments*

Name	Definition
enable	Allows VTP snooping to run on any properly configured switch port.
disable	Stops VTP snooping from running on any switch port.

Sample Output

```
Cajun(configure)# set vtp-snooping enable
vtp-snooping parameter modified.
Cajun(configure)#
```

set vtp-snooping domain

Command Mode: Configuration

Description

Defines the VTP domain name from which the switch is to learn from Cisco VTP frames. The clear form of this command can be used to clear any learned or defined domain name. The default is the domain name is initialized to a NULL string when starting with default parameters.

Guidelines

The domain name can be automatically learned in approximately learned in approximately 5 or less minutes from the Cisco VTP server, provided this switch's vtp-domain-name is Null and its vtp-snooping state is set to "Enable."

Command Syntax

To Enable:	`set vtp-snooping domain <name>`
To Disable:	`clear vtp-snooping domain`

Table 21-5. *Parameters, Keywords, Arguments*

Name	Definition
name	The Cisco VTP domain name to which this switch is to listen for VTP messages.

Sample Output

```
Cajun(configure)# set vtp-snooping domain Corporate
vtp-snooping parameter modified.
Cajun(configure)#
```

show vlan detailed

Command Mode: User

Description

Display information about all of the VLANs that currently exist in the system. There are two different forms of the command.

Command Syntax

To Enable:	`show vlan [detailed]`

Table 21-6. *Parameters, Keywords, Arguments*

Name	Definition
detailed	Shows a detailed output of the VLANs that currently exist on the system including switch ports that are bound to that VLAN.

Sample Output

```
Cajun(configure)# show vlan
VLAN                                      Group      AFT
 ID     VLAN Name                          ID       Index      Learned
-----   -------------------------------   -----     -----      -------
1       Default                           2          1            -
100      Adams                            100          8            -
8193    Discard                           3          3            -

Cajun(configure)# show vlan detailed
VLAN                                      Group    AFT
 ID     VLAN Name                          ID     Index   Learned
-----   -------------------------------   -----   -----   -------
1       Default                           2       1         -
Switch Ports:  2/1, 4/1, 4/2, 4/3, 4/4
100    Akbarr                             100       8         -
Switch Ports: 4/1, 4/2, 4/3, 4/4
8193    Discard                           3       3         -
Switch Ports:
Field                 Description
------                --------------
VlanID                VlanID of the VLAN.
```

Vlan Name	Name of the VLAN.
GroupID	Vlan GroupID of the VLAN. (Group ID is used for internal representation of the VLAN)
AFT Index	The AFT Instance Index associated with this VLAN.
Learned	How the VLAN was created on the switch: * '-' means it was created manually by user or automatically by the switch * 'auto' means it was learned by the Auto VLAN Create function of the switch port. * 'vtp' means it was learned through VTP.
	Switch Ports (detailed only) List of switch ports that are bound to this VLAN.

show vlan name

Command Mode: User

Description

Display information about all of the VLANs that currently exist in the system. There are two different forms of the command.

Command Syntax

To Enable:	`show vlan {<vlan-id>|name <vlan-name>}`

Table 21-7. *Parameters, Keywords, Arguments*

Name	Definition
vlan-id	Specifies a VLAN by its VLAN ID.
vlan-name	Specifies a VLAN by its name.

Sample Output

```
Cajun(configure)# show vlan 1
VLAN                                      Group    AFT
 ID     VLAN Name                          ID     Index   Learned
-----   -------------------------------   -----   -----   -------
1       Default                           2       1         -
Switch Ports: 2/1, 4/1, 4/2, 4/3, 4/4

Field                 Description
------                --------------
VlanID           VlanID of the VLAN.
Vlan Name        Name of the VLAN.
GroupID           Vlan GroupID of the VLAN. (Group ID is used for
                  internal representation of the VLAN)
AFT Index        The AFT Instance Index associated with this VLAN.
Learned          How the VLAN was created on the switch:
                 * '-' means it was created manually by user or
                       automatically by the switch
                   * 'auto' means it was learned by the Auto VLAN Create
                     function of the switch port.
                 * 'vtp' means it was learned through VTP.
Switch Ports     List of switch ports that are bound to this VLAN.
```

show vtp-snooping configuration

Description

Displays the configured and learned VTP snooping configuration. The default is None.

Command Syntax

To Enable:	`show vtp-snooping configuration`

Sample Output

```
550(configure)# show vtp-snooping configuration
 VTP Snooping State:            Enable
 Domain Name:                   Corporate
 Configuration Revision Number: 28
 Updater Identity:              199.160.0.140
 Update Timestamp:              99/10/05.10:02:50
```

22

VRRP

Overview

This chapter describes:

- ❒ ip vrrp
- ❒ ip vrrp (address)
- ❒ ip vrrp (auth-key)
- ❒ ip vrrp (priority)
- ❒ ip vrrp (timer)
- ❒ router vrrp
- ❒ show ip vrrp

ip vrrp

Command Mode: Interface

Description

Globally enable or disable VRRP (Virtual Router Redundancy Protocol) on an interface. Use the **no** form of this command to disable VRRP on this interface.

Command Syntax

To Enable:	`ip vrrp`
To Disable:	`[no] ip vrrp`

Sample Output

```
Cajun(config-if:ethernet)# ip vrrp
```

System Supported: P550R

ip vrrp (address)

Command Mode: Interface

Description

Set the virtual router IP address for the virtual router ID. Use the **no** form of this command to remove this virtual router address instance.

Command Syntax

To Enable:	`ip vrrp <vr-id> address <ip-address>`
To Disable:	`[no] ip vrrp <vr-id> address <ip-address>`

Table 22-1. *Parameters, Keywords, Arguments*

Name	Definition
vr-id	The ID of the virtual router.
ip-address	The IP address of the virtual router.

Sample Output

This example enables vrrp on an interface.

```
Cajun(config-if:serial0)# ip vrrp 1 address 10.0.1.2
```

System Supported: P550R

ip vrrp (auth-key)

Command Mode: Interface

Description

Set the virtual router simple password authentication for the virtual router ID. Use the **no** form of this command to disable simple password authentication for the virtual router instance.

Command Syntax

To Enable:	`ip vrrp <vr-id> auth-key <key-string>`
To Disable:	`[no] ip vrrp <vr-id> auth-key`

Table 22-2. *Parameters, Keywords, Arguments*

Name	Definition
vr-id	Virtual router ID.
key-string	Simple password string.

Sample Output

This example requires you to put in your password.

```
Cajun(config-if:serial0)# ip vrrp 1 auth-key put password here
```

System Supported: P550R

ip vrrp (priority)

Command Mode: Interface

Description

Set the virtual router priority value for the virtual Router ID. Use the **no** form of this command to restore the default value.

Command Syntax

To Enable:	`ip vrrp <vr-id> priority <pri-value>`
To Disable:	`[no] ip vrrp <vr-id> priority`

Table 22-3. *Parameters, Keywords, Arguments*

Name	Definition
vr-id	Virtual router ID.
pri-value	The priority value. The range is **1 - 254**.

Sample Output

This example sets the priority value.

```
Cajun(config-if:serial0)# ip vrrp 1 priority 256
```

System Supported: P550R

ip vrrp (timer)

Command Mode: Interface

Description

Set the virtual router advertisement timer value for the virtual router ID. Use the **no** form of this command to restore the default value.

Command Syntax

To Enable:	`ip vrrp <vr-id> timer <value>`
To Disable:	`[no] ip vrrp <vr-id> timer`

Table 22-4. *Parameters, Keywords, Arguments*

Name	Definition
vr-id	Virtual router ID.
value	The advertisement transmit time. The range is **1 - 255.**

System Supported: P550R

router vrrp

Command Mode: Configuration

Description

Enable VRRP routing globally. Use the **no** form of this command to disable VRRP routing.

Command Syntax

To Enable:	`router vrrp`
To Disable:	`[no] router vrrp`

Sample Output

```
Cajun(config-if:ethernet)# router vrrp
```

System Supported: P550, P550R

show ip vrrp

Command Mode: User

Description

Display VRRP information.

Command Syntax

To View:	`show ip vrrp [<if-name> [router-id <vr-id>]] [detail]`

Table 22-5. *Parameters, Keywords, Arguments*

Name	Definition
if-name	Filter by interface name.
router-id	Filter by virtual router ID.
vr-id	The virtual router ID.
details	Provide detailed information.

Sample Output

```
Cajun> show ip vrrp
Interface VRID   IP Address    Pri  Timer  State       Since
-------------   ---- -------------  ----   -----   ----------
vlan9      1      9.0.0.100     255    1    MASTER     09:42:13
```

System Supported: P550R

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